

# 1993 Western Australian Year Book



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#### Cover:

The bottlenosed dolphin (*tursiops truncatus*) is the third in a series of cover designs of fauna associated with Western Australia which have been commissioned for the Western Australian Year Book - the pink cockatoo featured on the 1992 cover and the honey possum on the 1991 cover.

Although not native to Western Australia, the bottlenosed dolphins are found along the length of the Western Australian coastline and their contact with humans at places such as Monkey Mia has attracted worldwide interest.

Design:

Shaan Coutinho

# Western Australian Year Book 1993

# WESTERN AUSTRALIAN YEAR BOOK

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Deputy Commonwealth Statistician

and Government Statistician

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# PREFACE

The 1993 Western Australian Year Book is a general reference work produced by the Australian Bureau of Statistics (ABS) presenting current data on the social, economic and demographic make up of the State. This 1993 edition has been substantially revised and contains new chapters on the economy and the environment as well as a significant increase in the use of special feature articles designed to highlight noteworthy issues, and events.

The information in the 1993 Western Australian Year Book is compiled from the wide range of data which is collected by the ABS and made available to the community. The data is disseminated in printed publications; in electronic format and on microfiche, magnetic tape, floppy disk or CDROM (such as CDATA 91 and CMAP 91).

Publications and other statistical products can be purchased from the ABS Bookshop. Clients can also arrange to be placed on a publications subscription service to receive ABS publications on a regular basis. The ABS library holds all ABS publications and other statistical material. Selected libraries in the Perth Metropolitan area and major regional centres also hold a comprehensive range of ABS publications. The publications of the Western Australian Office are listed in the Appendix.

The Western Australian office also maintains a comprehensive Information Consultancy Service which provides information tailored to support informed decision making within Government and the community generally. Consultants are available to discuss client's requirements and to work together with them to achieve the best solution for their information needs.

Production of the 1993 Western Australian Year Book required a range of skills and considerable effort. I gratefully acknowledge the valuable assistance given by individuals, businesses, government agencies and other organisations who have written articles, updated tables and text or supplied photographs and maps.

This 1993 edition was compiled by the ABS Publishing section and I would like to congratulate them for their professionalism and commitment. I thank the staff of Advanced Press; Shaan Coutinho, the designer of this year's striking cover; and all ABS staff who made valuable contributions.

P. C. KELLY Deputy Commonwealth Statistician and Government Statistician

August 1993

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### **GENERAL INFORMATION**

### Symbols

The following symbols mean:

| ABS    | Australian Bureau of Statistics                  |
|--------|--|
| n.a.   | not available                                    |
| n.e.c. | not elsewhere classified                         |
| n.e.i. | not elsewhere included                           |
| n.e.s. | not elsewhere specified                          |
| n.p.   | not available for separate publication           |
| •      | (but included in totals where applicable)        |
| n.y.a. | not yet available                                |
| p      | preliminary—figure or series subject to revision |
| r      | figures or series revised since previous issue   |
| -      | nil or rounded to zero                           |
|        | not applicable                                   |
|        | break in continuity of series                    |
|        | (where drawn between two consecutive figures     |
|        | or columns)                                      |
| *      | subject to sampling variability                  |
|        | too high for most practical uses                 |

#### Other forms of usage

*Rounding.* Where figures have been rounded, discrepancies may occur between sums of the component items and totals.

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#### Feedback from readers

The ABS endeavours to keep the balance of the contents of the Western Australian Year Book in line with the ever changing social, economic and demographic conditions in the State. Comments on the relevance, adequacy and balance of the contents of the Western Australian Year Book are welcomed and should be directed to The Editor, Western Australian Year Book, ABS Perth Office.

# HISTORY

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## Chapter 1

# HISTORY

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### Chapter 1

### HISTORY

### From Settlement to Federation

Contributed by John M. Clark, BA (Hons.), Councillor, Royal Western Australian Historical Society.

Settlement

After Captain James Stirling's 1827 exploration of the Swan River and report favouring settlement, the British Government accepted the report and moved quickly to institute preparations for settlement. On 2 May 1829, Captain Charles Howe Fremantle, on HMS *Challenger*, arrived at the mouth of the Swan River, hoisted the Union Jack on the south head and took formal possession in the name of King George IV of "all that part of New Holland which is not included within the territory of New South Wales".

Captain Stirling (appointed Lieutenant-Governor on 30 December 1828) arrived on 1 June 1829 on board the transport *Parmelia*, a 443 ton bargue, with some 70 other settlers who were to form the nucleus of the colony's civil service. Among those on board were colonial а secretary (the senior civil officer below Stirling); a civil engineer; a harbourmaster; a naturalist; a superintendent of government stock; appointees to other urgent posts; as well as essential artisans including а boat-builder, a smith and a cooper.



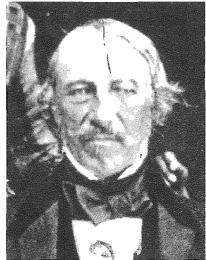
Captain Charles Howe Fremantle. *Photograph:* Courtesy Royal Western Australian Historical Society.

Only two of these, Stirling himself and John Septimus Roe, the colony's Surveyor-General for the next 40 years, had previously seen these shores. HMS *Sulphur*, bearing a detachment of troops from the 63rd (West Suffolk) Regiment, arrived six days later.

Initially the settlers lived on Garden Island and it was there the Proclamation of a Colony was announced on 18 June 1829. Stirling decided on two settlements — Perth (the seat of Government) and Fremantle (the colony's port). An official ceremony was held on 12 August, King George IV's birthday, to mark the foundation of Perth with the felling of a tree — this site is close to the present Perth Town Hall in Barrack Street.

In response to the initial favourable publicity the settlement received back in Britain, another eight immigrant ships, carrying 525 passengers, arrived before the end of 1829 and a further twenty vessels with 1,076 new settlers in the following year.

The outstanding attraction of the new colony for these people was the offer of free grants of land at a rate of 40 acres for each three pounds of capital introduced into the colony for productive purposes before the end of 1830; thereafter the allotments were halved to 20 acres. A range of capital items were acceptable for this purpose, including pensions and half-pensions, which attracted a number of ex-military and naval officers. An



John Septimus Roe Photograph: Courtesy Royal Western Australian Historical Society.

additional allotment of 200 acres was made for each 'labouring person' taken by the settler to the colony.

The attention of the earliest settlers focused initially on the fertile alluvial lands along the upper reaches of the Swan near the proposed town of Guildford. Both banks of the river were thrown open to selection on 28 August 1829.

As a matter of policy, individual river frontages were strictly controlled so that the early grants were generally extremely long and narrow. Roe's own property in the Upper Swan area was 990 yards wide and 8.3 miles long!

#### Exploration

The rapid allocation of the best land in the immediate vicinity of Perth, Fremantle and Guildford, provided a sense of urgency to the extension of the settlement. Exploring parties were sent out to find additional land suitable for cultivation. As early as November 1829, Stirling despatched Lieutenant Preston of the *Sulphur* and Alexander Collie, the colonial surgeon, in a small boat to inspect the area southwards from the Murray River to the Vasse Estuary.

In the course of the journey, which is perpetuated in the names of two rivers, the men visited Leschenault Inlet and their return sparked interest in that area. A party of settlers went there in January 1830 and applied for grants, while Stirling, with Roe and a larger group, followed this up a month later.

In May 1830 Stirling directed some new arrivals in the colony, the Molloys, Turners and Bussells, to proceed by sea as far south as Augusta, where they remained for a few years under difficult conditions before moving to settle by the Vasse River (later Busselton).

Soon after these developments a major breakthrough in inland exploration was achieved when an exploring party, under the leadership of Ensign Dale of the 63rd Regiment, discovered the extensive pasture lands of the Avon Valley east of the Darling Range. The area immediately began to attract new settlers, as well as others from the Swan District wishing to extend holdings or transfer their interests to the new location.

King George's Sound, the site of the first military outpost in Western Australia under Major Edmund Lockyer, in 1826, was reached overland by a party under the leadership of Captain Thomas Bannister in February 1831. The following month the area was transferred to Stirling's jurisdiction and its name changed from Frederickstown to Albany.

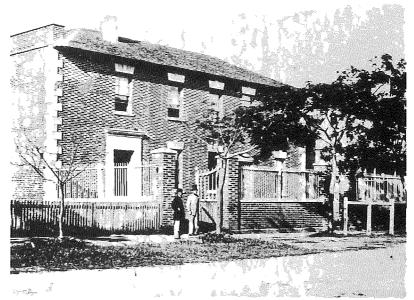
A track developed between Perth and Albany, but the introduction of a regular monthly overland mail service was delayed until October 1840. The mounted carriers followed a route which took them north to Kojonup, then to the coast at the Vasse and onward to Perth via Pinjarra — a twelve-day journey.

Beginning in 1831, the colony entered a period of exceptional difficulty which was to continue for almost two decades. Adverse reports concerning the conditions to be expected in the colony filtered back to England and the supply of immigrants dried up. Only five ships came in 1831, and one or two in each of the seven following years.

> The available labour supply was totally inadequate to work the large areas of land assigned to the earliest settlers. The productivity of the settled areas was low, due to ignorance of local climatic and agronomic conditions, leaving the colony precariously dependent on outside supplies. Potential settlers were further discouraged by a tightening of the conditions of land grants in 1830, followed in 1832 by the introduction of a pricing system for land.

> One of the most disappointed of the early arrivals was Thomas Peel. He had been among the strongest supporters of the colonisation proposals, participating in a group which advanced

Economic Difficulties an ambitious scheme for the transport of as many as 10,000 emigrants to the Swan River over a four-year period. When the other members of the syndicate withdrew, Peel (with financial backing from Solomon Levy) negotiated new terms with the Colonial Office whereby he would receive 250,000 acres of free land provided he introduced 4,000 settlers to the colony before November 1829. He received special treatment in being allowed to preselect this land before his departure from England. In the event, Peel failed by six weeks to meet the deadline, so that instead of receiving a vast area of choice land along the Swan and Canning Rivers, he obtained an inferior coastal tract extending from Cockburn Sound to the Murray River.



The original premises of the Western Australian Bank which opened its doors in 1837 on St Georges Terrace.

Photograph: Courtesy Royal Western Australian Historical Society.

Colonel Peter Latour, another large investor in the colony, never developed his 103,000 acres of land in the Harvey area. This was later sold to the Western Australian Land Company, the promoters of the ill-fated Australind settlement of the 1840s. Thomas Henty, a third potential settler on a large scale, left for the eastern colonies when he failed to obtain land of his choice.

Administratively, the colony was being placed on a sounder footing. Towards the end of 1831 Stirling received new instructions from the Colonial Office which upgraded his own post to full governor and provided funding for a permanent establishment of colonial officials. He was also empowered to establish Legislative and Executive Councils, which met for the first time in February 1832. The governor presided over both bodies, which had a common membership consisting of the Commandant of the troops; the Colonial Secretary; the Surveyor General; and the Advocate General.

One of the first decisions of the Legislative Council was that Stirling should return to England on the Sulphur to explain the perilous state of the colony directly to the Colonial Office. The governor was away on this mission from August 1832 until August 1834. He came back with a knighthood but brought no relief to the adverse circumstances facing the colony. The remaining years of his tenure were characterised by mounting disappointment on the part of the settlers, matched by Stirling's own disillusionment. His resignation in October 1837 initiated a further period of uncertainty until his departure to resume his naval career in January 1839.

Widening Stirling's immediate successors, Governor John Hutt (1839-46) and Horizons Governor Andrew Clarke (1846-47) presided over a period of continued stagnation and despondency, compounded by the early death of Governor Clarke. However, the arrival of Governor Charles Fitzgerald (1848-55) marked a turning point. Although the population still numbered less than 5,000, there was now a stronger incentive to extend the horizons of the settlement beyond the confines occupied to date.

> The primitive cultivation techniques of the day were depleting the soil reserves in agricultural areas, while higher land prices were hampering the increase in meat supplies now needed. In these circumstances new land regulations were issued enabling graziers to lease large areas of pastoral lands with pre-emptive rights for renewal or purchase. The impact of the regulations was most pronounced in the Victoria Plains and Champion Bay areas.

> In 1848 lead was discovered in the bed of the Murchison River, leading to the establishment of the first mine in the colony. The town of Geraldton (named after the governor) was proclaimed in 1849 and the whole of the area running north from the Swan and Avon districts was linked progressively into the embryonic communications network of the colony.

> Geraldton witnessed the launching of some of the colony's most gruelling expeditions in search of pasture lands, mostly to the north and east. A. C. Gregory and his brother Frank (both of the Survey Department under Roe) are renowned especially for their surveys of the Murchison and Gascoyne districts between 1848 and 1857. In 1861 Frank Gregory landed at Nickol Bay (now the site of Roebourne) to explore the head-waters of the Ashburton, Fortescue, De Grey and Oakover Rivers.

Later again, John and Alexander Forrest (also of the Survey Department) struck east from Geraldton and penetrated the continent to the new overland telegraph line from Adelaide to Darwin.

Following these explorations special land regulations were introduced for the new 'North District' enabling areas of up to 100,000 acres to be taken up on easy terms. One outcome was the development of the Nickol Bay area as the first permanent settlement in the far north, Roebourne being declared a townsite in 1867.

The Convict Era Another far-reaching development during Fitzgerald's term of office was the introduction of British convicts to the colony. This was a policy born out of of desperation (after the eastern colonies had ended the system) prompted by continuing labour shortages as free immigration fell away to negligible proportions. From the arrival of the first convict ship, the *Scindian*, in June 1850 to the last, the *Hougoumont* in January 1868, 40 such vessels reached these shores. The total intake of convicts was over 9,000, a figure which gave this element a high profile in the small Western Australian community.

Most of the prisoners were expected to become eligible soon after arrival for 'tickets-of-leave' enabling them to work virtually as free men, subject to certain reporting requirements and the condition that they could not return to Britain. To facilitate their dispersion around the State, hiring depots were established in the more important country districts where settlers had ready access to the new supply of labour.

In its later stages under Governor Hampton, the system was tightened so that prisoners with longer terms to serve were sent out from Britain and then retained under central direction for work on public projects. The *Hougoumont* included among its complement a number of Irish nationalists known as "Fenians".

In accordance with the agreement between the British and colonial authorities assisted passages were to be provided for a corresponding number of free emigrants, predominantly female in order to avoid disproportion of the sexes in the population.

Pensioner Guards and their families, travelling on the convict ships, provided a further stimulus to population growth. These guards were war veterans who were required to continue to serve for several years after their arrival with the prospect of small grants of land on completion of their assignments. The description 'pensioner' did not imply that these men were aged , since large forces were customarily held in reserve on this basis in the home country. Indeed, the Pensioners were also expected to supplement, as a military unit, the Imperial troops stationed in the colony. Lieutenant-Colonel John Bruce arrived in charge of the convicts on the *Scindian* and eventually succeeded Lieutenant-Colonel F.C. Irwin as permanent commandant of the Imperial troops — a position which entitled him to a seat on the Legislative Council and, like Irwin, he acted several times as governor.

**Imperial Forces** The British Army maintained a continuous presence in Western Australia from the arrival of H.M.S. *Sulphur* in consort with the *Parmelia* in 1829 until 1863. The usual practice was to detach for service one or two of the companies of regiments stationed in the eastern colonies. Apart from their protective duties, which extended to outposts in country areas, the troops performed a variety of other valuable functions, including exploration, surveying and engineering. Ensign Dale assisted in the initial surveys of Guildford before leading the first exploratory mission into the Avon Valley.

The colourful Lieutenant Henry William St. Pierre Bunbury of the 21st Regiment established an overland route from his post in Pinjarra to the site on Geographe Bay which Stirling named after him. Another army officer, Lieutenant G.E. Warburton later resigned his commission, married a daughter of the Government Resident at Albany where he served, and became a prominent landholder in the hinterland.

Generally speaking, the troops were highly regarded by the settlers and their departures after five years or so of service were marked by lavish social functions at places like Leeder's Hotel in St Georges Terrace. Most frequently the regiments sailed for India, where further long years of arduous duty lay ahead. The troops who came to Western Australia on the *Sulphur* in 1829 did not see England again until 1847.

As early as 1859 the British Government gave notice of this intention to discontinue stationing troops in Western Australia and suggested their replacement by local volunteers. The withdrawal was effected in March 1863, although a detachment of the 14th Regiment came from Tasmania in 1868 to allay local fears concerning the arrival of the Fenians. The Pensioner Force continued to perform the remaining military tasks until disbanded. In the meantime an Ordinance had been gazetted "To organise and establish a voluntary military force in Western Australia". Units were formed in Perth, Fremantle, Pinjarra and other centres, but many of these had relatively short lives and there was a high turnover of commandants.

Contingents of such volunteers served with the British Army during the Boer War, the only occasion when a Western Australian colonial force fought on foreign soil. Responsibility for defence then passed to the new Federal Government. Representative and Local Government The long progress of the colony towards 'responsible government' began in 1839 when Stirling's small Legislative Council, composed exclusively of ex-officio members, was expanded by Governor Hutt to include four unofficial members. The number of 'official members' was increased in 1847 through the addition of the Collector of Revenue and again in 1852 when the Comptroller of Convicts was appointed. In 1867, when public sentiment favoured a more democratic system, Governor Hampton allowed districts to elect representatives whom he then designated as unofficial members.

This arrangement was formalized in 1870 when membership of the Council was expanded to 18, two-thirds to be elected in ten electorates. Under this system, which initiated the period of Representative Government, the Council continued to include three officials (the Colonial Secretary, Attorney-General and Surveyor-General) as well as three non-official members nominated by the governor.

Further changes were made in 1874, 1882 and 1886, mainly to accommodate the expansion of settlement to the north. This led to the Council being composed of 26 members, including 4 official members, 5 nominees of the Crown and 17 elected members.

The freer atmosphere of the post-convict period also saw an evolution of the system of government at local level. In 1871, the earlier, largely unsuccessful attempts to combine Town Trusts with a central arrangement for country areas were abandoned. A Road Districts Act and a Municipal Institutions Act now provided a legal basis for local government over the next 90 years. The former act enabled the election of boards in country districts which were then empowered to undertake the construction and maintenance of roads and other public works in their areas of jurisdiction. Likewise, the Municipal Institutions Act enabled the establishment of a municipal system with elected officers in urban areas.

Development of Perth and Fremantle The development of Perth had proceeded generally in accordance with Roe's original grid plan, based on St George's Terrace, elongated in shape because of the river to the south and the low-lying lake areas to the north. The administrative heart was a central square to the east of Barrack Street, embracing government offices and military barracks. This area had been embellished during the convict era with the Town Hall (opened by Governor Weld on 1 June 1870) and across the Terrace by the new Government House commissioned by Governor Hampton. The Legislative Council met in a small building in Hay Street adjoining the Town Hall.

> Perth was proclaimed a city in 1856 and St George's Church of England was elevated to cathedral status in 1858, following the installation of Bishop Mathew Blagden Hale. Other

denominations were represented in the Trinity Congregational Church (also on the Terrace) and Wesley Church (1870) at the intersection of Hay and William Streets. A Roman Catholic Cathedral was built on Victoria Square in 1865 near the new colonial hospital on Goderich Street, as the eastern end of Murray Street was then called. Also on Goderich Street were the colony's inadequate immigration reception centre (which doubled as a poor-house) and the home of Anton Helmich, who served as Postmaster-General (1847-1887) and used a small building next to his residence as an early General Post Office.



The Pensioner Barracks, completed in 1866, situated at the top of St George's Terrace.

Photograph: Courtesy Royal Western Australian Historical Society.

By 1858 another Tudoresque monument to the convict work force had been completed on the Terrace in the shape of Perth's first secondary college known as Bishop Hale's School and later as 'The Cloisters'. The Bishop's House was opposite on an expanse of land leading down to the river and not far from the Pensioner Barracks which were occupied by the mid 1860s.

Perth, despite its busy commercial activity, was still very much a residential town, so that the Bishop's neighbours along the Terrace, which was only macadamized in 1862, included many of the colony's leading personages. Murray Street was primarily residential, while Hay and Wellington Streets were already developing as commercial centres. The Perth Gaol, constructed between 1854 and 1856 to the design of Richard Roach Jewell, the Colonial Superintendent of Works. It continued to house local felons, as distinct from British convicts, until 1887 when Fremantle Gaol opened.



Mounts Bay which disappeared when about 40 acres of the Swan River was reclaimed for a road system. This picture shows Mill Point, the Narrows and one tree point.

Photograph: Courtesy Royal Western Australian Historical Society.

One of the major tasks assigned to convicts in the colony, was the construction of the first bridge across the river at Fremantle and the upgrading of the Perth-Fremantle road. However, commercial river traffic remained important until well into the 1880s. Perth's first jetty at the foot of William Street (and one of the few projects of the original Town Trust) was supplemented by two others, at Mill and Barrack Streets, and a pier for the use of the Governor at the foot of Pier Street.

The old Commissariat Store, built to the design of Henry Reveley in 1835, remained a feature of the waterfront area. The Perth Causeway, another initiative of the Town Trust, was rebuilt by convict labour between 1864 and 1867 after the original structure had been washed away in the heavy floods of 1862.

As the capital of the colony, Perth had outstripped the growth of Fremantle, although the port town continued for many years to press its claims to priority. Fremantle was selected as the centre for the Convict Establishment and the site for the massive stone structure of the prison which dominates the city, only after the Comptroller's request for a Perth location had been rejected.

The commercial life of the port had been vibrant since the inception of the colony and an active maritime trade developed with the outports of Albany, Augusta, the Vasse and Champion Bay. In the absence of an inner harbour, jetties were constructed in Bathers Bay to service the smaller vessels and the lighters used

to carry cargo from the larger ships anchored in Gage Roads. The first section of Long Jetty was completed in 1873 and extended to 1,004 metres in 1896.

Complementing these seaward structures was another jetty in the mouth of the river to which cargo was trans-shipped for conveyance to Perth. Even the Long Jetty could not match the natural attractions of Albany. This remained the regular port of call for Royal Mail steamers from 1852 until Fremantle Harbour was able to receive its first mail carrier, the R.M.S. Ormuz on 13 August 1900.

As the nineteenth century drew to a close the colony faced the Opening the Kimberleys challenge of developing the Kimberley region. Explorations of this harsh, spectacular land had spanned a period from the first tentative foray of George Grey in 1838 to Alexander Forrest's marathon traverse from the De Grey River to Daly Waters Station in the Northern Territory in 1879.

> By 1883 the approach to exploration was becoming more sophisticated and the government mounted a large expedition, consisting mainly of staff of the Lands and Survey Department, to initiate a scientific survey and to select suitable town sites.

> Large areas of pastoral land were taken up almost immediately on a leasehold basis, but much of this land reverted to the Crown. The position stabilized only when the leases were extended to 21 years (with rentals varying according to class of land) together with the introduction of a system of rewards for the achievement of stocking rates.

> Settlers brought sheep from the south of the colony and took up leases on the lower reaches of the Fitzroy, Meda and Lennard Rivers. Shortly afterwards, cattlemen from the eastern colonies overlanded stock to the rich areas adjoining the Ord. To serve these new areas the townsites of Broome on Roebuck Bay and Derby on King Sound were declared in 1883, and Wyndham on Cambridge Gulf in 1886.

> Besides being a servicing point for the pastoral hinterland, Broome developed as the centre for the exploitation of the rich pearl-oyster beds stretching from Exmouth Gulf in the west to King Sound in the north. This industry reached the peak of its fortunes between 1886 and 1891 when the new town grew rapidly, with a population of Indonesian, Filipino, Chinese and Japanese indentured workers, giving the community a unique and colourful character which survives to this day.

Aboriginal The opening of the north of the colony brought into higher relief Population the relationships between settlers and the Aboriginal inhabitants. In practice, government policies tended to differ in their application between the north-west and Kimberley regions, where

two-thirds of the Aboriginal population are estimated to have lived around 1829, and the south-west region, which possibly contained only a quarter of the total. Certainly, the strongest and most sustained opposition to settlement was encountered as pastoralists moved northwards.

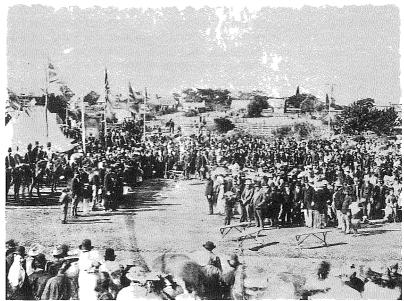
In contrast to the indigenous people in the south, the northern tribes were able to maintain some cohesion and continuity in their customs. Provision was made in the land regulations for Aborigines to continue their traditional hunting and gathering on pastoral leases, although the distinction between natural fauna and introduced animals inevitably led to conflict.

From 1872 onwards reserves were set aside for the "use and benefit" of Aborigines, but they held no tenure and such reserves should not be confused with contemporary land claims. In 1891, the first mission station in the north was established at Beagle Bay, north of Broome, leading to the development by the various sects of a network of such stations which attracted government subsidies as their emphasis shifted from evangelism to education and training.

In the southern regions, government policies toward the Aboriginal people wavered between the goals of segregation and assimilation. Governor Hutt appointed the first two "protectors of aborigines" in 1840 to avoid "involuntary causes of offences...on behalf of both the white and the Aboriginal population" and the notion of protection was to continue for a long time. In 1847, a year after Hutt's term of office expired, Bishop Salvado started Western Australia's first mission on a 20-acre site at New Norcia which was to grow to nearly one million acres, one of the largest landholdings in the colony. In north and south alike, the Colonial Office frequently assumed a mediatory role between settler and Aboriginal interests, insisting on the retention of an Aborigines Protection Board with a secure source of funding even after the granting of responsible government in 1890.

The RailwaysAfter years of discussion, the first railway between Perth and<br/>Fremantle, with an extension to Guildford, was constructed in<br/>1879. Chidlows Well, York, Northam and Beverley were then<br/>brought into the system between 1884 and 1886.

In 1886, contracts were entered into for the construction of two of the longest railways in the colony, the Great Southern linking Beverley with Albany, and the other between Guildford and Greenough Flats to join a small government line from Geraldton to Walkaway. The Great Southern was completed in 1889 and the first train ran the full length of the Midland line in 1894. Both of these lines were soon supplemented by others, one running from Perth to Bunbury with extensions to other centres further south and another from Geraldton to the new mining centre of Mullewa.



Turning the first sod for the Fremantle-Guildford Railway. It was formally opened on 1 March 1881 by Governor Robinson.

Photograph: Courtesy Royal Western Australian Historical Society.

The feverish pace of railway construction during this period gave an important stimulus to the timber industry, which was also benefiting from a growing appreciation of Western Australian hardwoods (jarrah, karri and wandoo) on export markets. Railway contractors like Millar Brothers and Edward Keane, held large timber concessions and developed their own sleeper supplies.

Between 1883 and 1892 Maurice Coleman Davies built mills in the Karridale area, facilities in the adjoining Flinders and Hamelin Bays to provide all-weather access for shipping, and established Western Australia's first 'company town' at Karridale.

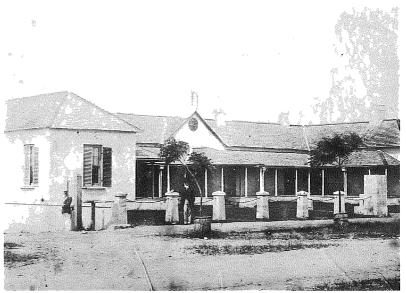
Along with other major concession holders, Davies joined a combine known as *Millars Timber and Trading Company* which was to dominate the industry for many years. Already there were signs of changing public perceptions of the dangers of environmental damage.

The first Conservator of Forests was appointed in 1895, followed by the establishment of a Forests and Woods Department. A system of permits to cut timber was introduced in combination with royalty payments which later were partly set aside for the improvement of the forest. **Responsible Government** Despite its material progress the colony had lagged behind the eastern colonies in constitutional advancement. Among the reasons for this were the relatively small population of Western Australia, the high proportion of convicts and ex-convicts, the sparse spread of the population in the northern areas and the continued Imperial maintenance expenditures, even after the annual grant from the British Government was phased out in 1856.

There was also considerable public apathy on the issue. By the 1880s, however, and especially during the governorship of Sir F. N. Broome (1883-89), the support of an influential section of society for responsible government had gathered momentum, 'responsible' in this context meaning the accountability of the executive arm of government to the legislature.

In 1887 a draft constitution bill was drawn up and despatched to London and the legislation giving it Imperial effect passed through the House of Lords in July 1889 and the House of Commons in 1890.

The honour of carrying the Constitution to Western Australia fell to Sir William Robinson who reached Albany to begin a third term as Governor in October 1890. The Governor travelled to Perth on the newly-opened Great Southern railway through a countryside lit with celebratory fires.



The first parliament under Responsible Government was held in this building in 1891 at St Georges Terrace. The site is now occupied by Council House. *Photograph:* Courtesy Royal Western Australian Historical Society.

Under the new constitution Western Australia continued to be a colony within the British Empire, matters of Imperial concern remaining the prerogative of the British Government.

A bicameral legislature was to be established with powers to make laws 'for the peace, order and good government of the colony'. The Legislative Council, consisting of 15 members, was to be wholly nominated for six years, or until the population exceeded 60,000.

The lower house, or Legislative Assembly, was based on 30 single-member constituencies. The colony was to be administered by a cabinet composed of a Premier and four other Ministers, one drawn from the Legislative Council.

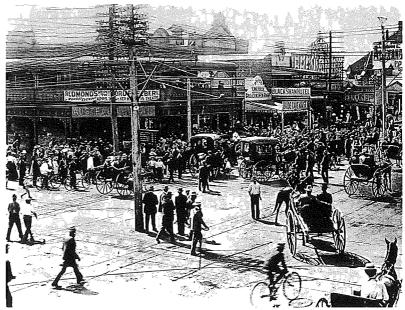
Following the first elections held in December 1890, the Governor commissioned John Forrest, the member for Bunbury, to form a ministry. Forrest was to preside over a decade of vigorous resource development linked with a public works program of unprecedented scale. The new Premier faced a turbulent period of government since a series of gold discoveries from 1885 onwards had completely transformed the outlook for Western Australia.

The Discovery<br/>of GoldThe first gold strike was made in the rugged Kimberley region by<br/>a party under the leadership of Hall and Slattery, the former<br/>giving his name to Hall's Creek. Further finds were made in the<br/>Pilbara in 1887, the Ashburton in 1890, and the Murchison in<br/>1891. These added further new towns such as Cue, Nannine and<br/>Mount Magnet to the map.

The Yilgarn goldfield centred on Southern Cross was proclaimed in 1888. From this vantage point Arthur Bayley and William Ford penetrated further into the arid interior to discover the rich Coolgardie field. The shanty town which grew on the site of their find became in turn the centre for other dramatic strikes in the surrounding parched areas.

In 1893, three Irishmen, (Paddy) Hannan, Flanagan and Shea came across the rich alluvial and reef gold at the place first known as Hannan's and later Kalgoorlie which led to the discovery of the famed resources of the Golden Mile. These discoveries triggered a huge influx of prospectors, mainly from the eastern colonies, and led to unprecedented population growth in Western Australia generally.

Coolgardie soon became a town with many amenities, only to be rapidly surpassed by Kalgoorlie. The standing of the latter was visible in its impressive public buildings rivalling those of Perth, its numerous hotels, its strident newspapers and advanced commercial facilities. Kalgoorlie, like Coolgardie before it, became a mayorality in 1895 when its vocal population occupied an area of only 65 acres. Kalgoorlie's first mayor was a New Zealander, while the first mayor of Coolgardie was a former mayor of Adelaide. In 1892 the Forrest Government decided to begin construction of the Yilgarn railway, branching off from the existing network at Northam.



The intersection of Hannan and Maritana Streets, Kalgoorlie, circa 1908. Photograph: Courtesy of the Museum of the Goldfields.

This line reached Coolgardie and then Kalgoorlie in 1896. Seven years later the water supplies of the two towns were secured with the completion of the Goldfields Water Supply Scheme, another engineering triumph for C. Y. O'Connor, the Engineer-in-Chief of the Fremantle Harbour works.

The gold rush era saw a spate of major new building projects in Perth, reflecting the city's new affluence and the urge for self-improvement which characterised the Victorian age. In 1887-88 two imposing new structures, the Anglican Cathedral and the General Post Office, (later to become the offices of the State Treasury) rose on St Georges Terrace. The Queen Victoria Public Library was opened in 1889, the Museum in 1895 and the Observatory a year later.

> In 1903 the Supreme Court moved out of its temporary facilities in the former Perth Gaol (now incorporated in the Cultural Centre complex) to a new edifice near the original in the Supreme Court Gardens and the first stage of a Parliament House was under construction on elevated ground overlooking the city in West Perth.

#### Late-Victorian Perth

Entertainment also flourished in those prosperous times. Thomas Molloy (later Lord Mayor of Perth) built the Royal Theatre in central Hay Street in 1897 and His Majesty's Theatre on the corner of Hay and King Streets in 1904. Both theatres operated in conjunction with Molloy's hotel interests.

New city markets opened in 1897. Land on Wellington Street was resumed to permit the extension of the railway station (although the most opulent of the designs was not taken up) and trams ran along the thriving shopping centre of Hay Street. Symbolising the times, the grand structure of the Royal Mint, built of Rottnest stone to the design of George Temple Poole, rose in the eastern extension of Hay Street (then known as Howick Street). It remained impervious to constitutional development until 1970 when the Union Jack was taken down and the royal prefix was substituted by the name of the city.

John Forrest was to remain Premier of Western Australia for a decade, dispensing loan funds for major public works in conformity with the central tenet of his policy. It was an era of relative political stability, especially in the earlier years when the old landed interests remained unchallenged and the party system was still in the future.

> At the second election under responsible government held in 1894, many seats remained uncontested, as at the first. The number of Assembly seats had been increased to give a voice to the new Pilbara, Murchison and Yilgarn Districts.

> The goldfields received further electoral recognition in 1896 and 1899, when the number of seats was progressively raised to 50, at which level it remained until 1965. In 1893, when the population of the colony passed the constitutional bench-mark of 60,000, the Legislative Council also became elective on the basis of seven electoral provinces, returning 21 members. Subsequently the number of provinces was increased, first to 8 and then to 10, and the number of members from 24 to 30.

> Western Australia had little time to adjust to the new system of responsible government before being carried along on the tide of federalism which was gathering strength in the rest of the continent. Delegations were sent to the various conventions held in the eastern colonies between 1891 and 1898 to draft an Australian Commonwealth Constitution. Forrest. initially ambivalent on this issue, sought better terms even after the proposed constitution had been accepted by referendum in the other colonies in 1899.

> A petition signed by more than 20,000 people requested a similar referendum in Western Australia. Sentiment was especially strong on the Eastern Goldfields and at Albany, where 'Separation for Federation' movements were launched with the aim of taking

#### Political Development and Federation

those areas out of Western Australia and into the federation. Eventually the government yielded to this pressure and a referendum on 31 July 1900 was carried with a large favourable majority for the constitution.

By this time, the Commonwealth Constitution Bill had been passed by the Imperial Parliament, with Royal Assent being given on 9 July 1900. The Constitution then became operative on New Year's Day 1901 and a Proclamation to that effect was made on the Perth Esplanade by Chief Justice Alexander Onslow who was administering the State (as it was known thereafter) pending the arrival of the new Governor, Sir Arthur Lawley. At another ceremony on the same day in Sydney's Centennial Park, the Earl of Hopetoun assumed office as the first Governor-General of the Commonwealth and his ministers were sworn in.

The new constitution provided for a bicameral legislature based on the 'Westminster System', as in the case of the State parliaments. Throughout the negotiations, the upper house, or Senate, had been looked upon as a 'States House', or custodian of state rights. Each State initially had six representatives, elected on a state-wide basis. In the House of Representatives, or 'Peoples House', the numbers of seats were related to State populations, Western Australia initially being assigned five of the total of 77 seats in single member constituencies.

The first federal election was held in March 1901 and a state election a month later. Forrest took this opportunity to switch to federal politics; he was returned unopposed for the seat of Swan and became a member of the first federal cabinet under the Prime Ministership of Sir Edmund Barton, one of the foremost federalists of New South Wales.

At State level, George Throssell succeeded Forrest as interim Premier. He was displaced at the April 1901 election by George Leake, who formed one of the short-lived governments which characterised the local political scene until the Labour Party swept to power for the first time in 1911.

The first meeting of the Federal Parliament was held at its "temporary" seat in Melbourne on 9 May 1901. Queen Victoria had passed away on the 22nd January 1901 after occupying the throne for all but eight years of the European settlement of Western Australia. It was, indeed, the end of an era.

## Chronology

- **1616** Dirk Hartog, skipper of the *Eendracht*, landed in Shark Bay area leaving behind a pewter dish recording details of his visit.
- 1621 HMS *Trail* wrecked near the Monte Bello Islands.
- 1629 The *Batavia* wrecked on the Abrolhos Islands. After Captain Pelsart left to seek help, passengers, including women and children, are murdered in a bloody mutiny led by J. Cornelisz. After Pelsart returned with help the mutineers were tried, sentenced and some were executed. Two of the mutineers were sentenced to be marooned on the mainland.
- 1656 The Vergulde Draeck wrecked after striking a reef north of Fremantle. Of the crew of 193, only 75 survived the sinking. A small party set sail and reached Batavia to obtain help. Ships, including the *De Goede Hoop* (1656) and *Waeckende Boey* (1658), despatched to locate the survivors each lost crew members during the search, but the rescue failed, with none of the remaining survivors of the *Vergulde Draeck* being located.
- 1688 William Dampier explores the North West Coast (Kimberley region).

### The Ships of the Dutch East India Company

Apart from HMS *Trail* most of the known seventeenth and eigtheenth century shipwrecks off the Western Australian coast were vessels from the Dutch East India Company which were blown off course whilst plying the route between the Cape of Good Hope and Batavia (now Djakarta, Indonesia).

Generally the ships had similar cargoes — trade goods (such as cloth, wines and earthenware), dutch guilders and various quantities of jewellry, silver and sometimes gold. For protection against attack they carried cannons.

Sailing from Holland to the East Indies was very risky — it took about seven months to a year to reach Batavia and hidden reefs or uncharted coastline made navigation in bad weather difficult. Death from disease was an even greater threat — it took the *Zuytdorp* seven months to sail from Vlissingen in Holland to the Cape of Good Hope by which time 112 of the crew of 286 had died of disease (mostly scurvy) and a further 22 were ill.

The four ships from the Dutch East India Company wrecked in this period were the *Batavia* (1629), the *Vergulde Draeck* (1656), the *Zuytdorp* (1712) and the *Zeewijk* (1727).

# History \_\_\_\_\_

| 1697      | De Vlamingh explores the Swan River.   |
|-----------|--|
| 1699      | William Dampier explores the North West Coast for a second time<br>and reports unfavourably on the land and its suitability for<br>settlement.   |
| 1712      | The <i>Zuytdorp</i> , en route from the Cape of Good Hope to Batavia with the <i>Kockenge</i> , is wrecked against the base of a cliff, 60 miles north of the Murchison River. It was not until 1927 that wreckage was discovered by a stockman from the Tamala Station. Subsequent expeditions identified the wreck as the <i>Zuytdorp</i> .  |
| 1727      | On 9 June the <i>Zeewijk</i> struck the reef skirting the western side of the Pelsart Group of Houtman's Abrolhos Island. The first survivors attempting to reach help were never seen again. The remainer eventually built a smaller ship (named <i>Sloepie</i> ) from the <i>Zeewijk's</i> wreckage and set sail for Batavia in March 1728. Only 82 of the original 212 crew members survived. |
| 1791      | George Vancouver discovers King George Sound.  |
| 1792-1826 | The French (through the explorations of d'Entrecasteaux, Baudin<br>and d'Urville) explore the southern coast of Western Australia.<br>Their activities cause the British to establish a small military<br>garrison at King George Sound (initially called Frederickstown,<br>later renamed Albany).  |
| 1827      | Captain James Stirling explores the Swan River on HMS Success.   |
| 1829      | The British Government takes formal possession of Western Australia and commences settlement of the Swan River Colony.   |
| 1830      | Generous land grants offered by the Colonial Office see the arrival of nearly 2,000 settlers by the end of the year.   |
| 1830-1831 | Captain Thomas Bannister explores the land between the Swan<br>River Colony and King George Sound and reports that large areas<br>of land are suitable for agricultural purposes.  |
| 1832      | An Executive Council comprising the Governor, the Commandant, the Colonial Secretary, the Surveyor-General and the Advocate-General meets in February for the first time.  |
| 1837      | By 1837 exploration of the Swan River Colony has seen the<br>establishment of settlements at Perth, Albany, Denmark,<br>Kelmscott, Katanning, Williams, Augusta, Busselton, Bunbury,<br>Pinjarra, York, Beverley, New Norcia, Esperance and Gingin.  |
| 1838      | Captain G. Grey discovers fertile land between Hanover Bay and<br>Prince Regent river and reports that sugar, cotton, indigo and rice<br>could be grown.   |

| 1841 | South eastern region of Western Australia is explored by E.J. Eyre during his journey from Adelaide to Albany.   |
|------|--|
| 1843 | Completion of Perth causeway links Perth to its southern suburbs.  |
| 1848 | John Septimus Roe, Surveyor-General, led an expedition from<br>Perth to Russell Range in search of new pastoral land. The first<br>official census of Western Australia is taken — there are 2,818<br>males and 1,804 females. |
| 1850 | First convicts arrive.   |
| 1854 | The second official census of the colony is taken. There are now 7,779 males and 3,964 females.  |
| 1855 | Copper is discovered at Bowes river, 25 miles north of Geraldton.  |
| 1856 | Perth proclaimed a City by Queen Victoria.   |
| 1858 | F.T. Gregory discovers large tracts of land suitable for agricultural use north of the Murchison river.  |
| 1859 | The third official census is taken — there are $9,522$ males and $5,315$ females.  |

### A Colonial Legal Eagle

Sir Archibald Paull Burt was born on 1 September 1810 at St. Christopher in the West Indies. Educated in England, he qualified in law in 1830 and was admitted to the bar in St. Christopher and Anguilla.

His rise in the legal profession began with his appointment as Notary Public in 1835. In 1848 he was appointed Attorney-General and in November 1856 he was provisionally appointed Chief Justice in St. Christopher but was disqualified by the Colonial Office who subsequently

ruled that no local barrister should be elevated to the bench.

He was appointed Civil Commissioner and Chairman of Quarter sessions in Western Australia in 1860. He arrived in the colony on 29 January 1861 and took up his duties immediately. On 18 June 1861 he was appointed Chief Justice of the new Supreme Court of Western Australia.

His work in criminal jurisdiction, constitutional and legislative matters won him wide respect in colonial communities from the West Indies to Western Australia. Sir Archibald was appointed Knight Bachelor by Queen Victoria for his services to the law and Western Australia. He died on 21 November 1879 and is buried in the East Perth cemetary.



Sir Archibald Burt Photograph: Courtesy Royal Western Australian Historical Society

| 1861 | The Perth Supreme Court is established with Mr A.P. (later Sir Archibald) Burt appointed first Chief Justice. F.T. Gregory leads an expedition to the North-West and discovers the Ashburton, Fortescue, De Grey and Oakover rivers.   |
|------|--|
| 1863 | W. Padbury and J. Wellard begin the first settlement in the De Grey district. Departure of the British Regular Army.   |
| 1864 | First shipment of wool from the North-West pastoral areas. The first of C.C. Hunt's expeditions to the Hampton Plains district (east of the present site of Kalgoorlie) .  |
| 1868 | Last convicts arrive in Fremantle. Since the beginning of transportation in 1850, some 9,668 male convicts were sent to Western Australia. Convict labour was used to build many of Perth's historic buildings including Government House, the Perth Town Hall, the Supreme Court Building and Fremantle Jail. |
| 1870 | Fourth official census is taken. The population of the colony is 24,785 (15,375 males and 9,410 females). John and Alexander Forrest lead an expedition from Perth to Adelaide by way of Kojonup, Esperance Bay and Eucla.   |
| 1871 | Perth, Fremantle, Guildford, Albany, Bunbury, Busselton, Geraldton and York proclaimed as municipalities.  |
| 1873 | Major Warburton leads a cross country expedition from Alice Springs to the De Grey River.  |
| 1874 | John and Alexander Forrest lead a successful expedition from<br>Geraldton to the overland telegraph line in Central Australia. The<br>Legislative Council is increased to 21 members of which 14 are<br>elected.   |
| 1875 | Ernest Giles crosses Western Australia from Port Augusta.  |
| 1877 | Telegraph line between Perth and Eucla opens communication with Adelaide and London.   |
| 1879 | The first government railway opens between Geraldton and<br>Northampton. Alexander Forrest leads a party that explores the<br>Kimberley district between Beagle Bay and the overland telegraph<br>line, crossing the Fitzroy and Ord Rivers.   |
| 1880 | Pastoralists take up large areas of the Kimberley District. George Shenton is elected first Mayor of Perth.  |
| 1881 | Fifth official census taken. There are now 29,708 people in the colony of which 17,062 are males and 12,646 are females.   |
| 1883 | Fremantle made a Corporation with B.C. Wood as first Mayor.  |

- 1885First discovery of a payable goldfield in the Kimberley District, by<br/>Hall and Slattery.
- 1886The Legislative Council is increased to 26 of whom 17 are elected<br/>members. Establishment of the Aborigines Protection Board.
- 1887 Discovery of gold near Southern Cross.
- 1888 Rich deposits of alluvial gold found in the Pilbara District.
- 1889The Great Southern Railway between Beverley and Albany is<br/>completed by the Western Australian Land Company.
- 1890 Responsible government is granted to the colony of Western Australia and John Forrest is commissioned to form the first ministry.
- **1891** The sixth official census is taken the population of the colony is now 49,782 people of which 29,807 are male and 19,975 are female.

Rich goldfield discovered at Coolgardie by Bayley and Ford.

### A Great Dame

Edith Dircksey Cowan, born on 2 August 1861 at Glengarry near Geraldton in Western Australia, was Australia's first female member of parliament.

Dame Edith was dedicated to social reform and a leading advocate for womens' rights. She had been prominent in social issues concerning women and children since the 1890's. In part this reflected a traumatic childhood (her natural mother had died in childbirth in 1868, and in 1876 her father was hanged for the murder of his second wife), but also her desire to improve the position of women in society. She was a leading member of various boards, guilds, committees and councils that promoted, through lobbying and public speaking, important womens' and childrens' issues, health, education and equal rights.

Dame Edith was awarded the OBE in 1920. In 1921 she was elected to the Legislative Assembly — the first woman in Australia to achieve this. In her three year term (1921-1924), she advocated the need for improved migrant welfare, infant health centres, sex education in state schools and introduced the



Dame Edith Cowan, OBE Photograph: Courtesy Western Australian Historical Society

Women's Legal Status Act in 1923, thus opening the legal profession to women. She failed to hold her seat in 1924 or regain it in 1927 but continued her life's work until she died on 9 June 1932.

It is fitting that such an outstanding woman and citizen, dedicated to the need for education to deal with important social issues and so ahead of her time in many respects, should have a major Western Australian University named in her honour.

| 1893 | Gold is discovered at Kalgoorlie by Hannan, Flanagan and Shea.<br>The South Western Railway is opened linking Perth, Bunbury and<br>Donnybrook. Legislative Council becomes elective.  |
|------|--|
| 1896 | Immigration leaps dramatically following the discovery of gold. The population of the colony increases by 88,014 in the five years since the last census in 1891 and is now 137,796 of which 91,586 are males and 46,210 are females.          |
| 1897 | Fremantle harbour is opened to shipping. The first contingent of volunteers depart for service in South Africa against the Boers.  |
| 1899 | Western Australia becomes Australia's principal gold producer.   |
| 1900 | Large majority vote in favour of federation at the referendum held on 31 July.   |
| 1901 | The Commonwealth of Australia is proclaimed on 1 January. The population of Western Australia has now reached 184,124 persons of which 112,875 are male and 71,249 are female.   |
| 1907 | A.W. Canning surveyed the stock route from Wiluna in the East<br>Murchison to Halls Creek in the Kimberley District.   |
| 1911 | The University of Western Australia is established by an Act of Parliament.  |
| 1912 | Inauguration of State Shipping Service linking northern ports to Fremantle.  |
| 1914 | Outbreak of war in Europe on 4 August. Western Australian volunteers were to see active service in Gallipoli, the Western Front (France and Belgium) and the Middle East.  |
| 1917 | Opening of the transcontinental railway, 1,051 miles in length, connecting Kalgoorlie with Port Augusta in South Australia.  |
| 1918 | War in Europe ends on 11 November.   |
| 1919 | A serious outbreak of pneumonic influenza causes 540 deaths.<br>The government creates the Discharged Soldiers Land Settlement<br>Board to administer the granting of land to returned servicemen<br>in recognition of their service overseas. |
| 1921 | Election to Legislative Assembly of Australia's first female<br>member of parliament, Mrs Edith Cowan. Major Norman Brearley<br>awarded contract for Australia's first commercial airline service<br>from Geraldton to the north of the State. |
| 1927 | Completion of rail link between Kalgoorlie and Esperance. The Duke and Duchess of York visit Perth.  |

- 1929 Western Australia celebrates its centenary. Between 1920 and 1929, 43,693 immigrants arrived under the assisted migration programme. The City of Perth is declared a Lord Mayoralty and Fremantle achieves City status.
- 1930-1934 Onset of the world economic recession following the Wall Street Stock Market crash. These were years of great hardship for many Western Australians. Average annual unemployment in this period was 19.2 per cent in 1930, 27.3 per cent in 1931, 29.5 per cent in 1932, 24.8 per cent in 1933, and 17.8 per cent in 1934. James Mitchell appointed Lieutenant-Governor, the first Western Australian born vice-regal representative.
- 1935 Tradgedy strikes the pearling fleet at Lacepede Islands as a cyclone causes the loss of 20 luggers and 142 lives. Flying Doctor service extends to Western Australia.
- 1939 Outbreak of war against Germany on 3 September.
- 1940 Severe drought occurs over the greater part of the State. Rationing of liquid fuel is introduced.
- 1941 Australia is at war with Japan following simultaneous Japanese attacks against the United States of America (Hawaii and the Philippines) and Great Britain (Hong Kong and Malaya). HMAS *Sydney* is sunk by the German raider *Kormoran* off the coast of Western Australia (west of Dirk Hartog Island) with the loss of all crew. German survivors of the action are picked up at sea north of Carnarvon at Red Bluff and 17 Mile Well.
- 1942 Japanese aircraft attack Broome, Wyndham and Port Hedland.
- 1943 Japanese aircraft attack targets in the Exmouth Gulf. Rationing of butter is introduced. Production of blue asbestos begins at Wittenoom Gorge in the West Pilbara District.
- 1944 Introduction of meat rationing. Legislation is passed establishing the Agricultural Bank as a trading bank, to be known as the Rural and Industries Bank of Western Australia.
- 1945 War in Europe and the Pacific ends. Death of Rt. Hon. John Curtin, Australian Prime Minister and M.H.R. for Fremantle. He was the first Western Australian representative to be Prime Minister and was buried in the Karrakatta cemetary.
- 1947 Fourth Commonwealth census is held. The Western Australian population now 502,480 persons, 258,076 males and 244,404 females. The year also sees the arrival in Perth of the first British migrants under the Free and Assisted Passage Agreement between the Commonwealth and United Kingdom Governments. Displaced persons arrive after Commonwealth agreement with the International Refugee Organisation to accept refugees.

| 1950 | The annual population increase of 28,465 (net gain by migration 19,295 and by natural increase 9,170) the greatest since 1896, the peak year of the "gold rush" period.   |
|------|---|
| 1952 | Crude birth rate, 25.66 per thousand of mean population is the highest since 1917.  |
| 1953 | Oil is discovered at an Exmouth Gulf drill site in December.  |
| 1954 | Fifth Commonwealth census is held and the population of Western Australia is 639,771 persons (330,358 males, 309,413 females). Exploratory oil drilling continues in the Exmouth Gulf but now extends to the Fitzroy section of the Canning Basin.  |
| 1955 | Opening in January of new harbour and large anchorage in Cockburn Sound to serve the Kwinana industrial area.   |
| 1957 | Natural increase of population, 11,627, is the highest ever<br>recorded. Completion of the first stage of the Serpentine Dam<br>Project — work begins on the main reservoir. The introduction of<br>the Salk vaccine reduces the incidence of poliomyelitis<br>dramatically. Only 3 cases were recorded compared to the annual<br>average of 164 in the nine years since 1948.                              |
| 1958 | First significant quantities of rice are produced at Camballin on<br>the Fitzroy River 65 miles south-east of Derby. Metropolitan<br>Passenger Transport Trust commences operations.  |
| 1959 | Narrows Bridge and Kwinana Freeway, linking Perth with the<br>Canning Highway at Canning Bridge opens to traffic in<br>November. Television services commence and the first regular<br>School of the Air in the State opened in September, broadcasting<br>from the Meekatharra base radio of the Royal Flying Doctor<br>Service. Tenders are called by the State Government for the export<br>of iron ore. |
| 1960 | The Australian Broadcasting Commission begins television transmission in May. The number of television viewers licences, at 31 December, are now 57,792 compared to 9,621 at the end of the previous year. In November, the Mangles' Kangaroo Paw is officially declared to be the State's floral emblem.   |
| 1961 | Sixth Commonwealth census is taken and the population is now 736,629 persons (375,452 males and 361,177 females). The Serpentine Dam is officially opened to supply water to the metropolitan area. Disastrous bush fires over a large area almost completely destroy the townships of Dwellingup and Holyoake.   |
| 1962 | The crude death rate of 7.69 per thousand of mean population is<br>the lowest ever recorded. The British Empire and Commonwealth<br>Games held at Perth from 22 November to 1 December.   |

| 1963 | Jandakot Airport, situated 15 miles south of Perth, officially<br>opened for light aircraft in June. The town of Onslow is<br>extensively damaged by a cyclone with winds reaching a velocity<br>of 144 miles per hour — the highest recorded in Australia at that<br>time.   |
|------|---|
| 1964 | Serious floods hit the south-west corner of the state causing<br>widespread disruption of rail and road services and the isolation<br>of some towns. The town of Harvey is evacuated and there is<br>extensive damage at Collie, Bunbury and Nannup.  |
| 1966 | The seventh Commonwealth Census is held and the population of<br>Western Australia is now 848,100 persons (432,569 males and<br>415,531 females). The Western Australian Institute of Technology<br>is officially opened on 17 August (subsequently to become the<br>Curtin University of Technology from 1 January 1987). In March,<br>Australia's first commercial iron ore export cargo sails from<br>Geraldton to Japan. The ore was mined at Koolanooka. |
| 1967 | Goldsworthy and Tom Price are proclaimed towns. The first train<br>conveying iron ore from Koolyanobbing to Kwinana on the<br>standard gauge is officially opened on 10 July. In September the<br>Northwest Cape Naval Communications is officially opened.   |
| 1968 | Melville is proclaimed a City. An earthquake measuring 6.9 on the Richter Scale strikes the town of Meckering at 10.58 am on 14 October. The town was badly damaged and 20 civilians injured.   |
| 1969 | The State Coat of Arms is granted by the Queen by Royal Warrant<br>on 17 March. In June the first standard gauge passenger train<br>from Port Pirie arrives at Perth terminal.  |
| 1970 | The first consignment of Kambalda nickel refined at Kwinana is<br>shipped. The minimum age for the legal purchase and<br>consumption of alcohol is lowered to 18 years. The <i>Indian Pacific</i><br>train arrives in Perth after its inaugural transcontinental journey.<br>The franchise is extended for elections to both Federal and State<br>Parliaments by lowering the minimum voting age to 18 years.   |
| 1971 | Results from the eigth Commonwealth census reveals the population to be 1,030,469 persons (529,066 males and 501,403 females) — the first census to show the Western Australian population to be in excess of one million people. The City of Stirling is proclaimed on 24 January.   |
| 1972 | Dampier is proclaimed a town on 30 June. The Ord River Dam (forming Lake Argyle) officially opens as part of the Ord River Irrigation Scheme.   |
| 1973 | In October the Numbat and the Black Swan are declared to be the official animal and bird emblems of Western Australia.  |

| 1974 | Aboriginal Affairs Planning Authority merged with the Federal Department of Aboriginal Affairs.   |
|------|---|
| 1975 | The first daylight saving referendum is held and defeated by a vote of 290,179 to 250,640.  |
| 1976 | The population of Western Australia reaches 1,144,855 persons (581,188 males and 563,667 females). Only 630,154, or 55.04 per cent of the population, was born in Western Australia.  |
| 1977 | On 19 August the most powerful earthquake recorded in Western Australia occurs in the Port Hedland region and measures 7.5 on the Richter Scale. Gosnells is proclaimed a City on 1 July.   |
| 1978 | Cyclone Alby causes widespread damage to the south of the state<br>on 4 April. In November whaling operations cease from Albany.  |
| 1979 | An earthquake measuring 6.2 on the Richter Scale is centred on<br>the small country town of Cadoux causing \$1.5 million damage.<br>On 12 July debris from the U.S. Space Station <i>Skylab</i> falls across a<br>wide portion of the southern half of the state. Canning and<br>Bunbury are proclaimed Cities. Western Australia celebrates its<br>sesquicentennial year since settlement. HRH Prince Charles,<br>Prince of Wales, undertakes the longest ever tour of Western<br>Australia by any member of the Royal Family. |
| 1980 | Much of the town of Goldsworthy is destroyed as Cyclone Amy<br>causes widespread damage in the De Grey and Fortescue<br>Districts. HM Queen Elizabeth II and the Duke of Edinburgh visit<br>Perth and Fremantle.  |
| 1981 | The population is now 1,273,624 persons (643,108 males and 630,516 females).  |
| 1982 | The official opening of the Mount Henry Bridge enables the expansion of the Kwinana Freeway across the Canning River.   |
| 1983 | <i>Australia II</i> breaks 132 years of tradition to become the first foreign yacht to win the America's Cup from the New York Yacht Club at Newport, Rhode Island, U.S.A. — the series was won 4-3. Bayswater is proclaimed a City.  |
| 1984 | The second daylight saving referendum is held and is defeated by<br>a margin of 392,340 to 329,536. Capital punishment is abolished<br>on 3 October. On 12 August the first stage of the Northwest Shelf<br>Gas Project begins piping gas to Perth.   |
| 1985 | Wanneroo and Armadale are proclaimed Cities. The Alexander<br>Library Building opens to the public and is officially opened on<br>18 June. Opening of the Burswood Casino.  |

| 1986 | The Commonwealth Census is taken and the population of Western Australia is now 1,406,929 (707,569 males and 699,360  |
|------|---|
|      | females). Pope John Paul II visits Perth on 30 November. Perth<br>International Airport is officially opened on 25 October. In<br>February Mr Ernie Bridge is appointed a Cabinet Minister, the<br>first Aboriginal to hold such an office. |

- 1987 Australia loses the America's Cup off Fremantle. The West Coast Eagles play their first game in the expanded Victorian Football League (VFL), later named the Australian Football League (AFL)) competition.
- **1988** Geraldton and Rockingham are proclaimed Cities.
- **1989** Kalgoorlie/Boulder is proclaimed a City on 24 January.
- **1990** On 12 February Dr Carmen Lawrence becomes Australia's first woman Premier. Clearance is given for mining exploration in three of the State's 60 national parks. Mining in the 57 other national parks is banned. On 19 November the Premier announces a Royal Commission into Commercial Activities of Government and Other Matters (WA Inc).
- **1991** On 31 January Perth records its hottest day on record, 45.8 degrees celsius. Japanese freighter *Sanko Harvest* sinks after hitting rocks off the coast of Esperance causing significant environmental pollution along the south coast. WA Inc Royal Commission public hearings begin on 12 March. Casuarina maximum security prison is commissioned on 7 June. The State's first private tertiary institution, Notre Dame University is inaugurated on 1 July. Greek tanker *Kirki* loses its bow and catches fire off the coast of Cervantes. Quick action by authorities prevents a major oil pollution disaster.
- 1992 West Australians again vote against daylight saving in the third referendum on the issue. The West Coast Eagles create history by winning the AFL grand final, beating Geelong 16.17 to 12.13. State Government creates four new national parks. Cabinet endorses sale of State Government Insurance Office and a 49 per cent stake in the Rural and Industries Bank. The Premier and Lord Mayor of Perth release the City Living report which details a plan to turn old buildings in Perth into stylish residential developments. Enviromental Protection Authority calls for tougher laws to make companies or people liable for pollution accidents that endanger people. Findings and recommendations of the WA Inc Royal Commission reports are presented to the Governor.

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### Chapter 2

# **ENVIRONMENT**

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### Chapter 2

### **ENVIRONMENT**

### **Physical Features**

Western Australia occupies 2,525,500 square kilometres, or nearly one third of the Australian continent. It has approximately 7,000 kilometres of coastline and extends from the Timor Sea in the north, the Indian Ocean to the west and the Southern Ocean to the south. This extensive landmass includes many distinct and unique physical features stretching from the rugged, tropical north to the cooler south of the State. The sheer size of the State and length of coastline means that a variety of climatic conditions and geographical characteristics are incorporated within its boundaries.

The Kimberley region is characterised by an immense sandstone plateau, deep gorges and savanna woodland vegetation. The wet season transforms the landscape. Nearly 75 per cent of the State's total surface and ground water supplies are located in the Kimberley.

| Physical Features   | of Western Australia   |
|---|--|
| Area:<br>2,525,500 sq km  | Land Distances:<br>North-South 2,391 km<br>East-West 1,621 km        |
| Length of Coastline:<br>approximately 7,000 km<br>Highest Point:<br>Mt Meharry<br>1,251 metres<br>Most Northerly Point:<br>Cape Londonderry<br>latitude 13° 44′ 36''<br>longitude 126° 47′ 43'' | Longest River:<br>Gascoyne River<br>865 km                           |
|   | Largest Desert:<br>Great Sandy Desert<br>258,000 sq km               |
|   | Largest Island:<br>Dirk Hartog Island<br>61,338 ha                   |
| Most Southerly Point:<br>Torbay Head<br>latitude 35° 8′ 10"<br>longitude 117° 38′ 0"  | Largest Lake:<br>Lake MacKay 3,550 sq km<br>only 2750 sq km is in WA |
| Highest Town:<br>Tom Price<br>740 metres  | Highest Waterfall:<br>King George Falls<br>approximately 80 metres   |

Environment

The Gascoyne-Pilbara region is centred on the Hamersley plateau and is fringed by a wide coastal plain and the Gibson desert. The area is known for its open flood plains, gorges, coastal mud flats and mangrove swamps and provides much of the mineral wealth of the State.

The south-west region, stretching from Geraldton to Albany is made up of coastal lowlands that consist of limestone ridges, sand dunes and sand plains, lakes, estuaries and rivers. The coast has long sandy beaches fringed with reefs, granite headlands, cliffs and bays and although there are a number of good ports, the finest natural harbour is at King George Sound, Albany. The south-west region is also the agricultural heartland of Western Australia.

The Goldfields-Esperance region is widespread. Overall the topography is relatively flat and includes salt lakes, hills, lowlands and the Nullabor Plain. The land east of Kalgoorlie up to the South Australian border is virtually uninhabited desert covered with scrub, and scattered with desert oaks and mulgas.

## Climate

# Contributed by the Western Australian Regional Office of the Bureau of Meteorology

Western Australia is a region of several different climate zones, ranging from the tropical in the north to the semi-arid interior, and the Mediterranean style climate of the south-west.

Most of the State is a plateau between 300 and 600 metres above sea level. The main influence of topography is seen in the general decrease of rainfall with increasing distance from the coast. The weather is controlled largely by the movement of the belt of high pressure systems. This belt of highs separates the south-east trade winds to the north from the westerlies to the south.

The highs are displaced northward in winter allowing the moist westerly winds to extend over southern areas. Cold fronts and associated low pressure systems embedded in the westerlies produce most of the annual rainfall for southern districts including agricultural regions during the cooler months.

Dry southeasterlies predominate further north and only cloud bands from the northwest that occasionally extend over the Pilbara, Gascoyne and interior parts of the State, produce any significant rains.

| Climatic Extremes               | of Western Australia   |
|---------------------------------|--|
| Highest Daily Rainfall Total:   | 747 mm at Whim Creek on<br>3 April 1898                              |
| Highest Monthly Rainfall Total: | 1,321.7 mm at Roebuck Plains in<br>January 1917                      |
| Highest Annual Rainfall Total:  | 2,169.4 mm at Jarrahdale Post<br>Office in 1917                      |
| Highest Number of Raindays:     | 249 days at Mt Barker (Bangalup)<br>in 1927                          |
| Highest Annual Mean Rainfall:   | 1,437 mm at Pemberton<br>(Springfields) (74 years of record)         |
| Lowest Annual Mean Rainfall:    | 157 mm at Forrest railway station<br>(36 years of record)            |
| Highest Maximum Wind Gust:      | 139 knots (259 km/hour) at<br>Mardie on 19 February 1975             |
| Highest Maximum Temperature:    | 50.7 degrees celsius recorded at<br>Eucla on 22 January 1906         |
| Lowest Minimum Temperature:     | -6.7 degrees celsius recorded at<br>Booylgoo Springs on 12 July 1969 |
| Lowest Barometer Reading:       | 905 hPa at the North Rankin<br>Platform on 22 April 1989             |
| Source: Bureau of Meteorology   |  |

As summer approaches, the highs migrate further south and most of the State is affected by easterly winds. These winds originate from the hot, dry interior producing high temperatures and low humidity levels in western areas. Near the coast, welcome relief from the hot weather comes from the reliable seabreeze in the afternoon. The seabreeze persists into the evening making for pleasant summer nights.

In the north, the monsoon develops, resulting in thunderstorm activity and the occasional tropical cyclone. Cyclones usually develop well offshore and sometimes threaten communities with strong winds, heavy rain and inundation of coastal areas by storm surge. The coastline near Port Hedland is the most susceptible area with one cyclone expected every two years. While many systems fade over ocean waters, cyclones moving inland gradually weaken into rain bearing depressions and even though floods often occur, most of the rain is welcome.

The heaviest rainfall ever recorded in one day in the State was 747 millimetres at Whim Creek from a cyclone in 1898. The highest wind gust ever recorded was 259 kilometres an hour at Mardie in 1975 due to Tropical cyclone Trixie.

That same system was responsible for major flooding further south in the Gascoyne and Goldfields. Cyclones that travel southwards off the west coast can pose a serious threat to more heavily populated communities. Extreme fire weather conditions can occur over the southwest of the State due to the strong and hot northerly winds in such events.

The hottest time in the Kimberley is in November and December before the onset of the monsoon. Further south, January and February are the hottest months. Maximum temperatures in excess of 40 degrees celsius have been recorded throughout the State except the far southwest coast. The highest temperatures ever recorded was 50.7 degrees celsius at Eucla. Coastal temperatures are greatly modified by the occurrence of the sea breeze.

During the winter months, average minimum temperatures range from above 30 degrees celsius in the Kimberley to 14 to 15 degrees celsius near the south coast. Overnight minima are coldest in southern inland areas where averages of 4 to 6 degrees celsius are experienced.

| Station       | Jan. | Feb. | Mar. | Apr. | May  | Jun. | Jul.                                       | Aug.                                       | Sept. | Oct. | Nov. | Dec. |
|---------------|------|------|------|------|------|------|--|--|-------|------|------|------|
| Broome        | 33.5 | 33.3 | 34.3 | 33.5 | 32.6 | 30.6 | 31.0                                       | 29.3                                       | 29.7  | 33.9 | 32.3 | 32.9 |
| Average       | 33.4 | 33.0 | 34.0 | 34.2 | 31.4 | 29.1 | 28.7                                       | 30.2                                       | 31.9  | 32.9 | 33.6 | 34.0 |
| Port Hedland  | 36.7 | 36.6 | 36.9 | 35.0 | 30.1 | 29.2 | 29.6                                       | 27.0                                       | 29.9  | 34.7 | 35.1 | 36.7 |
| Average       | 36.3 | 36.2 | 36.7 | 35.1 | 30.3 | 27.4 | 26.9                                       | 28.9                                       | 32.2  | 34.5 | 36.1 | 36.6 |
| Learmonth     | 35.7 | 37.4 | 35.3 | 31.6 | 26.2 | 23.8 | 25.0                                       | 24.5                                       | 26.7  | 31.3 | 33.0 | 35.5 |
| Average       | 37.9 | 37.7 | 36.4 | 33.2 | 28.4 | 24.7 | 24.0                                       | 26.0                                       | 29.3  | 32.1 | 34.2 | 36.8 |
| Carnarvon     | 31.5 | 30.0 | 29.2 | 27.6 | 24.4 | 22.2 | 23.9                                       | 21.7                                       | 22.9  | 26.0 | 27.2 | 29.4 |
| Average       | 31.2 | 32.5 | 31.3 | 28.9 | 25.9 | 23.2 | 22.0                                       | 22.7                                       | 24.3  | 25.7 | 27.2 | 29.0 |
| Geraldton     | 33.3 | 30.6 | 28.3 | 27.7 | 23.0 | 21.1 | 21.2                                       | 18.8                                       | 19.5  | 23.6 | 25.9 | 28.2 |
| Average       | 31.7 | 32.5 | 30.9 | 27.4 | 23.7 | 20.7 | 19.4                                       | 20.0                                       | 22.0  | 24.3 | 26.9 | 29.3 |
| Perth Airport | 33.5 | 29.7 | 27.2 | 25.6 | 20.5 | 19.0 | 18.8                                       | $\begin{array}{c} 17.4\\ 18.3 \end{array}$ | 18.3  | 22.3 | 24.4 | 21.9 |
| Average       | 31.4 | 31.7 | 29.5 | 25.2 | 21.4 | 18.7 | 17.6                                       |  | 20.0  | 22.3 | 25.4 | 28.5 |
| Albany        | 24.9 | 25.5 | 24.2 | 22.2 | 18.1 | 16.7 | 16.8                                       | 15.2                                       | 15.0  | 17.8 | 18.9 | 28.6 |
| Average       | 25.2 | 25.1 | 24.2 | 21.7 | 18.7 | 16.6 | 15.7                                       | 15.9                                       | 17.4  | 18.9 | 20.8 | 23.5 |
| Narrogin      | 31.4 | 28.5 | 26.2 | 22.3 | 17.4 | 15.5 | 15.8                                       | 14.5                                       | 15.3  | 20.9 | 22.9 | 23.4 |
| Average       | 30.8 | 30.0 | 27.2 | 22.5 | 18.3 | 15.3 | 14.6                                       | 15.1                                       | 17.3  | 21.2 | 24.9 | 28.9 |
| Esperance     | 25.3 | 25.9 | 25.3 | 22.3 | 19.7 | 17.6 | 18.1                                       | 16.4                                       | 16.4  | 19.8 | 20.8 | 30.2 |
| Average       | 26.2 | 26.4 | 25.2 | 23.1 | 20.3 | 17.9 | 17.1                                       | 17.7                                       | 19.4  | 21.2 | 23.0 | 24.7 |
| Kalgoorlie    | 32.7 | 31.3 | 29.0 | 22.2 | 19.1 | 16.1 | $\begin{array}{c} 18.0\\ 16.4 \end{array}$ | 16.0                                       | 17.3  | 24.6 | 26.9 | 30.2 |
| Average       | 33.6 | 32.0 | 29.7 | 25.1 | 20.5 | 17.5 |  | 18.3                                       | 22.2  | 25.6 | 28.9 | 32.0 |

TABLE 2.1 – MAXIMUM TEMPERATURES FOR SELECTED WA STATIONS,1992VERSUS LONG TERM AVERAGES (celsius)

Source: Bureau of Meteorology

The lowest temperature ever recorded was minus 6.7 degrees celsius at Booylgoo Springs in the Goldfields in 1969. Average temperature data for selected towns are presented in table 2.1 and table 2.2.

The Weather<br/>in 1992Western Australia experienced its usual wide range of weather<br/>conditions during 1992. Apart from the tropics, the remainder of<br/>the State had average to above average rainfall. In many parts of<br/>the Murchison, Goldfields, and Gascoyne, rainfall was close to all<br/>time records due mainly to high levels of thunderstorm activity.

Throughout much of 1991, and the first half of 1992, the world experienced an "El Nino" event, associated with a weak Australian monsoon and fewer tropical cyclones. Consequently rainfall over the Kimberley was very much less than normal and only one tropical cyclone affected the mainland. Tropical Cyclone Ian passed over the Monte Bellos and Barrow Islands with maximum wind gusts estimated at 250 kilometres an hour (the highest actually recorded was 206 kilometres an hour). Despite the severity of the storm, resulting damage was relatively minor.

| Station                          | Jan.  | Feb.         | Mar.  | Apr.  | May                                       | Jun.                                       | Jul.                                       | Aug.                                       | Sept.                                     | Oct.         | Nov.  | Dec.         |
|----------------------------------|---|--------------|---|---|---|--|--|--|---|--------------|---|--------------|
| Broome<br>Average                | 27.0<br>26.2                                | 27.1<br>25.9 | 27.1<br>25.4                                | 25.8<br>22.6                                | 22.1<br>18.3                              | 17.5<br>15.3                               | 14.1<br>13.7                               | 17.4<br>15.0                               | 19.3<br>18.4                              | 21.9<br>22.2 | 25.1<br>25.0                                | 26.2<br>26.4 |
| Port Hedland<br>Average          | 23.7<br>25.4                                | 24.9<br>25.3 | 24.8<br>24.4                                | 23.7<br>21.1                                | 20.0<br>17.1                              | 17.1<br>13.9                               | 13.6<br>12.0                               | $\begin{array}{c} 14.8\\ 13.0 \end{array}$ | 15.2<br>15.2                              | 17.3<br>18.0 | 19.9<br>21.1                                | 22.0<br>23.7 |
| Learmonth<br>Average             | 21.9<br>23.0                                | 22.7<br>24.3 | 22.4<br>23.1                                | 20.3<br>20.6                                | 16.7<br>16.1                              | 15.2<br>13.4                               | $\begin{array}{c} 11.8\\ 11.4 \end{array}$ | 11.7<br>12.5                               | $\begin{array}{c} 13.0\\ 14.0\end{array}$ | 14.9<br>16.2 | 17.6<br>18.4                                | 19.2<br>20.6 |
| Carnarvon<br>Average             | 22.3<br>22.4                                | 22.7<br>23.3 | 21.2<br>22.0                                | 19.9<br>19.1                                | $\begin{array}{c} 14.3\\ 14.8\end{array}$ | $\begin{array}{c} 14.2\\ 12.4 \end{array}$ | $\begin{array}{c} 11.0\\ 11.1 \end{array}$ | $\begin{array}{c} 11.9\\ 11.6 \end{array}$ | 13.2<br>13.9                              | 15.5<br>16.3 | 18.0<br>18.5                                | 20.0<br>20.6 |
| Geraldton<br>Average             | 18.6<br>18.3                                | 19.4<br>19.1 | 18.1<br>17.9                                | $\begin{array}{c} 17.1 \\ 15.4 \end{array}$ | 11.9<br>12.7                              | 12.7<br>10.9                               | 11.3<br>9.3                                | 9.9<br>8.9                                 | 9.2<br>9.2                                | 10.2<br>10.9 | 13.6<br>13.7                                | 15.6<br>16.2 |
| Perth <b>A</b> irport<br>Average | 19.2<br>16.7                                | 18.0<br>17.4 | 17.2<br>15.7                                | 15.1<br>12.7                                | 10.5<br>10.3                              | $\begin{array}{c} 10.4\\ 9.0\end{array}$   | 9.9<br>8.0                                 | 8.8<br>7.9                                 | 8.5<br>8.7                                | 10.5<br>10.0 | $\begin{array}{c} 13.4\\ 12.4 \end{array}$  | 15.2<br>14.6 |
| Albany<br>Average                | $\begin{array}{c} 14.0\\ 13.5 \end{array}$  | 15.0<br>14.3 | 13.8<br>13.3                                | 11.6<br>11.6                                | 9.7<br>9.7                                | 8.7<br>8.1                                 | 8.5<br>7.5                                 | $7.4 \\ 7.4$                               | 7.4<br>7.9                                | 9.5<br>9.1   | 10.3<br>10.6                                | 11.7<br>12.3 |
| Narrogin<br>Average              | $\begin{array}{c} 14.6\\ 14.6\end{array}$   | 15.9<br>14.9 | $\begin{array}{c} 14.1 \\ 13.6 \end{array}$ | 11.9<br>10.9                                | 8.3<br>8.2                                | 6.7<br>7.1                                 | 6.9<br>5.8                                 | 5.8<br>5.6                                 | 6.5<br>6.3                                | 8.2<br>8.2   | $\begin{array}{c} 10.1 \\ 10.6 \end{array}$ | 12.5<br>12.9 |
| Esperance<br>Average             | 15.0<br>15.5                                | 16.6<br>15.9 | $\begin{array}{c} 17.0\\ 14.9 \end{array}$  | 13.8<br>13.1                                | 11.0<br>10.8                              | 9.3<br>9.0                                 | 8.8<br>8.2                                 | 8.0<br>8.5                                 | 8.8<br>9.4                                | 10.8<br>10.7 | 11.4<br>12.7                                | 13.1<br>14.4 |
| Kalgoorlie<br>Average            | $\begin{array}{c} 18.1 \\ 18.1 \end{array}$ | 18.7<br>17.7 | 18.3<br>16.0                                | 13.7<br>12.4                                | $\begin{array}{c} 8.7\\ 8.4\end{array}$   | 7.4<br>6.2                                 | 5.3<br>4.8                                 | $5.1 \\ 5.4$                               | 6.3<br>7.8                                | 10.9<br>10.9 | 12.0<br>13.9                                | 15.4<br>16.6 |

 TABLE 2.2 – MINIMUM TEMPERATURES FOR SELECTED WA STATIONS,

 1992 VERSUS LONG TERM AVERAGES (celsius)

Source: Bureau of Meteorology

This was due to a combination of 'Ian' passing over largely unpopulated areas, accurate warnings, and effective precautions.

On 8 February a severe storm hit Perth. Parts of Glendalough were devasted by hail and strong winds in the early morning. Further rain throughout the day and night caused flooding in many areas. Daily rainfall records were broken, with the highest rainfall occurring at Medina where 231 millimetres was registered.

Throughout the Murchison, Goldfields, and Gascoyne, many severe thunderstorms producing destructive winds, hail, flash flooding, and/or dust occurred. Following the storms over the Christmas period in 1991, further storms struck Meekatharra and Wittenoom on 5 January. During March and April, severe storms frequently occurred. Although much damage was reported, the associated rainfall ensured plentiful water supplies for the remainder of the year.

During May and June, tropical rain bands extended over the State. Exmouth and Onslow registered well above average rainfall, with flooding cutting road links on several occassions. Perth was affected by several storms, including a dust storm on 10 June, when dust from the northeast blanketed the metropolitan area.

In agricultural regions, the unusual summer rain caused high soil moisture levels for planting but starting rains were delayed until mid-June. Despite a dry July, rainfall was generally above average for the remainder of the growing season.

| Station       | 1989 | 1990 | 1991 | 1992 | Mean |
|---------------|------|------|------|------|------|
| <br>Kununurra | 753  | 451  | 604  | 410  | 738  |
| Halls Creek   | 205  | 497  | 811  | 217  | 811  |
| Broome        | 309  | 195  | 766  | 132  | 567  |
| Port Hedland  | 568  | 97   | 213  | 119  | 304  |
| Learmonth     | 142  | 267  | 210  | 256  | 270  |
| Carnarvon     | 160  | 204  | 251  | 371  | 230  |
| Meekatharra   | 328  | 209  | 115  | 377  | 220  |
| Geraldton     | 427  | 429  | 495  | 444  | 470  |
| Perth Airport | 668  | 705  | 903  | 960  | 802  |
| Albany        | 961  | 908  | 760  | 931  | 806  |
| Merredin      | 284  | 355  | 309  | 462  | 326  |
| Narrogin      | 443  | 556  | 508  | 580  | 505  |
| Katanning     | 462  | 440  | 502  | 578  | 482  |
| Esperance     | 773  | 568  | 466  | 824  | 620  |
| Kalgoorlie    | 180  | 300  | 168  | 529  | 256  |

#### TABLE 2.3 – RAINFALL FOR SELECTED WA STATIONS: 1989-92 (Millimetres)

Source: Bureau of Meteorology

### The Greenhouse Effect

The earth's climate has always changed gradually in response to fluctuations in the earth's orbit, continental drift, and atmospheric composition. Fauna and flora in Western Australia have adapted to the slow drying over many thousands of years.

In the past, natural variations in the concentration of gases have been related to climatic changes. Certain gases in the atmosphere 'trap' heat and keep the earth around 33 degrees celsius warmer than it would be otherwise, which makes it habitable. This is known as the *greenhouse effect*. The main *greenhouse gases* are *water vapour*, *carbon dioxide*, *methane*, and *nitrous oxide*.

Since the industrial revolution, it has been observed that the concentrations of many of these greenhouse gases in the atmosphere have increased. This has been attributed to activities such as the burning of fossil fuels for both domestic and industial purposes. As well, a new group of compounds, the *chlorofluorocarbons* (CFCs), have become important. These are predominately the product of human activities. It has been predicted that changes equivalent to doubling the concentration of carbon dioxide will result in global temperature increases of between 1.5 and 4.5 degrees celsius. Sea levels are expected to rise mainly due to thermal expansion of the oceans. Changes in regional climates are difficult to predict and further research is required for more accurate predictions. However, there is some evidence that suggests Western Australia may experience an increase in the frequency of heavy rainfall events especially in summer and an increase in rainfall intensity. It is important that the State should be prepared for possible climate changes next century.

Meanwhile, efforts are being made to reduce greenhouse gas emissions. Australia contributes about two per cent of global greenhouse gas emissions. Western Australia emits approximately 10 per cent of the nation's total. Most of the state's emissions originate from agricultural systems, transport, electricity generation, and industrial processing. The State Government has endorsed in principle the Commonwealth Government's plan to reduce Australia's greenhouse gas emissions by 2005 to 20 percent below the 1988 emission level.

#### The Ozone Layer

Ozone is one of the trace gases in the atmosphere, and makes up only about one part per three million. It is mainly located in the *stratosphere* between about 15 and 30 kilometres above the earth's surface, the so-called *ozone layer*. This ozone layer absorbs 90 per cent of *ultraviolet* (UV) radiation from the sun. As UV has been linked to the formation of skin cancer, genetic damage, and other biological effects, the maintenance of the ozone layer is vitally important to all life forms.

The delicate balance of ozone is threatened by the release of man-made *chlorofluorcarbons* (CFCs) into the atmosphere. CFCs are broken down by UV radiation and the resultant free *chlorine* atoms then destroy the ozone. CFCs are used by modern society for items such as *refrigerants* and *spray can propellants*.

A decrease in the ozone concentration over Antartica each spring has been observed over the last decade, with up to about 60 per cent loss in ozone. This phenomenon is commonly known as the ozone 'hole'. Preliminary figures during spring 1992 once again indicate very low levels of ozone over Antartica.

Australia plays a leading international role in the areas of ozone monitoring and research. The Bureau of Meteorology operates a network of ozone monitoring stations providing data that, combined with satellite information, enable accurate ozone information to be gathered. For example, the Dobson spectrophotometer at Perth Airport is one of about 80 such instruments world-wide used to measure total ozone. The Bureau also assists countries in south-east Asia and the south-west Pacific regions in the areas of instrument calibration, and training.

Australia has passed the Ozone Protection Act, which implements international resolutions, and controls selected end uses of CFCs. These efforts are vital to reducing the amount of ozone depletion in the stratosphere.

Source: The Bureau of Meteorology

Spring was late arriving in the south of the State. People flocked to the Stirling Ranges in early October to see the rare sight of wildfowers under a heavy cover of snow that fell as far north as Narrogin. Average maximum temperatures for the first six weeks of spring were very low throughout the south-west.

Another cold snap in mid November brought snow and record low temperatures to southern areas. Hail storms seriously affected crops close to harvest, stonefruits, and grapes.

More typical weather conditions returned to the State in December as warmer and drier conditions became established over the southern half, and seasonal hot and thundery weather began in the far north.

The Bureau of<br/>MeteorologyThe Bureau of Meteorology is the authority responsible for<br/>providing valued weather services to the community. It provides<br/>a range of services including; public and aviation weather<br/>forecasting, severe weather warnings, climate, hydrology, special<br/>forecasts and consultative services. Industries particularly weather<br/>affected include aviation, agriculture, and construction.

In the twelve months ending 30 June 1992, 1,965 warnings were issued alerting the public to the occurence of tropical cyclones, extreme fire danger, severe thunderstorms, flooding, land and ocean gales, strong winds and gales for coastal waters and dangerous weather conditions for sheep. Such warnings are vital for planning and minimising personal injury and damage to property and livestock.

Of the 162 people employed by the Bureau about 90 work in the observations program. There are 13 observing offices spread around the State where weather observations, including upper wind and temperature balloon flights are made. Inspection visits were made to 291 of the 1,200 non-Bureau staffed observing sites in Western Australia to check and repair equipment on site and to educate and improve observing practices where necessary.

Advances in technology and the installation of automatic weather stations, especially in remote areas, has improved the accuracy of weather forecasts and warnings. Sophisticated computer models, stimulating atmospheric conditions, combined with satellite imagery, radar information and rapid communication links, are providing forecasters of the 1990s with a huge amount of information to assist decision making.

### Flora

# Contributed by the Department of Conservation and Land Management (CALM)

Western Australia's flora enjoys world renown for its richness, uniqueness and colourful displays. There are estimated to be more than 10,000 species unique to Western Australia, and just under 8,000 of these have been recorded. Some 80 per cent of the known plants in the south-west are found nowhere else in the world, and about 2,000 species are either rare, endangered, vulnerable or geographically restricted.

According to a recent assessment, of the Australian total of rare or threatened plant taxa (species, subspecies or varieties) Western Australia has 43 per cent (1,442) with 83 per cent being restricted to the south-west. About 1,500 species are grown commercially for the wildflower, seed nursery, beekeeping and timber industries.

Threats to Western Australia's flora typically come from a wide range of often interrelated events. These include continued clearing of land, invasive weeds, grazing, pests and disease, inappropriate fire regimes, recreation pressures, roadworks and urban development. Studies on the geographical distribution and biology of rare or threatened species show that their vulnerability has been due mostly to the activities of European settlement. Sometimes, rarity is due to specific habitat requirements.

The distribution of plant species across Western Australia is uneven. Geologically, this region has been isolated from eastern Australia for about 30 million years. The flora has undergone immense evolutionary change in a short geological period, and the level of richness in the area is equivalent to that of tropical rainforest areas, such as the Philippines Archipelago or Malaysia, especially in the heathlands and shrublands.

**Flora Conservation** Adequate conservation of flora involves protecting all levels of diversity and, therefore, keeping combinations of landscape, communities and species. This can be achieved in a well designed and integrated reserve network combined with sensitive management of land outside reserves.

Conservation of whole plant communities also helps conserve most of the fauna associated with that community (for example, pollinators and herbivores). If flora conservation aims only to protect individual species the complementary benefits to fauna conservation will not be achieved (and vice versa). Environment

Only limited information is available on the proportion of species and the samples of plant communities that are in conservation reserves. In the Perth region approximately 8 per cent of the species of the region have not been located in existing reserves. About 70 per cent of rare flora populations occur outside the reserves network.

- *Flora Conservation Outside Reserves* Many areas of land outside the formal system of conservation reserves can make a substantial contribution to nature conservation. These include Crown reserves that are managed for other purposes (for example, water, timber, or road or rail reserves), unmanaged reserves (for example, stock routes, undeveloped townsites, or ancillary reserves), the pastoral country, farm remnants, aboriginal lands, and other undeveloped private land (for example, urban bush areas).
- *Flora Research* Knowing how many species exist and understanding their distribution, abundance and survival requirements is basic to other research into flora and fauna conservation. It is estimated that 30 to 40 per cent of the State's vascular plant species are yet to be scientifically described and named.

The Western Australian Herbarium is documenting its 500,000 plant collection to provide the State's first complete inventory of its plant species. As well as clarifying names, the geographic location of individual collections is being recorded to enable distribution data for each species and variant to be retrieved. When completed, the information will enable biologists to focus on the plant species and the geographic areas of the State in most need of further research.

| Category  |   | Area (ha)   |
|---|---|---|
| National Parks<br>Conservation Parks<br>Nature Reserves<br>State forest |   | 4,891,448<br>25,685<br>10,756,774<br>1,747,558    |
| Marine Conservation Reserves:   | Marine Parks<br>Marine Nature Reserves  | 1,012,358<br>132,000                              |
| Other:  | Conservation/Recreation<br>Timber Reserves<br>Pastoral leases<br>Freehold land<br>Miscellaneous | 189,512<br>141,933<br>879,720<br>32,531<br>82,521 |
| Total   |   | 19,892,040  |

| TABLE 2.4 – LANDS | AND | WATER   | MANAGED | BΥ | CALM |
|-------------------|-----|---------|---------|----|------|
|                   | JUI | NE 1992 |         |    |      |

Source: CALM

The flora collection represents a small sample of the State's entire flora. Most specimens are of vascular plants as very little is known about the non-vascular plant groups.

CALM, through its Flora Conservation Research Program, is actively researching the State's threatened flora. Its major efforts include surveying, assessing the conservation status and providing management guidelines for rare and threatened flora, and providing life history, genetic and ecological data on the most endangered species.

Currently, wildlife management programs for rare and threatened flora have been prepared, or are nearly completed, for the Merredin District and the Swan Region. Similar area based programs are underway for the Albany, Esperance, Katanning, Narrogin and Moora districts. Within the next five years completed wildlife management programs for rare and threatened flora will probably cover most of the species rich South West Botanical Province.

| National Park             | Area (ha) | National Park        | Area (ha)     |
|---------------------------|-----------|----------------------|---------------|
| Alexander Morrison        | 8,501     | Mt Augustus          | 9,169         |
| Avon Valley               | 4,367     | Mt Frankland         | 30,830        |
| Badgingarra               | 13,121    | Mt Lesueur           | 26,987        |
| Beedelup                  | 1,726     | Nambung              | 18,319        |
| Boorabbin                 | 26,000    | Neerabup             | 1,069         |
| Brockman                  | 49        | Peak Charles         | 39,959        |
| Cape Arid                 | 279,415   | Porongurup           | 2,511         |
| Cape Le Grand             | 31,578    | Purnululu (Bungle Bu | ngle) 208,723 |
| Cape Range                | 50,581    | Rudall River         | 1,569,459     |
| Collier Range             | 277,841   | Scott                | 3,273         |
| D'Entrecasteaux           | 58,789    | Serpentine           | 4,363         |
| Drovers Cave              | 2,681     | Shannon              | 52,598        |
| Drysdale River            | 448,264   | Sir James Mitchell   | 497           |
| Eucla                     | 3,342     | Stirling Range       | 115,661       |
| Fitzgerald River          | 329,039   | Stokes               | 9,743         |
| Frank Hann                | 61,420    | Tathra               | 4,322         |
| Geikie Gorge              | 3,136     | Torndirrup           | 3,936         |
| Goongarrie                | 60,356    | Tuart Forest         | 1,785         |
| Gooseberry Hill           | 33        | Tunnel Creek         | 91            |
| Greenmount                | 58        | Walpole Nornalup     | 15,861        |
| Hassell                   | 1,265     | Walyunga             | 1,812         |
| Hidden Valley             | 2,068     | Warren               | 2,982         |
| John Forrest              | 1,508     | Watheroo             | 44,474        |
| Kalamunda                 | 375       | Waychinicup          | 3,983         |
| Kalbarri                  | 186,050   | West Cape Howe       | 3,517         |
| Karijini (Hamersely Range |           | William Bay          | 1,738         |
| Leeuwin-Naturaliste       | 18,966    | Windjana Gorge       | 2,134         |
| Lesmurdie Falls           | 56        | Wolf Creek Crater    | 1,460         |
| Millstream-Chichester     | 199,736   | Yalgorup             | 12,889        |
| Moore River               | 17,453    | Yanchep              | 2,842         |
|                           |           | Total                | 4,891,358     |

| TABLE 2.5 – NATIONAL PARKS | S IN WESTERN AUSTRALIA |
|----------------------------|------------------------|
| 1992                       |                        |

Source: CALM

### Conservation

Contributed by the Department of Conservation and Land Management (CALM)

Conservation Conservation reserves are areas of land and water set aside to protect nature and natural resources to ensure that natural diversity is maintained. Reservation is the best, although not the only, method to conserve ecosystems. Most indigenous species cannot survive outside either intact or near intact ecosystems.

Western Australia has a system of conservation reserves comprising over 1,100 nature reserves, 60 national parks and seven marine conservation reserves (see table 2.4). The State's first conservation parks, totalling almost 26,000 hectares, were declared in June 1992 for the purposes of nature conservation and recreation.

The Government has also acquired over 400,000 hectares of land covered by pastoral lease in the Kimberley to create new national parks in the King Leopold Ranges and Walcott Inlet, and conservation parks in the Oscar and Napier Ranges as well as to add to existing reserves in the region. The Peron pastoral lease in Shark Bay has also been acquired and the northern portion has been proposed to become a national park. A new national park is also proposed over the Kennedy Ranges, east of Carnarvon.

State forest covering 1.75 million hectares supports timber and water production, public recreation, nature conservation and other uses. Although State forests are not considered as conservation reserves, they are nevertheless an integral part of the conservation system as they are near intact ecosystems.

Nature Reserves Nature Reserves are areas set aside for wildlife conservation, scientific study and the preservation of sites of scientific interest. Wildlife values are not to be exploited and public access is generally restricted in these areas.

Western Australia's 1,100 nature reserves presently cover over 10.5 million hectares of the State, about 4.1 per cent of the total area. Some nature reserves, like those found in the arid regions, are very large, but the majority, especially those found in the south-west of the State, are small, isolated and have been modified since European settlement.

Even the smallest reserves, however, play an important role in retaining examples of native habitat that existed before the original landforms and vegetation were fragmented, and in providing habitats and corridors between reserves for fauna.

- National Parks Western Australia's sixty national parks cover about 4.89 million hectares, or about 1.9 per cent of the area of the State (see Table 2.5). They range in size from 33 hectares (Gooseberry Hill National Park) to more than 1.5 million hectares (Rudall River National Park). Most of the land now set aside as national park had been reserved for other conservation purposes or had been held as vacant Crown land. Some private properties and pastoral lands, such as those that now comprise the Millstream-Chichester National Park, were acquired by the State to recognise their outstanding natural attractions and to arrest and repair the detrimental effects of decades of grazing.
- Marine ConservationSince 1987, six marine parks and one marine nature reserve have<br/>been established in Western Australia. The marine parks Shark<br/>Bay, Ningaloo, Marmion, Rowley Shoals, Swan Estuary and<br/>Shoalwater Islands cover an area of more than one million<br/>hectares. The Hamelin Pool Marine Nature Reserve in Shark Bay<br/>supports biological systems of scientific value and encompasses<br/>an area of 132,000 hectares (see Table 2.6).

| Reserves                        |   | Area (ha)   |
|---------------------------------|---|---|
| Marine Parks                    | Ningaloo<br>Marmion<br>Rowley Shoals<br>Swan Estuary<br>Shoalwater Islands<br>Shark Bay | 224,000<br>9,350<br>23,388<br>340<br>6,545<br>748,735 |
| Marine Nature Reserves<br>Total | Hamelin Pool  | 132,000<br><b>1,144,358</b>                           |

#### TABLE 2.6 – MARINE CONSERVATION RESERVES June 1992

Source: CALM

Collectively, this system of marine conservation reserves forms an important part of Western Australia's conservation estate, but it is not yet sufficiently extensive to represent the State's biodiversity given the extent of the coastline.

Imperfect knowledge of marine ecosystems is also a challenge to management. There is insufficient basic knowledge of the viability of these ecosytems and their response to either natural or human induced change. The disturbance to corals in Ningaloo Marine Park by the gastropod mollusc, *Drupella*, demonstrates this.

**Conservation Parks** Legislation was passed by State Parliament in 1991 to create the reserve category 'conservation park'. A number of conservation parks have been gazetted including the Monte Bello Islands in July 1992.

Conservation parks are managed in a similar manner to national parks. The difference is that these areas do not have national or international significance, are relatively small in size, or have landscape or biota that has been affected by past land use. Further areas proposed to become conservation parks include parts of jarrah and wandoo forests in the State's south-west.

### Fauna

Contributed by the Department of Conservation and Land Management (CALM)

Mammals In Western Australia 141 native mammal species are found. Two species of marine mammal, the Australian Sea-lion and the New Zealand Fur-seal, are found on our coastline and are included in this number. In addition the Leopard Seal, 19 species of whales, 16 species of dolphin and the Dugong have been recorded in Western Australian waters. Two mammal families, the Numbat and the Honey Possum are found only in Western Australia.

Status

Terrestrial Mammals Western Australia's native mammal numbers have declined markedly since European settlement. Eleven species have become extinct and another 30 are considered threatened. Research has shown that these mammals are predominantly non-flying and medium sized, weigh between 35 grams and 5,500 grams and are termed 'Critical Weight Range' mammals. Extinctions and declines have occurred mainly in the arid and semi-arid parts of the State. Marsupials and rodents have been most affected with 38 species listed as rare or likely to become extinct.

The timing of the decline is difficult to determine. However, available information suggests that mammals, particularly rodents and some of the wheatbelt marsupials, began to decline in the late nineteenth century, while the arid and semi-arid species persisted until the 1930s and 1950s.

Following European settlement, declines occurred when grazing stock and rabbits were introduced, large areas of land were cleared for agriculture, and predators, particularly foxes and cats, were introduced. In arid and semi-arid areas, where native ground dwelling mammals were adapted to the harsh conditions, the introduced species and changes in fire regimes had a devastating effect. Very few native species have benefited from the changes brought by European settlement. Red Kangaroos are one exception; their numbers appear to have increased in some parts of the pastoral districts because of the increased availability of water.

| Marine<br>Mammals      | The New Zealand Fur-seal ( <i>Arctocephalus forsteri</i> ) and the Australian Sea-lion ( <i>Neophoca cinerea</i> ) breed in Western Australia and were heavily exploited by sealers when the State was being developed. While it was feared for many years the populations had drastically declined, it was not until 1990 that the first thorough census of these species was undertaken in Western Australia. Surveys during 1990 and 1991 recorded about 3,100 Australian Sea-lions and 5,700 New Zealand Fur-seals around the Western Australian coast. New Zealand Fur-seals breed on 16 islands while Australian Sea-lions breed on 20 islands off the south coast, three islands in Jurien Bay and the Abrolhos Islands. |
|------------------------|---|
|                        | The two main whale species found along the Western Australian coast are the Humpback Whale ( <i>Megaptera novaeangliae</i> ) and the Southern Right Whale ( <i>Eubalena australis</i> ).  |
|                        | Southern Right Whales were so heavily exploited in Western Australia's southern waters between the 1830s and 1860s that the population almost became extinct. The first reported sighting this century was in 1955, involving a single cow and calf. An ongoing monitoring program from 1976 has shown the population to be steadily recovering with 91 individuals sighted in 1985.  |
|                        | Humpback Whales were hunted off Western Australia between 1912 to 1963, with at least 30,000 taken between 1934 and 1963. It has been estimated that the population when whaling ceased in 1963 was down from a pre-harvest level of 15,000 to about 800. Western Australian Humpback Whale numbers have increased significantly since whaling ceased and current estimates show the population to be about 3,000. Sperm Whales were also hunted off Western Australia until 1978.  |
| Conservation           |   |
| Terrestrial<br>Mammals | Mammal conservation depends on significant suitable habitat<br>areas being maintained and control of introduced competitors or<br>predators. Important terrestrial reserves for mammals<br>conservation currently include Bernier, Dorre and Barrow Islands,<br>Perup, Tutanning, Boyagin and Prince Regent Nature Reserves,<br>Drysdale River and Fitzgerald River National Parks and Dryandra<br>State Forest. It is critical that species requirements are researched<br>so that habitat areas can be managed appropriately.   |
|                        | Recovery plans are being written for threatened species to specify<br>actions to ensure the survival of each species, using habitat<br>management strategies determined by prior research.  |
|                        | Habitat management strategies include special fire regimes and<br>guidelines to harvest timber, to manage public use of strategic<br>areas, and to create vegetated corridors to link isolated habitats.<br>For instance, research in the southern jarrah forest has shown that<br>the dense thickets required by Tammar Wallabies for protection<br>from fox predation thin out after long periods without fire.   |

### Environment

Prescribed burning is now used in certain areas to regenerate those thickets as their value to Tammars declines.

Marine Marine mammals have not suffered the same declines as the land Mammals Mammals and Sea-lion, New Zealand Fur-seal, Humpback Whale, Sperm Whale and Southern Right Whale have been considerably reduced by hunting. In 1980 the Commonwealth Government passed the Whale Protection Act banning whaling in Australian waters. Populations are recovering following the ban on hunting, and these mammals are also protected under the Western Australian Wildlife Conservation Act.

Birds About 510 bird species are found in Western Australia including 380 breeding species and 130 non-breeding migratory or visiting species. Fourteen bird species are endemic to the State. These are Carnaby's and Baudin's Black-cockatoo, Western Long-billed Corella, Red-caped Parrot, Western Rosella, Noisy Scrub-bird, White-breasted Robin, Red-winged Fairy-wren, Black Grass-wren, Western Bristlebird, Dusky Flyeater, Western Thornbill, Western Spinebill and Red-eared Firetail.

> Of these, the Grass-wren occurs only in the Kimberley, and the Dusky Flyeater in Kimberley, Pilbara and Gascoyne regions, while the remainder are restricted to the south-west of the State.

Status Currently 36 bird species or subspecies are declared threatened under the Wildlife Conservation Act and a further seven species are declared in need of special protection. Of Western Australia's 14 endemic species, four — the Noisy Scrub-bird, Baudin's Black-cockatoo, Carnaby's Black-cockatoo and the Western Bristlebird — are gazetted as threatened or in need of special protection. Some of Western Australia's bird species, such as the Grey Falcon and Red Goshawk, may have always been rare while numbers of other birds, like the Noisy Scrub-bird and the Gouldian Finch, are known to have declined dramatically since European settlement.

> A few species including the Magpie, Galah, Silver Gull, Crested Pigeon, Welcome Swallow, Australian Shelduck, Maned Duck and Pink-eared Duck have expanded in range and/or numbers since European settlement. These species have been favoured by changes to food systems and habitats brought about by European settlement, for example widespread cultivation of cereal crops and large open-pit refuse disposal.

> Many other species have declined in range or numbers over the last 150 years, with the major declines occurring in the last 50 years or so.

The Freckled Duck appears to be declining in numbers in the south-west. Waterfowl surveys over the past five years shown the

number of Freckled Ducks counted declined from 151 birds in the 1986 survey to no birds counted in 1991. The actual number of Freckled Duck in the south-west may now be no more than 50 birds. The cause and significance of this decline are uncertain. In the past when the numbers of Freckled Duck declined the population was replenished by migration from other parts of its range.

*Conservation* To conserve bird species in the wild requires protection of their habitat (particularly breeding habitat) and protection from exotic predators. CALM gives a high priority in the State's conservation reserve system to the inclusion of prime bird habitat areas such as large wetlands. Major reserves important in this way include the Fitzgerald River National Park and the Prince Regent River Nature Reserve.

Australia is a signatory to the Ramsar Convention to protect waterfowl habitat. The convention encourages countries to establish reserves on wetlands and to work towards increasing waterfowl population. Nine areas in Western Australia have been listed under this convention as wetlands of international importance.

The listed areas are: the Ord River Floodplain, Lakes Argyle and Kununurra, Roebuck Bay, Eighty Mile Beach, Forrestdale and Thompsons Lakes, Peel Yalgorup System, Lake Toolibin, Vasse-Wonnerup System and the Lake Warden System.

Australia is also signatory to international agreements with Japan and China to protect migratory birds. These agreements provide for cooperation to protect birds which migrate between the respective countries, and recognise that conserving migratory species requires international action. The agreements promote such measures as controlling the taking of migratory birds, establishing sanctuaries to protect the birds and their habitats, undertaking joint research, and exchanging information and publications.

Illegal nest robbing for the avicultural trade is a major threat to Red-tailed and White-tailed Black Cockatoos in Western Australia's south-west as their nest are destroyed and birds removed. Illegal operators may take young birds from the wild and then claim they had been bred in captivity from adult birds held lawfully under licence. Recent advances in DNA technology allows captive breeding claims to be tested, which has led to detection and prosecution of illegal trappers.

ReptilesAustralia's reptile fauna includes more than 750 known species.<br/>Of these 439 species occur in Western Australia, including 188<br/>that are found only in this State. The sandy deserts of Western<br/>Australia have one of the richest reptile faunas in the world; the<br/>Great Victoria Desert and the Great Sandy Desert each has about<br/>65 species of lizards.

### Environment

Status Few reptiles in Western Australia are declared rare or threatened, although the status of many is unclear because it is not known how many there are or where they live. Species currently listed as rare or likely to become extinct are the Leathery Turtle, Western Swamp Tortoise, Yinnietharra Dragon, Lancelin Island Skink, Baudin Island Spiny-tailed Skink and the Rough-scaled Python.

> Several other reptiles are listed as needing special protection because past hunting has depleted populations, they live only in a few places, or their numbers have been observed to decline. They are the Saltwater and Australian Freshwater crocodiles, and Ramsay's Carpet and Pilbara Olive pythons.

> No species of reptile is known to have become extinct in Western Australia since European settlement. Several species have declined in range and abundance, largely as a result of clearing land for agriculture or urban development.

*Conservation* One of the world's rarest reptiles, the Western Swamp Tortoise is known to live only in one nature reserve near Perth. Its conservation has been the subject of intensive research by CALM, the University of Western Australia and the Perth Zoo.

A captive breeding colony has been established and despite early difficulties, has successfully raised hatchings in the last three years. A recovery plan has been developed that will involve buying additional habitat, extending swamp life, controlling exotic predators, breeding in captivity and reintroducing hatchlings to the wild.

Four species of marine turtles have been recorded breeding in Western Australia — Green, Flatback, Hawksbill and Loggerhead. All four depend on access to undisturbed and unpolluted beaches to nest. In common with Leatherback and Olive Ridley turtles, they are migratory. World-wide turtle populations are under enormous human pressure. The Green, Loggerhead and Hawksbill turtles travel long distances from nesting to feeding grounds. CALM, in association with communities in the north-west, has been studying turtle migration and behaviour through a tagging program. Marine turtle conservation in Western Australia depends upon national and international support and cooperation.

Saltwater Crocodiles were hunted to near extinction in the Kimberley before hunting was prohibited in 1970. Since then crocodile numbers have slowly recovered. In 1988 commercial crocodile farming commenced in Western Australia and now three licensed farms are operating. The long term viability of wild crocodile populations is enhanced by these farms. A management program for both Saltwater and Freshwater crocodiles is currently being prepared.

| Amphibia | Frogs are the only amphibians that occur in Australia. Two families of frogs are represented in Western Australia: the <i>Hylidae</i> (Tree Frogs - 25 species) and the <i>Leptodactylidae</i> (Ground Frogs - 51 species). Western Australia's frog fauna is comparatively rich, with its 76 species forming more than one third of Australia's known 182 species. Forty-one species are known only in this State, including 27 of the 29 species occurring in the south-west. Several genera found elsewhere in Australia are most diverse in Western Australia, for example <i>Geocrinia, Uperoleia, Heleioporus</i> and <i>Neobatrachus</i> , while the burrowing genera <i>Arenophryne</i> and <i>Muobatrachus</i> occur only in this State. |
|----------|---|
|          | Myobatrachus occur only in this State.  |

- Status Two species, *Geocrinia vitellina* (Yellow-bellied Frog) and *G. Alba* (White-bellied Frog), are gazetted as threatened fauna because of restricted distributions and vulnerability to habitat change. No species of frog is known to have become extinct in Western Australia since European settlement.
- *Conservation* Although many species of frog can withstand changes in the uses of land, many others are vulnerable to disturbance. Few survive major land disturbances such as the salinity changes occurring in the wheatbelt. Several species may perish in the wake of agricultural clearing or urbanisation.

Species of the *Geocrinia Rosea* complex, for example, are restricted to permanently damp sites in the lower south-west and have not survived the destruction of their habitat by agricultural clearing or trampling of stock. A recovery plan has been prepared for the two *Geocrinia* species listed as threatened fauna. It recommends adding to the reserve system to protect stream vegetation in agricultural areas, an important habitat of these frogs.

**Terrestrial** Invertebrates Invertebrates Invertebrates (animals without backbones) play important roles in every ecosystem and represent about 98 percent of the Earth's animals. Nevertheless, because most invertebrates are very small and most people's experience of them is restricted to the small proportion of species that are nuisances or economic pests, the ecological importance of invertebrates is rarely appreciated.

> The number of invertebrate species in Western Australia is not known but is doubtless several hundreds of thousands. The main types of invertebrates are insects, arachnids (spiders, scorpions, mites, ticks), myriapods (centipedes, millipedes) and annelids (earthworms, leeches). About 90 percent of invertebrates are insects. The forest of south-west Western Australia have been estimated to support some 15,000 to 20,000 species of insects.

StatusInvertebrates are characteristically smaller and therefore more<br/>abundant than vertebrates. Only Jewel Beetles (Family:<br/>Buprestidae) and the primitive ant, Nothomyrmecia macrops, are<br/>protected.

In Western Australia the conservation status of most invertebrate species is unknown, as the majority are yet to be described by science. This lack of a taxonomic foundation has seriously hindered research on much of Western Australia's invertebrate fauna.

For a limited number of invertebrates, however, considerable taxonomic, biological and ecological information is available. These include species of economic importance such as agricultural and forest pests and macro-invertebrates of intrinsic interest to naturalists, for example dragonflies, lacewings, beetles, butterflies, cicadas, spiders and scorpions.

The impact of European settlement on some of Australia's vertebrate fauna has been devastating, and it is quite likely that the impact on some invertebrates has also been severe.

*Conservation* Conserving such a large and diverse group of animals presents considerable logistical problems.

Despite their ecological significance, research and management committed to the conservation of invertebrates lag far behind that for vertebrate animals.

Concern with pest invertebrates has focussed on their control. Nevertheless, such research has contributed to the knowledge of invertebrate biology and population dynamics. In Western Australia, research is continuing into forest pests such as Jarrah Leafminer, Gum Leaf Skeletonizer, Autumn Gum Moth and Bullseye Borer.

The health of most ecosystems is dependent on the functions provided by invertebrates and micro-organisms. These animals are too small and poorly known to attempt to protect them at a species level. Emphasis will, therefore, need to be placed on conserving a range of habitats to conserve the invertebrate fauna associated with those habitats. CALM is aiming to conserve a range of habitats so the invertebrate fauna who live in them can survive.

# Marine and<br/>Freshwater FaunaThe majority (around 1,040) of the 1,500 species of fish found in<br/>Western Australian waters are tropical. The remainder are either<br/>southern temperate (400 species) or freshwater (60 species).

Most marine organisms have the ability to disperse in currents, usually as eggs or larvae. Consequently marine ecosystems generally have a much higher degree of interconnection than terrestrial ecosystems. Status Western Australia's coastal waters fauna has been increasingly exploited since European settlement. Most species have been managed as commercial fisheries, with some species exploited at very high levels. In spite of this exploitation of the marine environment, unlike the terrestrial environment, no species are known to have become extinct.

Habitat degradation and destruction in coastal waters and estuaries, largely through pollution, is probably the greatest threat to the marine fauna. In the north-west the mollusc *Drupella* has extensively destroyed corals. This may be a natural event or the result of an unknown artificial disturbance. Although exotic species have been introduced unintentionally (in ships' ballast water), they have not had the same effects as have occurred in terrestrial ecosystems.

*Conservation* It is taking longer to establish a system of marine conservation reserves representing all the major marine habitat types occurring in Western Australia and their faunas and floras than it has to set up an equivalent terrestrial system. Six marine conservation reserves have recently been established, the most significant being the Ningaloo and Marmion Marine Parks. Exploitation pressure in marine organisms has been controlled by limiting entry to commercial fisheries and introducing bag limits and closed seasons in recreational fisheries.

Two species of fish found only in the subterranean waters of North-West Cape, the Blind Gudgeon and the Blind Can-eel, are gazetted as threatened fauna because of their restricted distribution and vulnerability to changes in the aquifier than may follow increased use of groundwater. The degree of which the effects of waste disposal (particularly sewage) in coastal waters between Bunbury and the Perth metropolitan areas can be limited will influence future marine habitat and biota conservation in this region, which is experiencing the most rapid human population growth in Western Australia.

Legislation and Management Western Australia's flora and fauna (excluding fish) are protected under the Wildlife Conservation Act (1950-1987) and the Conservation and Land Management Act (1985) while responsibility for national parks, nature reserves, marine conservation reserves and conservation parks, are vested in the National Parks and Nature Conservation Authority (NPNCA). All are administered by the Department of Conservation and Land Management. Fish species are protected and managed through the Fisheries Act, which is administered by the Department of Fisheries.

> The protection of threatened flora and fauna and the conservation of natural resources requires the preparation of detailed management plans to study and safeguard the natural habitat. With the progressive implementation of these plans more of Western Australia's unique environment is being preserved for the benefit of all.

### **Environmental Protection**

#### Contributed by the Environmental Protection Authority

**Perth's Air Quality** Perth enjoys air quality which would be the envy of many big cities around the world. However, the Environmental Protection Authority (EPA) has been concerned for some years that Perth has a growing smog problem — a concern that has been confirmed by the EPA air monitoring at Caversham, north-east of the city. Photochemical smog forms when certain pollutants such as those from motor vehicles react together in sunlight. It is characterised by a whitish haze, eye and respiratory tract irritation, and damage to some plants and susceptible materials such as rubber.

The EPA and the State Energy Commission of WA are conducting a \$3 million three-year study of photochemical smog formation in Perth. The study, to end in late 1994, will provide the most detailed information yet on the sources of pollutants in Perth's air, smog formation and dispersion and general air quality. This will help the EPA to devise strategies for managing the issues and avoiding air pollution problems experienced by other cities.

**Coastal Waters** With Perth's population predicted to double in the next 30 years, the need to carefully manage the marine environment has never been more urgent. To ensure this, the EPA and the Water Authority of Western Australia (WAWA) are conducting major studies of Perth's coastal waters.

The Southern Metropolitan Waters Study is being coordinated by the EPA and the Northern Metropolitan Waters Study is being coordinated by WAWA. These studies will determine the environmental condition of coastal waters between Warnbro Sound and Yanchep and the ability of these waters to cope with waste disposal. Protecting the marine environment is being managed using the concept of assimilative capacity; this concept is gaining national recognition and Western Australia is at the forefront in using this technique to minimise coastal pollution.

Lead in the Lead levels in central Perth's air have dropped significantly after moves to restrict the content of lead in super grade petrol sold in Western Australia. Lead is a toxic metal which can cause health problems, particularly in young children.

The EPA's monitoring has shown the amount of lead in Perth's atmosphere has fallen below the air quality goals established by Australia's National Health and Medical Research Council's (NHMRC) 90 day running mean of 1.5 micrograms per cubic metre. The annual mean atmospheric lead concentration for Perth's central business district for 1990 and 1991 was however higher than the World Health Organisation's annual average guideline.

As a result of its concern about lead levels in the atmosphere, the EPA prepared and had gazetted a Regulation under the *Environmental Protection Act 1986* which controls the concentration of lead in premium motor spirit to meet national and international standards. Recent research linking lead in petrol with lead in the air and in children's blood has prompted moves to speed up further reductions of permissible lead concentrations in super grade petrol in Western Australia.

- Legislation and Management The Environmental Protection Authority is an independent statutory authority which advises the Government about environmental issues. The EPA was established in 1971 and takes its powers from the *Environmental Protection Act 1986* which lists the EPA's objectives as to protect any part of the environment (from waste, noise, smell or any other pollution-causing activity) and to prevent, control and abate pollution. Its primary roles are:
  - Environmental Impact Assessment: the EPA makes recommendations to Government on environmental issues affecting development
  - Environmental Investigation: involves the EPA using its own expert staff or the staff of Government departments to investigate environmental problems and to recommend remedies to Government
  - Pollution Control: Ensuring that the environment is not threatened by pollution

Ultimately the EPA aims at protecting our environment and responding to people's aspirations and rights to a clean, safe place to live.

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|------------------|--|
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# ENERGY AND WATER RESOURCES

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3 water

# Chapter 3

# ENERGY AND WATER RESOURCES

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## Chapter 3

# ENERGY AND WATER RESOURCES

## Energy

The availability of energy is an important factor in the economic and social development of any country, and this is no less so in Australia, which ranks amongst the highest per capita energy users in the world.

In Western Australia, the per capita energy consumption is approximately 10 per cent higher than that for the rest of Australia, primarily because of two factors: firstly, the vast area of the State in relation to its population and the resultant high demand for transport energy; and secondly, the development and expansion of large scale mining and mineral processing industries since the mid 1960s which has added considerably to energy demand.

Mining of black coal began in the 1890s in the Collie region, and with the exceptions of wind power and firewood, coal was the only indigenous source of primary energy until the 1960s. While Western Australia is still dependent on imports of some petroleum products, it is considerably more self-sufficient in fossil fuel based energy resources than it was in the early 1960s.

Production of crude oil began at Barrow Island in 1967, followed in 1971 by natural gas at Dongara, further broadening the State's energy resource base. More recently, large deposits of natural gas in the North West Shelf area off Western Australia have been developed, with production from this source commencing in 1984. Several other deposits of energy minerals are at various stages of exploration, evaluation or development.

One of the factors influencing previous economic development of this State has been the limited availability of local energy supplies. With the development of the North West Shelf natural gas project, a substantial energy surplus was created for the first time. The plentiful reserves of gas and black coal have enabled the State to become a net energy resource exporter.

In addition, research and development work continues on the various alternative sources of energy including solar and wind energy.

## **Energy Resources**

Western Australia's resources of energy minerals are shown in table 3.1. To put this resources data into perspective, recent State production data have also been shown. The resources data, except for black coal, represent amounts which are expected to be profitably extractable, given existing knowledge of mineral deposits, current prices and technology. Resources data are therefore subject to considerable revision if these factors change.

# TABLE 3.1 – FUEL MINERALSRESOURCES AND PRODUCTION, 1991-92

| Туре   | Unit   | Resources(a)                                 | Production                 |
|--|--|--|----------------------------|
| Hydrocarbon liquids—<br>Crude oil<br>Condensate<br>Natural Gas<br>Black coal | mil. cu m<br>mil. cu m<br>mil. cu m<br>mil. tonnes | (b)27.4<br>(b)51.8<br>(b)250,362<br>(c)4,220 | 4.0<br>1.6<br>3,847<br>5.5 |

(a) At 30 June 1990. (b) Probability greater than 90 per cent of resources shown are recoverable. (c) Represents open cut and underground resources, both demonstrated and inferred.

Sources: Joint Coal Board; Western Australian Department of Mines

While it is not possible to quantify such resources, Western Australia's geographical and climatic characteristics are such that it has potential to take advantage of advances in the use of solar, wind and biomass energy, as well as tidal and wave power.

## **Energy Production**

*Electricity* Most of the electricity production in the State is generated by the State Energy Commission of Western Australia (SECWA), whose responsibilities include ensuring the effective and efficient use of the State's energy resources and the provision of economical and reliable supplies of electricity and gas. Significant amounts of electricity are also generated by private enterprise, particularly large-scale mining companies in the Pilbara region.

SECWA operates two power grid systems, one for the Pilbara and the other for the south-west, which supply the electricity needs of 98 per cent of the State's population.

South-West Grid The *South-West Interconnected System* services an area from Kalbarri in the north to Bremer Bay in the south and from Perth east to Kalgoorlie. Three major thermal power stations provide the bulk of electricity for the system. They are located at Muja (1,040MW capacity) and Bunbury (120MW), both are coal fired and generated around 66 per cent of electricity supplied through the system during 1991-92; and at Kwinana (880MW), fuelled by coal, heavy fuel oil and North West Shelf natural gas.

| Fuel  | Unit                           | 1989-90                         | 1990-91                         | 1991-92                         |
|---|--------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Coal<br>Fule oil<br>Distillate<br>Natural gas | '000 tonnes<br>"<br>terajoules | 3,633<br>18.8<br>68.0<br>35,056 | 4,397<br>11.6<br>75.1<br>23,894 | 4,408<br>10.7<br>59.7<br>24,754 |

TABLE 3.2 – FUELS USED FOR ELECTRICITY GENERATION

Source: SECWA

Gas turbines are located at Pinjar (north of Wanneroo), Mungarra (south-east of Geraldton), Kwinana, Geraldton and Kalgoorlie to provide peak and emergency power. The commissioning of an additional four 36MW and one 116MW gas turbines at Pinjar, with another 116MW turbine to be completed in 1993, make Pinjar the third largest station in this system with 14.4 per cent of the total capacity of 2638MW.

Pilbara Grid The *Pilbara Interconnected System* links Karratha, Dampier, Cape Lambert, Wickham, Roebourne, Port Hedland and Goldsworthy. Electricity is supplied from Cliffs Robe River Iron Associates' gas-fired power station at Cape Lambert. Additional power can be drawn from the SECWA stand-by diesel generating facility at Port Hedland, froin Hamersley Iron Proprietary Limited's power station at Dampier and from a SECWA gas turbine generating unit also located in Dampier.

Outside the electricity grid systems, SECWA operates another 28 smaller diesel power stations with a total capacity at 30 June 1992 of 272MW. SECWA also provides support services for the Aboriginal and Torres Strait Islander Commission to help run 34 Aboriginal village power stations in remote areas of the State.

During 1991-92 SECWA recorded a total of 4.4 million tonnes of coal and 24.8 petajoules of natural gas consumed in power stations. At 30 June 1992, SECWA had 656,927 customer accounts for electricity throughout Western Australia.

Petroleum Fuels Until 1954, Western Australia was wholly dependent on imports for its supplies of petroleum fuels. The opening of an oil refinery at Kwinana in that year brought some local input into petroleum fuel production although, initially, all the feedstock for the refinery was imported. The first commercial deposits of oil were found on Barrow Island, off the north-west coast of the State, in 1964 and shipments commenced in 1967. This oil is refined at several Australian refineries, including Kwinana.

> The North West Shelf provides most of the natural gas to SECWA with a small amount of gas also being received from the onshore Woodada gas field (near Dongara). In addition to reticulating (principally) North West Shelf natural gas to customers linked to

the Dampier to Bunbury pipeline, SECWA also reticulates tempered liquefied petroleum (TLP) gas to customers in Albany on the south coast, and Simulated Natural Gas (SNG) to customers in Mandurah, south of Perth. At 30 June 1992, there were 276,914 customer accounts for natural gas and 2,705 customer accounts for TLP gas.

The North West Shelf project is based on the North Rankin and Goodwyn gasfields which contain expected recoverable hydrocarbons currently estimated at 242,200 million cubic metres of gas and 51 million cubic metres of condensate (with a 90 per cent probability that these volumes are recoverable). In North Rankin, the first field to be developed, the natural gas reservoir is trapped in layers of porous sandstone more than three kilometres below the sea floor. The gas-saturated sandstone beds have a cumulative thickness of approximately 300 metres and extend over an area of more than 50 square kilometres.

Construction of the offshore and onshore facilities for the project involved two phases; the first (the Domestic Gas Phase) to supply gas to Western Australia, while the second (the Liquefied Natural Gas (LNG) phase) supplies LNG to Japan.

The Domestic Gas Phase is complete. The LNG phase which began in 1985 involved the construction of three LNG processing 'trains'; four 65,000 cubic metre capacity LNG storage tanks to store the refrigerated LNG ready for export; and seven 125,000 cubic metre capacity LNG tankers to ship the LNG to Japan. This was completed in late 1992. An eighth LNG tanker has been ordered after an agreement by the eight Japanese companies to increase their order by 1 million tonnes a year.

LNG exports to Japan commenced in July 1989, with a total of 176 export shipments being made to 30 June 1992.

When both phases are fully operational at planned plateau production levels, output from the project will include: 10.5 million cubic metres (414 Terajoules) of gas per day for the domestic market in Western Australia; 6 million tonnes of LNG per year to eight Japanese electricity and gas utilities which service areas embracing 90 million people.

In 1995, the output will be increased to 7 million tonnes of LNG per year and 1.9 megalitres of condensate per year (33,000 barrels per day).

Table 3.3 shows sales of petroleum products in Western Australia. The data relate only to sales of refinery products (whether produced in this State or imported), and hence exclude products such as natural gas, which do not go through a refining process, or crude oil, which is a refinery input.

| r33            | 31  | 12   |
|----------------|---|--|
| 65             | 57  | 60   |
| 69             | 65  | 67   |
| 286            | 373   | 268  |
| 40             | 31  | 30   |
| 2,030          | 2,002   | 2,085  |
| 19<br>280      | 16<br>313   | 14<br>337  |
| r1,724         | 1,645   | 1,634  |
| r1,268<br>r456 | 1,120<br>525  | 1,040<br>594   |
| 92             | 87  | 116  |
| 1989-90        | 1990-91   | p1991-92   |
|                | 92<br>r1,268<br>r456<br>r1,724<br>19<br>280<br>2,030<br>40<br>286<br>69<br>65 | $\begin{array}{c ccccc} 92 & 87 \\ \hline r1,268 & 1,120 \\ r456 & 525 \\ r1,724 & 1,645 \\ 19 & 16 \\ 280 & 313 \\ 2,030 & 2,002 \\ \hline 40 & 31 \\ 286 & 373 \\ 69 & 65 \\ 65 & 57 \\ \end{array}$ |

# TABLE 3.3 – SALES OF PETROLEUM PRODUCTS (a) (megalitres)

(a) Includes reporting companies' own use, but excludes refinery fuel.(b) Includes lighting kerosene and heating oil.

Source: Australian Bureau of Agricultural and Resource Economics

During the year ended 30 June 1992, the North Rankin field produced 13,443 million cubic metres of gas and 1.99 million cubic metres of condensate. The field currently produces about 33 million cubic metres of gas per day of which 10 million cubic metres is re-injected into the reservoir, resulting in increased condensate production. The peak daily flow rate of gas supplied to SECWA during 1989-90 was 443 terajoules (11.6 million cubic metres), but averaged 370 terajoules during 1990 due to the Kwinana Power Station firing on coal.

Development of the condensate-rich Goodwyn field is now underway. Fabrication of the \$1.7 billion Goodwyn A platform components was completed in 1992 and the installation of the platform sub-structure commenced in October 1992.

It will be connected to the North Rankin A platform 23 kilometres to the south-east by undersea pipeline. The Goodwyn development is scheduled to commence production in the latter half of 1993 and will have the capacity to process 25.5 million cubic metres of gas per day and up to 12,700 kilolitres per day of condensate.

In 1984 SECWA constructed a 660 millimetre capacity pipeline, 1,500 kilometres long, from Dampier to Wagerup, at a cost of approximately \$1,000 million, to carry gas to its Perth distribution network, and to major industrial customers in the south-west of the State. The pipeline has been extended to serve major industrial customers in the Pilbara and smaller gas supply systems at Carnarvon, Geraldton, Pinjarra, Bunbury and Harvey.

Petroleum exploration has continued at a high level in recent years. Statistics relating to this activity and to the production of crude oil and natural gas are contained in table 3.4.

|                              | Unit     | 1986-87        | 1987-88 | 1988-89 |
|------------------------------|----------|----------------|---------|---------|
| Wells drilled (i.e. those wi | hich rea | ched final dep | oth)—   |         |
| As oil producers             | No.      | 3              | 4       | 3       |
| As gas producers             |          | 1              | _       | 1       |
| As oil and gas producers     | 5 "      |                | 1       | 3       |
| As gas and condensate        |          |                |         |         |
| producers                    |          | _              | _       | 1       |
| Plugged and abandoned        | "        | 8              | 30      | 21      |
| Total                        | "        | 12             | 35      | 29      |
| Drilling still in            |          |                |         |         |
| progress at 30 June          |          |                |         |         |
| (uncompleted holes)          | 11       | 4              | 3       | 2       |
| Wells drilled or drilling    |          |                |         |         |
| over 3,000 metres            | "        | 1              | 1       | 3       |
| Depth drilled—               |          |                |         |         |
|                              | etres    | 24,734         | 51,570  | 55,521  |
| Uncompleted holes            |          | 5,286          | 2,384   | 4,412   |
| Total                        |          | 28,175         | 53,954  | 59,933  |

#### TABLE 3.4 – PRIVATE PETROLEUM EXPLORATION WELLS AND DEPTH DRILLED Reference: Catalogue No. 8404.5

An LPG extraction plant based at Kwinana and using North West Shelf gas to produce propane and butane became fully operational in October 1988. About 100,000 of the 150,000 tonnes produced each year is being exported to Japan.

Commercial production of coal commenced in the 1890s at Collie. For many years, coal was the major source of energy in the State, being used to generate electricity, to manufacture 'town' gas and to provide fuel for steam locomotives and industry generally. The major user of coal mined in the Collie basin continues to be SECWA with coal being the main fuel for electricity generation for SECWA's South-West interconnected system.

Substantial deposits of black steaming coal suitable for power generation have been demonstrated at Hill River, 250 kilometres north of Perth near the coastal town of Jurien. The deposit, at 600 megatonnes (demonstrated and inferred), has the potential to be a major long term supplier of energy to the State.

Apart from the Collie and Hill River deposits, several other deposits of both black and brown coal have been identified and are at present being evaluated. Chapter 12 contains statistics

Coal

relating to exploration and production of coal. Data showing trends in coal production since 1900 are contained in the Historical Summaries at the end of the Year Book.

*Solar Energy* The use of solar radiation for the production of domestic hot water is well established in Western Australia, and is the most common application of solar energy. Such systems are accepted as being competitive with other forms of domestic water heating.

Photovoltaic cells, which convert light directly into electrical energy, are used for the refrigeration of food, and basic lighting and radio communications equipment in remote localities. Solar energy is also used for water and space heating in commercial applications and in agriculture, where solar power can be used to pump water from reservoirs and to electrify fencing.

At present, economical application of solar energy is largely restricted to relatively small scale heating purposes, with some more sophisticated applications in remote localities where factors such as the transport costs of conventional fuels are significant.

*Biomass* Biomass refers to living matter which can be used as a source of energy. It includes matter which can be used directly as a fuel (e.g. firewood) or after conversion (e.g. sugar cane converted to sugar, sugar converted to ethanol).

The concept of biomass includes organic waste materials such as sawdust and crop refuse, but excludes fossil fuels such as coal and petroleum. The most significant form of biomass to have been used as an energy source in Western Australia is firewood, and this is still an important source of household energy.

- *Uranium* No uranium has been mined on a commercial basis in Western Australia to date, though small amounts of ore have been extracted and processed for test purposes. A number of uranium ore bodies have been identified in the State, and exploration for this mineral is continuing. Further details of uranium exploration are contained in Chapter 12.
- Wind Energy Wind power was of some significance as an energy source in the early days of settlement and is still used extensively in agricultural and pastoral areas for pumping water for stock. Development of the use of wind power to generate electricity has intensified in recent years. In 1986, wind turbines were installed at a test site near South Fremantle. In March 1987, SECWA commissioned six 60 kilowatt wind turbines at Salmon Beach, a few kilometres west of the south coastal town of Esperance, to augment the local electricity supply. A wind power generator is also being used to augment the electricity supply on Rottnest Island.

Wind energy is now considered close to becoming cost effective for power production in areas with reliable wind and there are prospects for extending the use of wind beyond its present major application in the pumping of water. SECWA is currently studying the use of wind energy generators on the interconnected grid and have identified sites near Geraldton and Albany as being suitable for a wind farm of up to 20MW capacity.

- Other energy sources There are several other energy sources which have potential use in Western Australia. Sites have been identified in the Kimberley region in the north of the State which would be suitable for hydro-electricity generation, including the existing dam on the Ord River. Parts of the Kimberley coastline, where very large tidal ranges occur, have been identified as suitable sites for tidal electricity generation, while wave power is proposed to be harnessed in waters near Esperance. Some small deposits of oil shale have been identified in the south-east of the State.
- **Research** The Renewable Energy Advisory Council was established to advise the Western Australian Government on all aspects of research, development, demonstration and general promotion of renewable energy technologies.

The principal energy research organisations in Western Australia are SECWA, the Minerals and Energy Research Institute of Western Australia (MERIWA) and Murdoch University's Energy Research Institute (MUERI). SECWA is primarily responsible for the efficient and effective use of energy resources available to the State. Consistent with this responsibility, it is engaged in an active program of investigation and evaluation of renewable energy sources and applications of energy which may become significant in the future.

SECWA has undertaken studies into the use of alternative fuels for power generation and for use in motor vehicles. Vegetable oils have been tested with some success as alternative liquid fuels for generating electricity and tests are continuing into the use of LPG and compressed natural gas (CNG) in light vehicles. The Metropolitan (Perth) Passenger Transport Trust has converted approximately 45 Transperth buses to operate exclusively on CNG.

SECWA are currently looking at a number of opportunities to achieve energy savings. One area is the establishment of co-generation facilities, i.e. facilities enabling the combined generation of electricity and useful heat (steam or hot air). Industry and commercial organisations requiring heat can arrange to install plant that will generate electricity at the same time, either for their own use or for on-selling. Where economic, SECWA will purchase power from such facilities. SECWA and MERIWA are jointly funding a research program to assess the Landfill Gas (LFG) resource in the Perth metropolitan area. This information will be useful to organisations responsible for managing waste, the environment and energy utilisation. MUERI is principally involved in research and development of renewable energy sources, especially solar energy (solar radiation) systems. In addition, MUERI carries out a range of tests for manufacturers and research workers on a confidential basis.

Since 1984, staff at MUERI have undertaken field trials in remote areas on photovoltaic systems for producing electricity. Staff are now developing systems suitable for remote Aboriginal communities, with funding from the Federal Departments of Aboriginal Affairs and Primary Industries and Energy. There are also a number of other testing facilities in the State, some operating under contract. These facilities include the *Materials Performance Testing Facility* and the *Corrosion Testing Facility* at Curtin University of Technology and the *Materials Standards Laboratory* at the University of Western Australia.

At the national level, CSIRO and the Commonwealth Department of Primary Industries and Energy, and the Energy Research and Development Corporation (ERDC) are involved in a number of energy research programs. ERDC is a grant scheme established to encourage energy research.

Energy and the Environment There is an increasing awareness in the community about the possible impact on the environment of energy generation emissions, particularly from the combustion of fossil fuels. In response to community environment awareness, the Western Australian Government has outlined policies on energy conservation and emission controls. For its part, SECWA is seeking to enhance the management of energy demand by improving the efficiency of energy utilisation. It has also established a Renewable Energy Branch to investigate alternatives to the use of traditional non-renewable energy sources.

## Water

Of the inhabited continents, Australia has the lowest average rainfall and the highest proportion of rainfall that is lost back to the atmosphere through evaporation and transpiration. Western Australia's average annual rainfall is 310 millimetres compared with the Australian average of 420 millimetres, and the average annual run-off from this western third of the continent is only 11 per cent of the nation's total.

Water Resources The amount of usable surface and groundwater resources available in each of the drainage divisions of Western Australia, is shown in table 3.5.

| Drainage division | Surface | Ground-<br>water | Total  |
|-------------------|---------|------------------|--------|
| South-West        | 1,860   | 876              | 2,736  |
| Indian Ocean      | 285     | 262              | 547    |
| Timor Sea         | 8,660   | 523              | 9,183  |
| Western Plateau   | 1       | 155              | 156    |
| Total             | 10,806  | 1,816            | 12,622 |

#### TABLE 3.5 – DIVERTIBLE SURFACE AND GROUNDWATER RESOURCES (million cubic metres per annum)

Source: Water Authority of Western Australia (WAWA).

On a sustainable yield basis, 86 per cent of the State's fresh/marginal water resources are surface water and 14 per cent are groundwater. The majority of the resources, 73 per cent of the State's total, are in the Timor Sea Division.

The next most abundantly endowed division is the South-West, with 22 per cent of the State's potable resources. The remaining 5 per cent of divertible potable resources are in the Indian Ocean Division and the Western Plateau Division.

Water Authority of<br/>Western AustraliaThe Water Authority of Western Australia controls the majority of<br/>water-related services in Western Australia.

It is responsible for the following water-related services:

- water supply in the Perth metropolitan area and the majority of country towns;
- water resources assessment and management throughout the State;
- Government irrigation schemes;
- sewerage schemes in the Perth metropolitan area and many country towns; and
- major drains in the Perth metropolitan area and drainage in several country areas.

# **Water Supply** Western Australia has a great variation in the size and complexity of water supply schemes, ranging from town schemes servicing fewer than one hundred people, to the Perth metropolitan scheme servicing a population of more than one million.

Considerable use is made of groundwater by individual farmers, pastoralists, market gardeners and others and it is estimated that over 92,000 bores are in use in the State. The quality of water is variable and much of it is too saline for irrigation or even for stock. Groundwater sources are used to supply or augment the supplies of numerous towns, including such major centres as

## **Energy and Water Resources**

Perth, Albany, Bunbury, Busselton, Carnarvon, Dampier, Esperance, Exmouth, Geraldton, Karratha and Port Hedland.

In a number of mining towns in the north-west and Goldfields, mining companies are responsible for the provision of their own water supplies. Industries also use groundwater in substantial quantities, particularly in the processing of titanium, iron and alumina. Gold producers in the Eastern Goldfields use hypersaline groundwater extensively for gold ore processing. Recent mineral discoveries in several areas have given rise to very large demands for water, resulting in an intensified search for extra water resources.

Marked advances in the knowledge of aquifers and quality of water in the main sedimentary basin have been made as a result of extensive geological surveys and exploratory drilling by the Geological Survey (a branch of the Department of Mines), several oil companies, and the Water Authority.

Perth Metropolitan<br/>Water SuppliesThe sources of the metropolitan water supply are South Dandalup<br/>Reservoir, Serpentine Reservoir and Pipehead Reservoir, Canning<br/>Reservoir, Wungong Reservoir, Churchman Brook Reservoir, New<br/>Victoria Reservoir, North Dandalup Pipehead Dam, groundwater<br/>from the shallow unconfined aquifers of the Swan Coastal Plain<br/>and artesian water from the deep confined aquifers.

Work began in early 1991 on a new Victoria Dam, to replace the original Victoria Dam which was decommissioned in May 1990. The new dam has been built 200 metres upstream from the existing dam at an estimated cost of \$32.4 million. Its capacity is ten times greater than that of the old reservoir, and will contribute an additional 3,500 megalitres of water per year to the metropolitan supply system. The dam was commissioned in 1992.

Conjurunup Pipehead Dam, North Dandalup Dam, Jandakot Stage 2 Groundwater Scheme and the extension to the Pinjar Groundwater Scheme are currently under construction and will add a total of approximately 25,000 megalitres per year to the system yield.

Water from storages in the Darling Range is conveyed to the metropolitan area by large trunk mains, including tunnels as part of the conveyancing system from Canning and Wungong Dams. It is then distributed by feeder, distribution and reticulation mains, either directly from the trunk main or from large storage service reservoirs at Mount Yokine, Mount Eliza, Bold Park, Mount Hawthorn, Richmond, Melville, Buckland Hill, Hamilton Hill, Thompson Lake, Greenmount, Mirrabooka, Wanneroo, Whitfords and Tamworth Hill and from summit tanks and water towers situated at high points throughout the area supplied.

| Dam or reservoir              | Storage capacity |
|-------------------------------|------------------|
| Big Brook Dam                 | 627              |
| Canning Reservoir             | 90,350           |
| Churchman Brook Reservoir     | 2,240            |
| Drakes Brook Dam              | 2,290            |
| Fitzroy Dam                   | 4,650            |
| Glen Mervyn Dam               | 1,142            |
| Harding Dam                   | 63,800           |
| Harris Dam                    | 71,000           |
| Harvey Weir                   | 9,126            |
| Kununurra Diversion Dam (b)   | 97,900           |
| Logue Brook Dam               | 24,592           |
| Mundaring Weir                | 63,600           |
| New Victoria Reservoir        | 9,463            |
| North Dandalup Pipehead Dam   | (c)              |
| Ord River Dam (Lake Argyle)   | 6,109,000        |
| Quickup Dam                   | 1,189            |
| Samson Brook Dam              | 7,993            |
| Serpentine Pipehead Reservoir | 3,140            |
| Serpentine Reservoir          | 194,500          |
| 17-Mile Dam (d)               | 5,489            |
| South Dandalup Reservoir      | 204,340          |
| Stirling Dam                  | 53,769           |
| Waroona Dam                   | 14,872           |
| Wellington Dam                | 184,900          |
| Wungong Reservoir             | 57,800           |

# TABLE 3.6 – DAMS AND RESERVOIRS: STORAGE CAPACITY (a) ('000 kilolitres)

(a) At 30 June 1992.(b) Ord River Diversion Dam.(c) Diversion weir only.(d) On Uralla Creek, an anabranch of the Fitzroy River.

Source: WAWA.

| (′000 kilolitres)  |                           |                  |                         |  |  |
|--|---------------------------|------------------|-------------------------|--|--|
| Source   | 1989-90                   | 1990-91          | 1991-92                 |  |  |
| Canning Reservoir<br>Churchman Brook Reservoir                             | 23,904<br>2,043           | 33,519<br>2,862  | 28,650<br>4,156         |  |  |
| Mundaring Weir<br>North Dandalup Pipehead Dam<br>Serpentine and Serpentine | 807<br>11,903             | 1,868<br>12,708  | 6,341<br>15,481         |  |  |
| Pipehead Reservoirs<br>South Dandalup Reservoir<br>Victoria Reservoir      | 40,467<br>16,911<br>1,931 | 48,270<br>21,199 | 39,481<br>16,058<br>(a) |  |  |
| Wungong Reservoir  | 23,673                    | (a)<br>22,354    | 20,369                  |  |  |
| Total hills sources output   | 121,644                   | 142,783          | 130,537                 |  |  |
| Total groundwater output   | 78,182                    | 83,263           | 79,894                  |  |  |
| Gross output<br>Less output to Mandurah                                    | 199,827<br>4,717          | 226,046<br>6,086 | 210,431<br>6,134        |  |  |
| Output to Metropolitan Area  | 191,315                   | 215,664          | 204,297                 |  |  |

#### TABLE 3.7 – METROPOLITAN WATER SUPPLY QUANTITIES OF WATER DRAWN ('000 kilolitres)

(a) Replaced by New Victoria Reservoir.

Source: WAWA.

The Canning and Wungong Tunnels are designed to help meet the peak summer demand for water by producing high capacity links to Canning Reservoir and Wungong Reservoir respectively. In addition, groundwater is distributed, after treatment, into the supply system. The groundwater is treated at water treatment plants situated at Gwelup, Mirrabooka, Wanneroo and Jandakot. Groundwater from artesian wells is also fed into service reservoirs.

|                            | 1989-90 | 1990-91 | 1991-92 |
|----------------------------|---------|---------|---------|
| Number of services         | 379,903 | 389,825 | 400,159 |
| Length of water mains (km) | 9,937   | 10,013  | 10,105  |
| Water supplied ('000 kL)   | 189,597 | 213,589 | 203,105 |

| TABLE 3.8 – METROPOLITAN WATE | SUPPLY |
|-------------------------------|--------|
|-------------------------------|--------|

Source: WAWA

Country Water Supplies The Water Authority is responsible for all town water supply schemes in the country towns of Western Australia, with the exception of the Bunbury and Busselton schemes which are run by local Water Boards. There are also a small number of town water supply schemes operated by mining companies.

Individual water supplies serve railways, timber mill towns, isolated mines, pastoral properties, stock routes and agricultural areas, mainly from dams, tanks, wells and bores.

In country areas throughout most of the State, total control has been exercised on groundwater usage. The control of other areas has been tailored to specific problems which are known to exist.

|                            | 1989-90 | 1990-91 | 1991-92 |
|----------------------------|---------|---------|---------|
| Number of services         | 127,933 | 132,836 | 136,567 |
| Length of water mains (km) | 14,734  | 15,148  | 15,272  |
| Water supplied ('000 kL)   | 92,783  | 97,321  | 91,448  |

### TABLE 3.9 – COUNTRY WATER SUPPLY

Source: WAWA.

Great Southern Towns Water Supply This scheme provides water to the coal mining town of Collie, together with towns and farmlands in the Great Southern Area. Water has been drawn from Wellington Dam, and supplied to towns from Brookton and Kondinin in the north to Kojonup and Gnowangerup in the south. The new Harris Dam near Collie was completed in 1990. The dam supplies water to all towns, communities and farmlands within the Great Southern Scheme. Its reservoir capacity is almost 72,000 megalitres with a catchment area of 321 square kilometres.

Following commissioning of the Harris system, the Wellington Reservoir has been opened for controlled recreation activities. Reafforestation of the reservoir catchment is expected to reduce salinity to acceptable levels for future domestic supply in 15 to 20 years.

Goldfields and Agricultural Areas Water Supply This scheme provides water to consumers in the Central agricultural areas and eastern Goldfields. Water is supplied to 93 towns and to 2,650,000 hectares of farmland in the central and north-eastern wheatbelt. Water is pumped from Mundaring Weir on the Helena River, augmented by the Lower Helena Pipehead Dam and supplemented by the metropolitan system when necessary. The main pipeline between Mundaring and Kalgoorlie is 554 kilometres long, with 18 pumping stations and extensions to country towns and agricultural areas at several points.

Lower Great Southern Towns Water Supply This scheme supplies the towns of Albany, Mount Barker and Kendenup. Water is drawn from three sources: Two Peoples Bay east of Albany (the water from which is treated for colour removal), Limeburners's Creek, and bores which are located west of Princess Royal Harbour.

MandurahThis scheme provides water to the town of Mandurah, plus the<br/>localities of Yunderup, Furnissdale, Ravenswood, Riverside<br/>Gardens and Coodanup (located east of Mandurah), together with<br/>Erskine, Falcon, Avalon, Wannanup, Placid Waters, Florida,<br/>Melros and Dawesville (located south of Mandurah).

Approximately 90 per cent of the water consumed is supplied by gravity from the South Dandalup Reservoir with the remainder being injected into the main supply from metropolitan hills storages and bores at Ravenswood. At present the scheme supplies some 16,000 services and is the most rapidly growing scheme in the State.

Geraldton Regional The Geraldton Regional Water Supply serves consumers in the towns of Geraldton, Dongara, Port Denison, Mullewa, Walkaway, Drummonds Cove, Eradu and Narngulu with water being drawn from the Wicherina, Allanooka and Wye Springs borefields.

Port HedlandThe Port Hedland Regional Water Supply provides water for the<br/>consumers of Port Hedland, Finucane Island and South Hedland<br/>from the complementary De Grey and Yule River borefields.

West Pilbara The West Pilbara Water Supply serves the towns of Dampier, Water Supply Karratha, Roebourne, Wickham and Point Samson, and also the industrial complexes at Dampier, the Burrup Peninsula and Cape Lambert in the north of the State. Water is drawn from the Harding Dam in conjunction with the Millstream aquifer.

Supplies to other<br/>Country TownsThe schemes being administered under the provisions of the<br/>Country Areas Water Supply Act 1947, supply 108 towns with water<br/>from stream flow, dams, tanks, wells and bores.

The Water Authority is also responsible for the provision and maintenance of tanks and wells as a source of cartage water for a number of small communities in gold mining and agricultural areas.

Aboriginal The Water Authority's involvement with Aboriginal communities throughout the State continues at a high level on a consultancy/contractural basis. Four coordinators at Kununurra, Port Hedland, Kalgoorlie and Geraldton operate in conjunction, with overall coordination by officers in Karratha.

During 1991-92, Aboriginal and Torres Strait Islanders Commission (ATSIC) and Aboriginal Affairs Planning Authority (AAPA) together provided \$4.6 million for upgrading and construction of water supply and sewerage facilities for 88 town-based, remote and newly emerging communities throughout the State. In addition, AAPA provided \$1.6 million for maintenance to be carried out at 48 remote communities and a small amount of money for maintenance of internal infrastructure work at town based communities.

Water Resources<br/>Assessment and<br/>ManagementThe Water Authority, in conjunction with the Western Australian<br/>Water Resources Council, is responsible for the assessment and<br/>management of water resources in Western Australia. The<br/>Authority is also responsible for the evaluation, measurement and<br/>general management of surface and groundwater resources,<br/>including research, investigation and hydrological studies.

Water Quality The Authority monitors and controls salinity and contamination of water supplies by an extensive sampling and treatment program. It also monitors land use management in catchment areas, particularly in relation to bauxite mining and forest management.

IrrigationIrrigation activities conducted by the Water Authority are<br/>restricted to designated schemes within the North-West,<br/>Mid-West and South-West Regions.

Water entitlements vary between schemes. The Ord River Scheme at Kununurra in the North-West Region, provides virtually an open water entitlement owing to the small scope of the existing irrigation area in relation to the potential capacity of the scheme. Water is used throughout the year from surface storage. All other schemes limit water entitlement in relation to the rated irrigable land of each irrigation area. Water entitlements vary according to seasonal factors and water availability.

Schemes in the South-West Region, at Waroona, Harvey, Collie River and Preston Valley, provide water only during the summer months from surface storages replenished over the preceding winter. Entitlements vary between schemes and between sub-areas of schemes depending on available storages.

The Carnarvon scheme in the Mid-West Region provides water throughout the year from underground sources beneath the Gascoyne riverbed. The Authority's scheme supplements the irrigated supply from their own underground sources. Use of water from all sources is limited by individual entitlements which vary from year to year. Entitlements are affected by the length of time since underground aquifers were last replenished by a river flow.

|                                       | 1989-90 | 1990-91 | 1991-92 |
|---------------------------------------|---------|---------|---------|
| Length of channels<br>and drains (km) | 903     | 903     | 903     |
| Assessments (no.)                     | 1,536   | 1,535   | 1,559   |
| Area irrigated (ha)                   | 19,131  | 19,152  | 19,152  |
| Water consumed ('000 kL)              | 200,083 | 235,044 | 245,969 |

| TADLE $3.10 - IKKIGATIOI$ | TABLE | 3.10 - | IRRIGATION |
|---------------------------|-------|--------|------------|
|---------------------------|-------|--------|------------|

Source: WAWA.

Drainage The Water Authority is responsible for the provision of a number of drainage and drainage-related services throughout Western Australia. It is responsible for the preparation and implementation of an arterial drainage scheme for the metropolitan area, whereby it receives surplus water from local drainage systems into controlled main drains and disposes of it through outlets to the sea or rivers, or by groundwater recharge where practicable.

> This scheme provides a means of coordinating the Water Authority's drainage planning activities with those of local authorities, particularly for potential areas of new land development.

> The Water Authority operates and maintains proclaimed Drainage Districts, which are mainly located on the coastal plain south of Perth between Wungong/Serpentine and Busselton. Other declared Drainage Districts are between Denmark and Albany, and at Carnarvon.

Many of these drainage districts are an inseparable adjunct to irrigation schemes on the coastal plain. Local authorities are responsible for drainage activities in other areas.

Advice on flood plain management and river improvement matters is also provided by the Water Authority. This involves performing flood studies in order to identify and assess flood-prone areas of the State. This service has received increased attention in recent years.

- Sewerage Schemes The Water Authority aims to ensure the effective collection, conveyance, treatment and disposal of waste-water and industrial waste to safeguard community health and protect the environment.
- Metropolitan Sewerage The Water Authority operates five major waste-water treatment plants throughout the metropolitan area. Over 98 per cent of the treated effluent from these plants is discharged to the ocean where it is diluted and dispersed by currents and wave action. The remainder is discharged to effluent soakage basins for land disposal.

|                           | 1989-90 | 1990-91 | 1991-92 |
|---------------------------|---------|---------|---------|
| Sewered assessments (no.) | 334,767 | 346,868 | 359,898 |
| Length of sewers (km)     | 5,532   | 5,638   | 6,368   |

## TABLE 3.11 – METROPOLITAN SEWERAGE SYSTEMS

Source: WAWA.

Country Towns Sewerage

At 30 June 1992, the Water Authority operated 71 town sewerage schemes throughout the country areas of Western Australia. In addition, a further 17 sewerage schemes were in operation by local government authorities under provisions of the Health Act, and a number by major mining companies in towns established to service mining operations. Several other local government authorities have reached an advanced stage of planning to commence schemes in future years.

## TABLE 3.12 – COUNTRY SEWERAGE SYSTEMS

|                         | 1989-90 | 1990-91 | 1991-92 |
|-------------------------|---------|---------|---------|
| Number of towns sewered | 68      | 69      | 71      |
| Length of sewers (km)   | 1,613   | 1,682   | 1,699   |
| Number of services      | 67,566  | 72,558  | 74,848  |

Source: WAWA.

## Energy and Water Resources -

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# GOVERNMENT

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4

# Chapter 4

# GOVERNMENT

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## Chapter 4

# GOVERNMENT

A Legislative Council was established in Western Australia shortly after its foundation as a Crown Colony and sat for the first time in February 1832. The Council was non-elective and consisted of the Governor and four senior officials. In 1839, membership was increased to nine when the Governor nominated four unofficial members.

> Additional appointments were made from time to time until the dissolution of the nominee Legislative Council in 1870 with the inauguration of representative government as provided for in the Australian Colonies Government Act of 1850. This Act, which enabled the establishment of representative governments in other Australian Colonies, withheld the privilege from Western Australia until such time as the Colony should be able to defray all costs of government from its own revenues, and it was not until 1870 that it was felt that Western Australia was able to satisfy this condition.

> The new Legislative Council, for which elections were held in October of that year, consisted of twelve elected members, three nominees and three officials. The number of members of the Council was increased in 1874 to 21, of whom 14 were elected; in 1882 to 24, of whom 16 were elected; and in 1886 to 26, comprising 17 elected members, 5 nominees and 4 officials.

Following the passage by the Legislative Council of a Constitution Government Act in 1889 and subsequent representations made in London by delegates sent from the Colony, responsible government was granted to Western Australia by an Imperial Act assented to on 15 August 1890.

> Provision was made for the establishment of a Parliament of two Houses, to be known as the Legislative Council and the Legislative Assembly, to replace the old Council.

Outline of Constitutional Development

Responsible

Proclamation of responsible government was made in Perth on 21 October 1890 and election of the 30 members of the Legislative Assembly took place in November and December. The 15 members of the Legislative Council were nominated by the Governor, as provided for in the Constitution Act, and the Parliament was officially opened on 30 December 1890.

The *Constitution Act of 1889*, while prescribing a Council which was originally nominative, contained a provision that, after the expiration of six years or on the population of the Colony reaching 60,000, the Council should become fully elective. The required population was attained in 1893 and an amendment to the Act in that year enabled the election of 21 members to the Legislative Council, and at the same time increased the Legislative Assembly to 33 members.

By an amendment of 1899, membership of the Legislative Council was raised to 30 and of the Legislative Assembly to 50. Provision was made for the Legislative Assembly to be increased to 51 members by the *Constitution Acts Amendment Act (No. 2) 1965*. The increase in numbers, however, did not become effective until the State general election in 1968.

*Federation* On 1 January 1901, Western Australia and five other Australian Colonies were federated under the name of the 'Commonwealth of Australia', authority for the union having been given by the *Commonwealth of Australia Constitution Act* which was passed by the British Parliament in 1900. By a provision of the Constitution Act the constituent parts of the Commonwealth previously designated 'Colonies' became known as 'States'. Under the Constitution, powers are divided between the Parliaments of the Commonwealth and of the States, by conferring power in respect of specific subjects on the Commonwealth either exclusively or jointly with the States, leaving the remaining powers to the States.

> Procedure in both Federal and State Parliaments is based on British practice. The legislatures consist of the Sovereign, represented by the Governor-General of Australia or the Governor of the State, and the elected members. In the field of executive government, the British 'Cabinet' system has also been adopted. The members of the Cabinets must hold seats in the legislature as elected members. The Cabinet is responsible to the Parliament and continues in office only while holding the confidence of the Parliament. All Cabinet Ministers are members of the Executive Council, the supreme group of advisers to the Crown, and the Cabinet thus provides the executive government of the Commonwealth or the State. The Executive Council is presided over by the Governor-General of Australia or the Governor of the State and at its meetings, which are formal and official in character, the decisions of the Cabinet are given legal form, appointments are made, resignations accepted, proclamations issued and regulations approved.

## Viceregal Representation

*The Governor-General* of Australia Under the Commonwealth Constitution, ultimate executive power is vested in the Crown and is exercised by the Governor-General as the direct representative of the Sovereign. Appointment to the office is made by the Crown after consultation with the Prime Minister of the Commonwealth. The present Governor-General is His Excellency the Honourable Bill Hayden, AC, who was sworn in on 16 February 1989. During the absence from Australia of the Governor-General, it is usual for the senior among the State Governors to be appointed Administrator.

The Governor of Western Australia The Governor of Western Australia is the personal representative of the Sovereign in the State and exercises the powers of the Crown in State matters. He is the titular head of the Government and performs the official and ceremonial functions pertaining to the Crown. In the event of the Governor's absence from Western Australia, the Lieutenant-Governor of the State is appointed Administrator.

> If there is no Lieutenant-Governor, it is customary for the Chief Justice of Western Australia to be appointed Administrator. The present Governor of Western Australia, Sir Francis Burt, KCMG, was appointed on 27 February 1990. He had been Acting Governor since June 1989 and had served as Lieutenant-Governor since 1977. Chief Justice David Malcolm was sworn in as Lieutenant-Governor on the same date. The last Colonial Governor of Western Australia, was Lieutenant-Colonel Sir Gerard Smith, KCMG, whose term of office expired on 29 June 1900 and the first Governor of the new State was Captain Sir Arthur Lawley, KCMG, who was sworn in on 1 May 1901.

The Federal The legislative power of the Commonwealth is vested in a Federal Parliament Parliament which consists of Her Majesty the Oueen (represented by the Governor-General), a Senate and a House of Representatives. Subject to the Constitution, the Federal Parliament is empowered to make laws concerning, among other things, defence, external affairs, customs and excise, trade and commerce with other countries and among the States, taxation, borrowing of money on public credit, currency and coinage, banking, insurance, navigation, fisheries, quarantine, posts and telegraphs, census and statistics, immigration, naturalisation and aliens, copyrights and trademarks, bankruptcy, marriage, divorce and matrimonial causes, social services, and conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State.

> The Constitution provides that, when a law of a State is inconsistent with the law of the Commonwealth, the Commonwealth law shall prevail and the State law shall, to the extent of the inconsistency, be invalid.

Government

The qualifications necessary for membership of the Federal Parliament and for voting at federal elections are described in *Year Book Australia*. Under the provisions of the *Commonwealth Electoral Act 1973*, which was proclaimed operative from 21 March 1973, the age qualification for enrolment, voting and candidature for federal parliamentary elections was lowered from 21 years to 18 years.

The payment of allowances to Senators and Members of the House of Representatives is provided for in the Constitution and a superannuation scheme is established under the provisions of the *Parliamentary Retiring Allowance Act 1984*.

The SenateThe Senate originally consisted of 36 members, 6 Senators being<br/>returned from each State. The Parliament is authorised by the<br/>Constitution to increase or decrease the number of members. By<br/>1948 the population had grown to the extent that a considerable<br/>enlargement of the Parliament was warranted. As a result, a<br/>*Representation Act* was passed in 1948 to provide for increased<br/>membership by raising from six to ten the number of Senators<br/>from each State. A further Representation Act was passed in 1983<br/>increasing the number of Senators for each State from ten to<br/>twelve. The counting of votes in elections for the Senate is one of<br/>proportional representation.

Members are elected on the basis of adult suffrage by the people of the State which they represent as provided by the *Commonwealth Electoral Act 1918*. Aborigines, although entitled to enrol, are not required to do so. Voting is compulsory for all enrolled persons in terms of an amendment of 1924 which operated for the first time at elections held on 14 November 1925.

| Member               | Political party | Year of retirement |
|----------------------|-----------------|--------------------|
| M. E. Beahan         | Labor           | 1996               |
| C. M. A. Chamarette  | Green           | 1999               |
| l. G. Campbell       | Liberal         | 1996               |
| Hon. P. F. S. Cook   | Labor           | 1999               |
| W. Crane             | Liberal         | 1996               |
| N. A. Crichton-Brown | Liberal         | 1996               |
| C. Ellison           | Liberal         | 1999               |
| C. Evans             | Labor           | 1999               |
| S. C. Knowles        | Liberal         | 1999               |
| D. Margetts          | Green           | 1999               |
| J. P. McKiernan      | Labor           | 1996               |
| J. H. Panizza        | Liberal         | 1996               |

#### TABLE 4.1 – WESTERN AUSTRALIAN MEMBERS OF THE SENATE MARCH 1993

Labor = Australian Labor Party. Liberal = Liberal Party of Australia. Green = The Greens (WA)

Source: Department of the Parliamentary Library, Parliament of Australia.

The term of office of a Senator is normally six years and commences on the first day of July following their election. One-half of the members retire at the end of every third year and are eligible for re-election.

The most recent elections for the House of Representatives and the Senate were held on 13 March 1993. The election was won by the Australian Labor Party, led by Paul Keating AC. Tables 4.1 and 4.2 show the Western Australian membership of the Senate and the House of Representatives following that election.

The House of Representatives State membership of the House of Representatives is on a population basis with the proviso that each State shall have at least five members. The Constitution further provides that the number of members of the House of Representatives shall be, as nearly as practicable, double the number of Senators. With the enlargement of the Senate from 36 to 60 members, the membership of the House of Representatives was increased, from the date of the 1949 elections, from 74 to 121, not including a member for the Australian Capital Territory, which achieved representation for the first time at this election, and a member for the Northern Territory, which had been represented since 1922.

Subsequent redistributions have increased the number of members of the House of Representatives in line with population growth. At the last election in March 1993, the following numbers of members of the House were elected: New South Wales 50; Victoria 38; Queensland 25; Western Australia 14; South Australia 12; Tasmania 5; plus the Australian Capital Territory 2 and the Northern Territory 1, making a total of 147 seats.

| Member             | Political party | Electorate |
|--------------------|-----------------|------------|
| Hon. W. F. Fatin   | Labor           | Brand      |
| Hon. G. Gear       | Labor           | Canning    |
| R. Evans           | Liberal         | Cowan      |
| A. C. Rocher       | Liberal         | Curtin     |
| G. D. Prosser      | Liberal         | Forrest    |
| Hon. J. S. Dawkins | Labor           | Fremantle  |
| G. Campbell        | Labor           | Kalgoorlie |
| P. A. Filing       | Liberal         | Moore      |
| C. W. Tuckey       | Liberal         | O'Connor   |
| J. Moylan          | Liberal         | Pearce     |
| S. Smith           | Labor           | Perth      |
| E. Cameron         | Liberal         | Stirling   |
| Hon. K. C. Beazley | Labor           | Swan       |
| D. Williams        | Liberal         | Tangney    |

#### TABLE 4.2 – WESTERN AUSTRALIAN MEMBERS OF THE HOUSE OF REPRESENTATIVES MARCH 1993

Labor = Australian Labor Party. Liberal = Liberal Party of Australia.

Source: Department of the Parliamentary Library, Parliament of Australia.

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## Hon. Richard Court, M.L.A. Premier of Western Australia

Richard Fairfax Court was born and educated in Western Australia and is the son of Sir Charles Court (Premier of Western Australia from 1974-1982) and the late Lady Rita Court.

Mr Court completed his matriculation at Hale School and graduated from the University of



Premier Richard Court, M.L.A. *Photograph*: Ministry of the Premier and Cabinet

Western Australia with a Bachelor of Economics degree in 1968. He spent a further year studying business management in the U.S.A.

On his return to Western Australia, Mr Court established and operated a number of businesses. He owned and managed retail food outlets before establishing Court Marine Pty Ltd, a company in which he was managing director.

Mr Court was first elected to parliament in 1982 as the member for Nedlands, a seat previously held by Sir Charles Court for 30 years.

In 1984 Mr Court joined the Liberal Party's front bench and in September 1987 was elected Deputy leader of the Parliamentary Liberal Party, a position he held until June 1990.

Mr Court held various portfolios in the shadow ministry, including Resource and Industrial Development; Mines; Aboriginal Affairs; the Goldfields and the North West.

In May 1992, Mr Court became Leader of the Opposition and took on the portfolios of Treasurer and Public Sector Management.

In February 1993, Mr Court was elected Premier of Western Australia. He holds the portfolios of Treasurer, Public Sector Management and Federal Affairs.

Source: Ministry of the Premier and Cabinet.

Members of the House of Representatives are elected for the duration of the Parliament — which is limited to three years — by the people of the electorate whom they represent. As provided by the *Commonwealth Electoral Act 1918*, enrolment for electors is the same as for the Senate. Voting is on the preferential system.

The Crown, represented by the Governor, and the Parliament, comprising a Legislative Council and a Legislative Assembly, constitute the legislature of Western Australia.

Executive government is based, as in the case of the Commonwealth, on the system which evolved in Great Britain in the eighteenth century and which is generally known as the 'cabinet' system. The cabinet consists of Ministers of the Crown chosen for the Ministry from members of Parliament belonging to the political party, or coalition of parties, which is in the majority in the Legislative Assembly. The Constitution requires that at least one of the Ministers be selected from members of the Legislative Council. In Western Australia, as in the other Australian States, the office of principal Minister is designated 'Premier'.

| Name of         | Political                   | Da   | te of assu | mption    |       | Duration      |      |
|-----------------|-----------------------------|------|------------|-----------|-------|---------------|------|
| Premier         | party                       | Year | Day        | Month     | Years | Months        | Days |
| Forrest         | (a)                         | 1890 | 29         | December  | 10    | 1             | 17   |
| Throssell       | (a)                         | 1901 | 15         | February  | _     | 3             | 12   |
| Leake           | (a)                         | 1901 | 27         | May       | _     | 5             | 25   |
| Morgans         | (a)                         | 1901 | 21         | November  | _     | 1             | 2    |
| .eake           | (a)                         | 1901 | 23         | December  | _     | 6             | 8    |
| ames            | (a)                         | 1902 | 1          | July      | 2     | 1             | 9    |
| Daglish         | Labor                       | 1904 | 10         | August    | 1     | _             | 15   |
| lason           | Liberal                     | 1905 | 25         | August    | _     | 8             | 12   |
| <i>l</i> oore   | Liberal                     | 1906 | 7          | May       | 4     | 4             | 9    |
| Vilson          | Liberal                     | 1910 | 16         | September | 1     | _             | 21   |
| caddan          | Labor                       | 1911 | 7          | October   | 4     | 9             | 20   |
| Vilson          | Liberal                     | 1916 | 27         | July      | _     | 11            | 1    |
| efroy           | Liberal                     | 1917 | 28         | June      | 1     | 9             | 20   |
| olebatch        | Liberal                     | 1919 | 17         | April     | _     | 1             | _    |
| /litchell       | National and C.P. coalition | 1919 | 17         | May       | 4     | 10            | 30   |
| ollier          | Labor                       | 1924 | 16         | April     | 6     | _             | 8    |
| fitchell        | National and C.P. coalition | 1930 | 24         | April     | 3     |               | _    |
| ollier          | Labor                       | 1933 | 24         | April     | 3     | 3             | 27   |
| Vilcock         | Labor                       | 1936 | 20         | August    | 8     | 11            | 11   |
| Vise            | Labor                       | 1945 | 31         | July      | 1     | 8             | 1    |
| <b>1</b> cLarty | L.C.L. and C.P. coalition   | 1947 | 1          | April     | 5     | 10            | 22   |
| lawke           | Labor                       | 1953 | 23         | February  | 6     | 1             | 10   |
| rand            | L.C.L. and C.P. coalition   | 1959 | 2          | April     | 11    | 11            | 1    |
| onkin           | Labor                       | 1971 | 3          | March     | 3     | 1             | 5    |
| Court, Sir C.   | Liberal and C.P. coalition  | 1974 | 8          | April     | 7     | 9             | 17   |
| )'Connor        | Liberal and C.P. coalition  | 1982 | 25         | January   | 1     | 1             |      |
| urke            | Labor                       | 1983 | 25         | February  | 5     | —             |      |
| owding          | Labor                       | 1988 | 25         | February  | 1     | 11            | 12   |
| awrence         | Labor                       | 1990 | 12         | February  | 3     | _             | 4    |
| Court, R.       | Liberal and C.P. coalition  | 1993 | 16         | February  | St    | ill in office |      |

### TABLE 4.3 - MINISTRIES FROM 1890

The State

Parliament

C.P. = Country Party (b); L.C.L. = Liberal and Country League (c); Labor = Australian Labor Party; Liberal = Liberal Party

(a) No specific party designation. (b) The name of the Party was changed to the National Country Party of Australia (W.A.) Inc. on 5 May 1975. (c) The name of the Party was changed to The Liberal Party of Australia (Western Australian Division) Incorporated on 15 July 1968.

Since 1890, when responsible government was granted to Western Australia, there have been thirty separate Ministries. No organised political party existed in the Colony until the formation of a Labour party in the 1890s. A Labour Ministry assumed office in 1904.

## TABLE 4.4 – WESTERN AUSTRALIAN STATE MINISTRY, MARCH 1993

| Minister   | Title of office  |
|--|--|
| Hon. R.F. Court, MLA, B Comm                     | Premier; Treasurer; Federal Affairs;<br>Public Sector Management   |
| Hon. H.J. Cowan, MLA                             | Deputy Premier; Commerce and Trade   |
| Hon. C.J. Barnett, MLA, MEc                      | Resources Development; Energy; Leader of the House in the Legislative Assembly                                   |
| Hon. M.G. House, MLA, JP                         | Primary Industry; Fisheries  |
| Hon. S.G.E. Cash, MLC, JP                        | Mines; Land; Assisting in Resource Development;<br>Leader of the Government in the Legislative Council           |
| Hon. E.J. Charlton, MLC                          | Transport  |
| Hon. N.F. Moore, MLC,<br>BA, Dip Ed              | Education, Employment and Training;<br>assisting in Commerce and Trade   |
| Hon. C.L. Edwardes, MLA<br>B Juris, LLB, BA      | Attorney-General; Women's Interests;<br>Parliamentary and Electoral Affairs                                      |
| Hon. G.M. Evans, MLC,<br>MBE, FCA                | Finance; Racing and Gaming;<br>assisting Treasurer   |
| Hon. D.J. Shave, MLA                             | Tourism; Housing; Sport and Recreation   |
| Hon. P.D. Omodei, MLA                            | Local Government; Water Resources  |
| Hon. P.G. Foss, MLC                              | Health; Arts; Consumer Affairs   |
| Hon. K.J. Minson, MLA, BDSc                      | Environment; Aboriginal Affairs;<br>Disability Services; assisting in Fisheries                                  |
| Hon. R.K. Nicholls, MLA                          | Community Development; Family; Seniors   |
| Hon. G.D. Kierath, MLA                           | Labour Relations; Works and Services;<br>Multicultural and Ethnic Affairs  |
| Hon. R.L. Wiese, MLA                             | Police; Emergency Services   |
| Hon. K.R. Lewis, MLA                             | Planning; Heritage; assisting in Transport   |
| Mr J.L. Bradshaw, MLA, MPS, JP                   | Parliamentary Secretary of Cabinet   |
| Mr R.G. Pike, MLC                                | Parliamentary Secretary of State with special<br>responsibility for Parliament,<br>Electoral and Federal Affairs |
| Mr F. C. Tubby, MLA,<br>B Ed, MACE, JP           | Parliamentary Secretary of State assisting in<br>Education, Employment and Training                              |
| Mr W.J. McNee, MLA                               | Parliamentary Secretary of State assisting in<br>Local Government and Water Resources                            |
| Mr J.G. Clarko, MLA,<br>AE, BA, Dip Ed, MACE, JP | Speaker  |
| Mr G.J. Strickland, MLA<br>B App Sc, Dip Ed      | Deputy Speaker   |
| Mr R.C. Bloffwitch, MLA                          | Government Whip  |

Source: Parliamentary Library, Parliament of Western Australia.

The *Constitution Act 1889* provided for a Ministry of five members. This number was increased by subsequent amendments to the Act to 17.

The right to vote at parliamentary elections was extended to women by the *Constitution Acts Amendment Act 1899* and membership of either House was provided for by the *Parliament (Qualification of Women) Act 1920.* 

The first woman member of any Australian Parliament was Mrs Edith Dircksey Cowan, OBE, who was elected to the Legislative Assembly in March 1921 as member for West Perth. Mrs A.F.G. (later Dame Florence) Cardell-Oliver, MLA for Subiaco became the first woman Cabinet Minister in Australia when she joined the McLarty Ministry in 1947.

Under the provisions of the Acts Amendment (Electoral Reform) Act 1987, which came into operation on 30 October 1987, three

| Electoral<br>Region   | Electoral<br>Districts  | Electoral<br>Region    | Electoral<br>Districts   |
|-----------------------|---|------------------------|--|
| North Metrop          | Cottesloe<br>Dianella<br>Floreat<br>Glendalough   |                        | Maylands<br>Morley<br>Roleystone<br>Swan Hills<br>Thornlie                                   |
|                       | Kingsley<br>Marangaroo<br>Marmion<br>Nedlands<br>Nollamarra<br>Perth<br>Scarborough<br>Wanneroo<br>Whitford | South-West             | Albany<br>Bunbury<br>Collie<br>Mandurah<br>Mitchell<br>Murray<br>Stirling<br>Vasse<br>Warren |
| South<br>Metropolitan | Applecross<br>Cockburn<br>Fremantle<br>Jandakot<br>Melville<br>Peel   | Agricultural           | Wellington<br>Avon<br>Geraldton<br>Greenough<br>Merredin<br>Moore                            |
|                       | Riverton<br>Rockingham<br>South Perth<br>Victoria Park  | Mining and<br>Pastoral | Roe<br>Wagin<br>Ashburton<br>Eyre  |
| East<br>Metropolitan  | Armadale<br>Belmont<br>Darling Range<br>Helena<br>Kenwick   |                        | Kalgoorlie<br>Kimberley<br>Northern Rivers<br>Pilbara  |

TABLE 4.5 – ELECTORAL REGIONS AND ELECTORAL DISTRICTS

Source: Western Australian Electoral Commission.

Electoral Distribution Commissioners were appointed to divide the State into 57 electoral districts — 34 comprising the Metropolitan Area (as described in the *Metropolitan Region Town Planning Scheme Act 1959*, as at 1 January 1987) and 23 the

| Name  | Political<br>party  | Electoral region  |
|---|---|---|
| T.G. Butler<br>S.G.E. Cash<br>K.M. Chance<br>E.J. Charlton<br>J. Cowdell<br>M. Criddle<br>C.M. Davenport<br>R.E. Davies<br>B. Donaldson<br>G.J. Edwards<br>G.M. Evans<br>P.G. Foss<br>N. Griffiths<br>C.E. Griffiths<br>S.J. Halden<br>T.R. Helm  | Labor<br>Liberal<br>Labor<br>National<br>Labor<br>National<br>Labor<br>Independent<br>Liberal<br>Labor<br>Liberal<br>Labor<br>Liberal<br>Labor<br>Liberal<br>Labor<br>Liberal<br>Labor<br>Labor | East Metropolitan<br>North Metropolitan<br>Agricultural<br>South-West<br>Agricultural<br>South Metropolitan<br>North Metropolitan<br>North Metropolitan<br>East Metropolitan<br>East Metropolitan<br>South Metropolitan<br>South Metropolitan<br>South Metropolitan<br>South Metropolitan<br>South Metropolitan   |
| T.R. Helm<br>B.J. House<br>R. Lightfoot<br>P.H. Lockyer<br>A. MacTiernan<br>M.S. Montgomery<br>N.F. Moore<br>M.W. Nevil<br>M. Nixon<br>M.G. Patterson<br>S.M. Piantadosi<br>R.G. Pike<br>B. Scott<br>J. Scott<br>J. Scott<br>T.G. Stephens<br>W.N. Stretch<br>R.J. Thomas<br>D.G. Tomlinson | Labor<br>Liberal<br>Liberal<br>Labor<br>National<br>Liberal<br>Labor<br>Liberal<br>Labor<br>Liberal<br>Liberal<br>Green<br>Labor<br>Labor<br>Labor<br>Labor<br>Liberal<br>Labor                 | Mining & Pastoral<br>South-West<br>North Metropolitan<br>Mining & Pastoral<br>East Metropolitan<br>South-West<br>Mining & Pastoral<br>Mining & Pastoral<br>Agricultural<br>South-West<br>North Metropolitan<br>North Metropolitan<br>South Metropolitan<br>South Metropolitan<br>Mining & Pastoral<br>South-West<br>South-West<br>South-West<br>East Metropolitan |
| D.W. Wenn   | Labor<br>SUMMARY  | South-West  |

#### TABLE 4.6 – THE HONOURABLE MEMBERS OF THE LEGISLATIVE COUNCIL MARCH 1993 (a)

The Liberal Party of Australia (Western Australian Division) Incorporated (Liberal) Australian Labor Party (Labor) National Party of Australia (National) Independent Green

15

14

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1

1

(a) All members elected at the state election on 6 February 1993 will take up their seats from 22 May 1993.

Source: Legislative Council, Parliament of Western Australia.

Government

| Name                           | Political party               | Electoral distric   |
|--------------------------------|-------------------------------|---------------------|
| R. A. Ainsworth                | National                      | Ro                  |
| Hon. C. J. Barnett             | Liberal                       | Cotteslo            |
| Hon. M. Barnett                | Labor                         | Rockinghar          |
| B. R. Blaikie                  | Liberal                       | Vass                |
| R. C. Bloffwitch               | Liberal                       | Geraldto            |
| M. F. Board                    | Liberal                       | Jandako             |
| . L. Bradshaw                  | Liberal                       | Wellingto           |
| Hon. E. F. Bridge              | Labor                         | Kimberle            |
| C. M. Brown                    | Labor                         | Morle               |
| N. M. Catania                  | Labor                         | Balcatt             |
| I. G. Clarko                   | Liberal                       | Marmio              |
| Dr E. Constable                | Independent                   | Florea              |
| Hon. R. F. Court               | Liberal                       | Nedland             |
| H. J. Cowan                    | National                      | Merredi             |
| E. J. Cunningham               | Labor                         | Marangaro           |
| I. H. D. Day                   | Liberal                       | Darling Řang        |
| Hon. C. L. Édwardes            | Liberal                       | Kingsle             |
| Dr J. M. Edwards               | Labor                         | Mayland             |
| Dr G. I. Gallop                | Labor                         | Victoria Par        |
| . Graham                       | Labor                         | Pilbaı              |
| Hon. J. F. Grill               | Labor                         | Eyı                 |
| Hon. E. K. Hallahan            | Labor                         | Armada              |
| Dr K, D. Hames                 | Liberal                       | Dianel              |
| Hon. Y. D. Henderson           | Labor                         | Thorn               |
| Hon. G. L. Hill                | Labor                         | Heler               |
| Hon. M. G. House               | National                      | Stirlin             |
| R. F. Johnson                  | Liberal                       | Whitfor             |
| Hon. G. D. Kierath             | Liberal                       | Riverto             |
| . C. Kobelke                   | Labor                         | Nollama             |
| Hon. Dr. C. M. Lawrence        | Labor                         | Glendaloug          |
| K. J. Leahy                    | Labor                         | Northern River      |
| Hon. K. R. Lewis               | Liberal                       | Applecros           |
| Hon. J. A. McGinty             | Labor                         | Fremant             |
| W. J. McNee                    | Liberal                       | Moor                |
| N. R. Marlborough              | Labor                         | Pe                  |
| A. D. Marshall                 | Liberal                       | Murra               |
| Hon. K. J. Minson              | Liberal                       | Greenoug            |
| Hon. R. K. Nicholls            | Liberal                       | Mandura             |
| Hon. P. D. Omodei              | Liberal                       | Warre               |
| I. F. Osborne                  | Liberal                       | Bunbur              |
| Hon. P. G. Pendal              | Liberal                       | South Pert          |
| K. A. R. Prince                | Liberal                       | Albar               |
| F. Riebeling                   | Labor                         | Ashburto            |
| E. S. Ripper                   | Labor                         | Belmoi              |
| Hon. D. J. Shave               | Liberal                       | Melvil              |
| Hon. D. L. Smith               | Labor                         | Mitche              |
| N. Smith                       | Liberal                       | Wannero             |
| G. J. Strickland               | Liberal                       | Scarboroug          |
| Hon. I. F. Taylor              | Labor                         | Kalgoor             |
| W. I. Thomas                   | Labor                         | Kalgoorl<br>Cockbur |
| M. W. Trenorden                | National                      | Ave                 |
| F. C. Tubby                    |                               | Roleystor           |
| Dr H. Turnbull                 | Liberal<br>National           |                     |
|                                |                               | Coll                |
| . Van De Klashorst             | Liberal                       | Swan Hil            |
| D. Warnock                     | Labor                         | Pert                |
| Dr J. Watson                   | Labor                         | Kenwic              |
| Hon. R. L. Wiese               | National                      | Wagi                |
|                                | SUMMARY                       |                     |
|                                | (Western Australian Division) |                     |
| Incorporated (Liberal)         |                               | 2                   |
| Australian Labor Party (Labor  |                               | 2                   |
| National Party of Australia (N | Jational)                     |                     |
| ndependent                     |                               |                     |

# TABLE 4.7 – MEMBERS OF THE LEGISLATIVE ASSEMBLYMARCH 1993

Source: Legislative Assembly, Parliament of Western Australia.

## Government

remainder of the State. These districts return one member each to the Legislative Assembly.

The State is also divided into six regions — three Metropolitan regions consisting of the Metropolitan electoral districts, a South-West region, an Agricultural region and a Mining and Pastoral region consisting of the electoral districts comprising the remainder of the State. The North Metropolitan Region and the South-West Region each return seven members to the Legislative Council, and the other electoral regions return five Council members.

The division process, was completed on 29 April 1988, when the final division was gazetted. This division applied to the election held in February 1989 and will apply to subsequent general elections for the Legislative Assembly.

A further provision of the Act which extends the terms of members of both Houses of Parliament to four years, commenced from the thirty-third Parliament.

## Elections

The State Parliament At the Western Australian election for the Legislative Council and the Legislative Assembly held on 6 February 1993, a Liberal/Country Party Coalition, led by Richard Court, MLA, was elected to office with a majority in the Legislative Assembly.

Legislation During 1992 During 1992 During 1992 During 1992 During the fourth session of the thirty-third Parliament, which lasted from 12 March 1992 to 3 December 1992, the Western Australian legislature enacted seventy-nine Public Statutes and dealt with sixty-three Bills which were introduced but not passed. The full text of the legislation enacted is contained in the volumes of The Acts of the Parliament of Western Australia.

#### Government Administration

Australian

Government

A comprehensive guide to the organisation and functions of the Australian Government is given in the Commonwealth Government Directory, including an outline of the activities of each Department of State together with similar information concerning Boards, Committees, Councils, Commissions and other Instrumentalities.

A list of Australian Government Departments, the principal matters dealt with by each Department, and details of the statutes administered by the relevant Federal Minister, are published from time to time in the Commonwealth of Australia Gazette.

State Government The Public Service of Western Australia operates under the provisions of the *Public Service Act 1978* and consists of a number of Departments established in accordance with the Act. The

establishment, abolition or alteration of Departments is subject to the approval of the Governor. Other parts of the State Public Service, normally referred to as Statutory Authorities or Instrumentalities, function under separate Acts, although they largely follow the conditions prescribed in the Public Service Act.

The Judicature The two major factors in the development of the Australian legal system have been its British origin and the Commonwealth Constitution of 1900. This Statute, an Act of the Imperial Parliament in London, limited the legislative power of State Parliaments in some respects and created a federal legislature. Since 1942, however, the Imperial Parliament can legislate for Australia only at Australia's request.

The sources of Australian law of today are, therefore, found in Commonwealth and State legislation, in some Imperial legislation, and in the common law. Independence of the judiciary is an essential part of the Australian legal system.

**State Representation** Western Australia has been represented in the United Kingdom by an Agent General since 1892, the first appointment to the post being that of Sir Malcolm Fraser. An Office is maintained at Western Australia House, 115 Strand, London, W.C.2.

The Agent General's Office acts as agent for the State Treasury and as a receiving agency for The Rural and Industries Bank of Western Australia. Western Australia's European Public Relations Office and its tourist officer for the United Kingdom and Europe also operate from Western Australia House.

The functions of the Office include the representation of all Government Departments which have business in Britain and Europe, the purchase of government stores and equipment, an information resource for migrants, the encouragement of overseas private investment in Western Australia, and the provision of various types of assistance to visitors from Western Australia.

The Agent General for Western Australia, is the personal representative in Britain of the State Premier. The State is also represented in Japan, an Office being maintained by the Western Australian Government at Sankaido Building, 9-13 Akasaka, 1-CHOME, Minato-Ku, Tokyo 107.

Travel centre managers of the Western Australian Tourism Commission also provide liaison on behalf of Government Departments which have business in other States and Territories of Australia as well as overseas.

### Government .

ConsularThere are currently 28 countries represented in Western AustraliaRepresentationby either

- a consular agent
- vice-consul
- consul
- consul-general
- or trade representative.

| Country                         | Address of representative  |
|---------------------------------|--|
| Austria                         | Mr Timothy A. Holmes, Honorary Consul,<br>8th floor, 95 St Georges Terrace,<br>Perth 6000                  |
| Belgium                         | Mr Lucien Baee, Honorary Consul,<br>16 St George's Terrace, Perth 6000                                     |
| Canada                          | Ms Jeannie Lyall, Honorary Consul,<br>11/111 St George's Terrace, Perth 6000                               |
| Chile,<br>Republic of           | Mr Leo Gatica-Evans, Honorary Consul<br>33 Grant Street, Cottesloe 6011                                    |
| Denmark                         | Mr Sven L. Jørgensen, Honorary Consul,<br>19 Philimore Street, Fremantle 6160                              |
| Finland                         | Mr Peter K. Howard, Honorary Consul,<br>1/85 MacLeod Road, Applecross 6153                                 |
| France                          | Dr Robert Pearce, Honorary Consul, 21/146 Mounts Bay Road, Perth 6000                                      |
| Germany, Federal<br>Republic of | Mr Alan E. Blanckensee, A.O.,<br>Honorary Consul, 8th Floor,<br>16 St George's Terrace, Perth 6000         |
| Greece                          | Mr Ioannis Raptakis, Consul,<br>16 St George's Terrace, Perth 6000   |
| Honduras,<br>Republic of        | Mrs Eugenia de Newmann,<br>Honorary Consul, 44 Troy Terrace,<br>Daglish 6008                               |
| Ireland                         | Mr George Michael Nolan,<br>Honorary Consul-General,<br>10 Lilika Road, City Beach 6015                    |
| Italy                           | Dr Barbara Bregato, Consul,<br>31 Labouchere Road, South Perth 6151  |
| Japan                           | Mr Kazuyoshi Yamaguchi, Consul<br>(Politics/Economics), 21st floor,<br>221 St George's Terrace, Perth 6000 |
| Malaysia                        | Mr Ayub Bin Haji Talib, Consul,<br>4th floor, 195 Adelaide Terrace,<br>Perth 6000                          |
| Malta                           | Dr Anthony V. Sciberras, Honorary Consul,<br>1 Old Perth Road, Bassendean 6054                             |
|                                 |  |

# TABLE 4.8 – OVERSEAS REPRESENTATION IN WESTERN AUSTRALIA

| Country                     | Address of representative   |
|-----------------------------|---|
| Nepal                       | Mrs H. L. Roberts,<br>Honorary Consul-General<br>2/16 Robinson Street, Nedlands 6009              |
| Norway                      | Mr Peter Geoffrey Lynn, Honorary Consul,<br>11 Cliff Street, Fremantle 6160                       |
| Pakistan                    | Mr Mohammad Ayub Khan,<br>Honorary Consul, 26 Carnarvon Crescent,<br>Mt. Lawley 6050              |
| Phillipines                 | Mr Peter John Augustin Remta,<br>Honorary Consul General,<br>45 Labouchere Road, South Perth 6151 |
| Portugal                    | Mr Manuel Zarcos Palma,<br>Honorary Consul 242 South Terrace,<br>Fremantle 6160                   |
| Seychelles                  | Mr Guy Francis Robert,<br>Honorary Consul-General,<br>23 Marri Crescent, Lesmurdie 6076           |
| Spain                       | Mr Angel Quintela, Honorary Consul,<br>1st floor, 181 St George's Terrace,<br>Perth 6000          |
| Sri Lanka                   | Major Wilton White, Honorary Consul, 2/66 Mill Point Road, South Perth 6151                       |
| Sweden                      | Mr Harry Morgan, Honorary Consul,<br>23 Walters Drive, Herdsman 6106                              |
| Switzerland                 | Mr Rudolf Abplanalp, Honorary Consul,<br>5 Marie Way, Kalamunda 6076                              |
| Thailand                    | Brigadier W.D. Jamieson,<br>Honorary Consul-General,<br>135 Victoria Avenue, Dalkeith 6009        |
| United Kingdom              | Mr John B. Noss, Consul-General,<br>26th floor, 77 St Georges Terrace,<br>Perth 6000              |
| United States<br>of America | Mr Emil M. Skodon, Consul-General,<br>16 St George's Terrace, Perth 6000                          |

#### TABLE 4.8 – OVERSEAS REPRESENTATION IN WESTERN AUSTRALIA (continued)

Source: Department of Foreign Affairs and Trade Consular List, 1 December 1992

The Local The function of local government in Western Australia is Government performed by a number of Councils (or, in special circumstances, System by Commissioners appointed by the Governor) exercising powers conferred by the Parliament of the State. Each of the Councils consists of members elected by local community and is responsible for the provision of many of the services necessary for the organisation and welfare of the community which it represents. Local Government On presentation of a petition signed by a prescribed minimum Districts number of electors, the Governor may, by Order, constitute any part of the State as a Town; constitute as a new Shire any part of an existing Shire; divide a Shire into two or more Shires; sever a portion of a district and annex the portion to an adjoining district, or constitute the portion as a new Town or Shire; divide a district into wards; or abolish a district and dissolve the local governing authority. In some cases the electors of a district have the right to demand that a poll be held on the question of boundary changes.

On the petition of the local authority concerned, the Governor may, by Order, declare to be a City any district which satisfies certain specified requirements. These requirements are that during the three years immediately preceding the declaration, it shall have maintained a population of not less than 30,000 persons if situated in the metropolitan area as declared for the purposes of the Act, or not less than 20,000 persons if situated outside that area; and have maintained a gross revenue of \$200,000 for each of the three years.

In addition, the district must be clearly distinguishable as a centre of population having a distinct civic centre with adequate halls and cultural facilities, and must have sufficient residential, commercial, and industrial centres to justify its declaration as a separate city. There are now 19 cities, 10 towns and 109 shires in Western Australia.

The *Local Government Act 1960* establishes a Local Government Boundaries Commission of three members. The Minister may refer to the Commission any question concerning the constitution or alteration of the constitution of local government districts. Every case where authorities are unable to agree on a matter of amalgamation or severance of territory must be referred to the Commission.

The boundaries of local government districts as they existed at 31 March 1993, are delineated on the maps of the State in the Appendix.

*Constitution and Electoral Provisions* The provisions of the Local Government Act relating to the composition of a Council require that the minimum number of members be five with no limit set for the maximum number.

> Provision is made for local government elections to be held on the first Saturday in May of each year but in specified circumstances the Governor may, by proclamation, appoint a Saturday in May, later than the first Saturday, to be the election date. Voting is not compulsory. Membership of a Council is elective in all cases, the qualified electors being adult Australian citizens, resident in the district and enrolled for the Legislative Assembly, or who own or occupy rateable land in the district.

> The preferential system of voting is used and representation is generally on the basis of wards into which the district may be divided. Each elector is entitled to one vote. Subject to

disqualification on certain specified grounds, all electors, other than corporation nominees, are eligible for election to the Council of the district whether as Mayor, President or Councillor.

The term of office of Mayor or President is three years if elected by the electors of the district, or one year if elected by the Council. Councillors are elected for a term of three years, as near as practicable to one-third of their number retiring each year. On the expiration of their term of office, all members, including the Mayor and the President, are eligible for re-election if not subject to any of the disqualifications contained in the Act.

- The functions and powers of local authorities are extremely Functions of Local Authorities diverse in character. They are prescribed in detail in the Local Government Act. Some of the more important of them are those relating to hospitals and nursing services, kindergartens, hostels for school children, community centres, dental clinics, infant and maternal health centres, day nurseries, control of dogs, jetties, swimming pools, sanitation and disposal of refuse, fire prevention, eradication of noxious weeds and vermin. aerodromes, abattoirs, quarries, pounds and cemeteries. Under the provisions of the Health Act local authorities are responsible for certain aspects of health administration.
- *Financial Provisions* Local government authorities have four major sources of finance. They are moneys received from rates, loans, government grants and personal income tax entitlements. Financial powers of local authorities, although derived mainly from the Local Government Act, are also provided by other Statutes, including the Health Act, the Fire Brigades Act, the Cemeteries Act, and the Library Board of Western Australia Act.
- *Rates* The general rate for a local government district in any year is determined by dividing the sum required to make up the difference between anticipated expenditure and estimated revenue from sources other than rates for that year by the total value of rateable property in the district.

A Council may impose a rate which would yield less than the amount required to balance its budget, subject to approval by the Minister. In assessing the value of rateable property, every local authority must adopt valuations made by the Valuer-General under the provisions of the *Valuation of Land Act 1978*. The *Land Valuation Tribunals Act 1978* provides for the constitution of Land Valuation Tribunals, to which appeals may be made on matters concerning valuations of property.

Valuations may be on the basis of either 'unimproved value' or 'gross rental value'. The unimproved value generally represents the price which the rated land might be expected to realise if sold on the open market and, as the term implies, excludes any improvements. The gross rental value is an estimate of the gross rental value of the property including improvements. Government

Generally, City Councils and Town Councils are required to assess the general rate on the basis of gross rental value, and Shire Councils on unimproved value. Councils may charge a penalty on unpaid rates or offer a discount for early payment. The prescribed maximum percentage for penalty or discount is currently 10 per cent.

Loans Local authorities are authorised to raise loans for works and undertakings and for the liquidation of existing loan debts. A Council may, with the written consent of the Minister, obtain advances from a bank for a budget deficiency, for the installation of sewerage connections and septic tanks, and for other work approved by the Governor.

> Certain of the works and undertakings for which loan moneys may be used, are specified in the Local Government Act. They include the construction of streets, roads and bridges, sewers, drains and water works; the erection or purchase of electric lighting plant, gas works and stone quarries; the provision of hostels for school children, libraries and other recreational facilities; the construction of civic and other buildings; and the purchase of land, materials and equipment. Where a particular work or undertaking is not specified in the Act, the Governor may approve of it as a project for which money may be borrowed.

- *Government Grants* Government grants constitute an important source of revenue for local government authorities. These are mainly specific purpose payments for road works.
- Personal Income Tax Entitlements The Local Government (Personal Income Tax Sharing) Act 1976 requires each State to allocate not less than 30 per cent of the funds among local government authorities on a population basis, but account may also be taken of the area of the authority, population density or any other matter agreed upon between the Commonwealth and the State. The remaining funds are to be allocated having regard to the special needs and disabilities of local authorities.
- *General* The financial transactions of local government authorities are subject to annual audit, either by an auditor (or auditors) appointed by the Council or by the Auditor-General or persons appointed by them. To qualify for the office of auditor, a person must be a member of a specified institute or society of accountants and be registered as an auditor under the Companies Act. Appointment is for a term not exceeding three years, at the end of which time the holder of the office is eligible for reappointment. The financial year for all Councils ends on 30 June.
- **Statistical Divisions** The local government districts are used as the basis of presentation of data derived not only from the population census but also from many of the regular statistical collections. Information presented in this way is valuable when considering

activities in particular local government areas but is often more detailed than is required for a broader geographical assessment. For this reason, the local government districts are combined into statistical divisions which provide significant areas for the publication of statistics in a convenient summary form.

### Royal Commission into Commercial Activities of Government and Other Matters

by David Black, Associate Professor, Curtin University

The Royal Commission into Commercial Activities of Government and other matters, popularly referred to as the WA Inc. Royal Commission, provided the citizens of Western Australia with the most comprehensive inquiry and report of its kind ever undertaken.

Foreshadowed by an announcement by the Premier, Dr Carmen Lawrence, on 19 November 1990 the inquiry was formally initiated on 8 January 1991 when the Governor of Western Australia, Sir Francis Burt, issued a Commission to Justice Geoffrey Alexander Kennedy of the Supreme Court of Western Australia, Sir Ronald Darling Wilson, formerly of the High Court of Australia, and Mr Peter Frederick Brinsden, retired Judge of the Supreme Court of Western Australia.

The Three Royal Commissioners were to inquire and report on whether there had been:

corruption; illegal conduct; or improper conduct

by any person or corporation in the affairs, investment decision and business dealings of the Government of Western Australia or its agencies, instrumentalities and corporations in respect of twelve matters listed in an accompanying schedule and dating as far back as 1977 in the case of financial assistance by government to Bunbury Foods Proprietary Ltd.

The terms of reference included inter alia issues relating to:

the Rothwells merchant bank; the Kwinana petrochemical complex; the purchase of Fremantle Gas and Coke Co. by SECWA in 1986; the sale of the Midland Abattoir site in 1986; sales agreements for the purchase of natural gas from the North West Shelf Joint Venturers; the Burswood Island Casino; the Teachers Credit Society and the Swan Building Society.

Inquiries were also to be conducted into matters listed in a second schedule relating to allegations of bribery concerning planning decisions of the Stirling City Council for Observation City and the adequacy of the police investigation therein.

On each of the issues the Commissioners were to report whether

"any matter should be referred to an appropriate authority with a view to the institution of criminal proceedings"

or whether

"changes in the law of the State, or in administrative or decision-making procedures (were) necessary or desirable in the public interest".

### Government

Eight solicitors and barristers were appointed to assist the Commission with Mr David Wicks acting as principal Solicitor to the Commission, and a maximum of 120 staff were employed including consultants. Hearing commenced on 12 March 1991, initially before all three Commissioners but from December 1991 individual Commissioners sat separately to consider particular terms of reference.

In all there were 525 separate witnesses including 4 former Premiers, 17 other Ministers of departments and many others who had served as chairpersons or managers of government instrumentalities, boards and commissions; leave was granted to 130 legal representatives to appear before the Commission.

A total of 1,100,000 documents from external sources were processed and staff arranged the optical scanning of 52,000 pages of transcript and processed more than 49,000 pages of Commission transcript and 4,500 Commission exhibits. The total cost of the Royal Commission to 30 September 1992 was \$30,338,323.

After various extensions of time the final report was presented in two Parts - Part One delivered to the Governor Sir Francis Burt on 17 October 1992, dealt with the specific terms of reference and Part 2 delivered on 12 November 1992, addressed the need for certain changes to both the law and various administrative decision making procedures.

In addition a confidential report was provided for referral to the Independent Public Prosecutor.

In December 1992 the Government announced its intention to establish a Commission on Government pursuant to recommendations included in Part Two of the Royal Commission report and expressions of interest were sought from persons interested in appointment to the position of Chairman or as one of four part-time Commissioners.



The Royal Commission findings being presented to Sir Francis Burt (left) by (left to right) Sir Ronald Wilson, formerly of the Australian High Court; Justice Geoffrey Kennedy, of the W.A. Supreme Court; and Mr Peter Brinsden retired W.A. Supreme Court Judge.

Photograph: Courtesy The West Australian

# POPULATION

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# Chapter 5

# **POPULATION**

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### Chapter 5

# POPULATION

### Population

The State of Western Australia, although comprising almost one third of the total area of Australia, contains only about one tenth of the population.

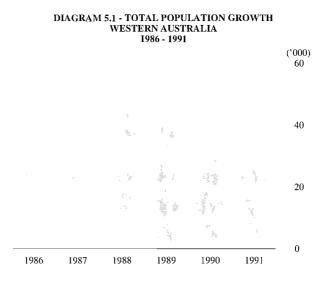
At the end of 1829, the year of establishment of the Colony, there were 1,000 non-Aboriginal persons in Western Australia. According to early historians, the number of Aborigines in the State at colonisation was estimated to be between 50,000 to 60,000.

Progress in the early years was slow, and in 1849 the population non-Aboriginal was still less than 5,000. Transportation of convicts began in the following year, which resulted in some acceleration, but it was not until the discovery of gold in the Kimberley in 1885, and the rich finds at Coolgardie in 1892 and Kalgoorlie in 1893, that any marked increase took place. This development was so rapid that, in the last decade of the century, the non-Aboriginal population was almost quadrupled, from 48,500 at the end of 1890 to 180,000 in 1900, representing an average annual rate of increase of 14.0 per cent.

|                       |                      |            |                            | Western         | Western Australia     |  |  |
|-----------------------|----------------------|------------|----------------------------|-----------------|-----------------------|--|--|
| Year ended<br>30 June | Western<br>Australia | Australia  | Proportion<br>of Australia | Sex<br>ratio(a) | Annual<br>growth rate |  |  |
|                       | persons              | persons    | per cent                   |                 | per cent              |  |  |
| 1971                  | 1,053,834            | 13,067,265 | 8.06                       | 104.83          | 6.30                  |  |  |
| 1976                  | 1,178,342            | 14,033,083 | 8.40                       | 103.73          | 2.26                  |  |  |
| 1981                  | 1,300,056            | 14,923,260 | 8.71                       | 102.25          | 1.99                  |  |  |
| 1986                  | 1,459,019            | 16,018,350 | 9.11                       | 101.83          | 2.33                  |  |  |
| 1989r                 | 1,576,417            | 16,803,060 | 9.38                       | 101.61          | 2.61                  |  |  |
| 1990r                 | 1,609,541            | 17,044,650 | 9.44                       | 101.47          | 2.10                  |  |  |
| 1991p                 | 1,636,783            | 17,292,040 | 9.47                       | 101.18          | 1.69                  |  |  |
| 1992p                 | 1,662,777            | 17,528,982 | 9.49                       | 101.02          | 1.59                  |  |  |

#### TABLE 5.1 – ESTIMATED RESIDENT POPULATION: WESTERN AUSTRALIA AND AUSTRALIA References: Catalogue Nos. 3101.0, 3201.0

(a) Number of males per 100 females.



That spectacular rate of growth has never been approached in the present century, but the average annual rate of increase of Western Australia's population from the Census of 1901 to June 1991, 1.9 per cent, has been higher than that of any other State and of Australia as a whole, 1.5 per cent.

In the decade from 30 June 1981 to 30 June 1991, the State's average annual rate of increase has been 2.3 per cent compared with a national figure of 1.5 per cent.

Estimates of The conceptual basis for population estimation in Australia changed in June 1981. Estimates since that date, together with revisions back to June 1971, have been made on the basis of the State of usual residence of persons. Census date estimates are derived by adjusting census count, place of usual residence data for under-enumeration and adding residents who are temporarily overseas on census night.

For dates other than those of the periodic censuses of population, estimates are based on records of births and deaths and movements of population interstate and overseas. Estimates of the population of Australia and of each of the States and Territories are prepared by the Australian Statistician at 31 March, 30 June, 30 September and 31 December in each year. As the available records of interstate movement are incomplete, these intercensal estimates are approximate. They are revised when the results of the next census become known.

Further information on estimated resident population is contained in the publication Population Estimates: An outline of the New Conceptual Basis of ABS Population Estimates (Catalogue No. 3216.0) issued by the Australian Statistician, Canberra.

### Characteristics of the Population

Age

Religion and

Aborigines and

Torres Strait

Islanders

Birthplace

Table 5.2 shows the numbers and proportions of the estimated resident population of Western Australia by age and sex, at June 1992.

### TABLE 5.2 – ESTIMATED RESIDENT POPULATION IN SELECTED AGE GROUPS AT 30 JUNE 1992p Reference: Catalogue No. 3101.0

| Age group   | Numbe   | Number in each age group |           |       | Per cent |         |
|-------------|---------|--------------------------|-----------|-------|----------|---------|
| (years)     | Males   | Females                  | Persons   | Males | Females  | Persons |
| 0 - 4       | 65,466  | 62,261                   | 127,727   | 7.8   | 7.5      | 7.7     |
| 5 – 9       | 67,172  | 63,700                   | 130,872   | 8.0   | 7.7      | 7.9     |
| 10 - 14     | 64,664  | 61,009                   | 125,673   | 7.7   | 4.8      | 7.6     |
| 15 – 19     | 64,918  | 62,217                   | 127,135   | 7.8   | 7.5      | 7.6     |
| 20 - 24     | 69,499  | 67,357                   | 136,856   | 8.3   | 8.1      | 8.2     |
| 25 – 29     | 66,927  | 66,178                   | 133,105   | 8.0   | 8.0      | 8.0     |
| 30 - 34     | 70,532  | 70,187                   | 140,719   | 8.4   | 8.5      | 8.5     |
| 35 - 39     | 67,461  | 67,704                   | 135,165   | 8.1   | 8.1      | 8.1     |
| 40 - 44     | 65,891  | 62,751                   | 128,642   | 7.9   | 7.6      | 7.7     |
| 45 - 49     | 54,117  | 49,445                   | 103,562   | 6.5   | 6.0      | 6.2     |
| 50 - 54     | 42,180  | 39,256                   | 81,436    | 5.0   | 4.7      | 4.9     |
| 55 – 59     | 33,870  | 32,660                   | 66,530    | 4.0   | 3.9      | 4.0     |
| 60 - 64     | 31,506  | 30,993                   | 62,499    | 3.8   | 3.7      | 3.8     |
| 65 - 69     | 27,168  | 28,278                   | 55,446    | 3.2   | 3.4      | 3.3     |
| 70 and over | 44,229  | 63,181                   | 107,410   | 5.3   | 7.6      | 6.5     |
| Total       | 835,600 | 827,117                  | 1,662,777 | 100.0 | 100.0    | 100.0   |

The religion and birthplace of the population, as recorded at the censuses of 1981, 1986 and 1991 are shown in tables 5.3 and 5.4. The Census and Statistics Act 1905 provides that there shall be no penalty for failure to answer the question on religion, and a statement to this effect is contained in the census schedule.

The 1991 Census of Population and Housing counted 41,779 Aborigines and Torres Strait Islanders in Western Australia compared with 37,789 in 1986. The 1991 figure represented 2.6 per cent of all persons counted in the State. Table 5.5 shows the age distribution of Aborigines and Torres Strait Islanders at 30 June 1981 and 1986, and 6 August 1991. At 6 August 1991, 61.4 per cent were less than 25 years of age and 3.0 per cent were 65 years of age or older. Equivalent figures for the total State population were 39.4 per cent and 9.8 per cent respectively. There were relatively fewer Aborigines and Torres Strait Islanders in each age group above 20-24 years than for the total State population.

### Population -

|                        | 30 June     | 30 June 1981 |         | 30 June 1986 |         | 6 August 1991 |  |
|------------------------|-------------|--------------|---------|--------------|---------|---------------|--|
| Religion               | <i>'000</i> | %            | '000    | %            | '000    | %             |  |
| Christian—             |             |              |         |              |         |               |  |
| Anglican               | 375.8       | 29.5         | 371.3   | 26.4         | 418.8   | 26.4          |  |
| Baptist                | 15.9        | 1.2          | 16.9    | 1.2          | 25.9    | 1.6           |  |
| Catholic               | 316.3       | 24.8         | 347.7   | 24.7         | 408.6   | 25.7          |  |
| Churches of Christ     | 14.2        | 1.1          | 14.4    | 1.0          | 13.3    | 0.8           |  |
| Methodist              | 51.2        | 4.0          | (a)     | _            | (a)     | —             |  |
| Presbyterian           | 32.0        | 2.5          | 31.6    | 2.2          | 48.3    | 3.0           |  |
| Uniting                | (a)         |              | 82.9    | 5.9          | 93.2    | 5.9           |  |
| Other                  | 131.6       | 10.3         | 113.3   | 8.0          | 98.8    | 6.2           |  |
| Total Christian        | 937.1       | 73.6         | 978.0   | 69.5         | 1106.9  | 69.7          |  |
| Other—                 |             |              |         |              |         |               |  |
| Non-Christian          | 11.6        | 0.9          | 23.0    | 1.6          | 33.5    | 2.1           |  |
| Inadequately described | 8.0         | 0.6          | 6.0     | 0.4          | 6.1     | 0.4           |  |
| No religion            | 172.1       | 13.5         | 235.3   | 16.7         | 270.9   | 17.1          |  |
| Not stated             | 144.8       | 11.3         | 164.3   | 11.7         | 169.7   | 10.7          |  |
| Total Other            | 336.5       | 26.3         | 428.6   | 30.4         | 480.2   | 30.3          |  |
| Total                  | 1,273.6     | 100.0        | 1,406.9 | 100.0        | 1,586.8 | 100.0         |  |

### TABLE 5.3 - RELIGION OF THE POPULATION, CENSUS COUNTS ('000 persons)

### TABLE 5.4 – BIRTHPLACE OF THE POPULATION (a) CENSUS COUNTS ('000 persons)

| Birthplace                  | 30 June<br>1981 | 30 June<br>1986 | 6 August<br>1991 |
|-----------------------------|-----------------|-----------------|------------------|
| Main English speaking count | ries—           |                 |                  |
| Australia                   | 911.0           | 997.8           | 1,097.5          |
| Ireland                     | 6.5             | 6.8             | 9.5              |
| New Zealand                 | 18.5            | 25.2            | 35.4             |
| South Africa                | 4.2             | 6.3             | 9.4              |
| United Kingdom              | 179.7           | 187.2           | 206.9            |
| United States of America    | 4.1             | 5.1             | 5.8              |
| Total                       | 1,124.0         | 1,228.4         | 1,364.5          |
| Other Countries—            |                 |                 |                  |
| Germany                     | 8.1             | 9.5             | 10.2             |
| Greece                      | 4.3             | 4.0             | 3.5              |
| India                       | 10.1            | 10.6            | 11.6             |
| Italy                       | 29.2            | 27.8            | 27.0             |
| Malaysia                    | 5.4             | 8.7             | 16.1             |
| Netherlands                 | 11.3            | 11.6            | 11.7             |
| Poland                      | 5.0             | 6.5             | 7.2              |
| Vietnam                     | 2.8             | 5.9             | 8.2              |
| Yugoslavia                  | 11.0            | 11.2            | 12.6             |
| Other                       | 48.2            | 60.1            | 83.7             |
| Total                       | 135.4           | 155.9           | 191.8            |
| Total (a)                   | 1,273.6         | 1,406.9         | 1,586.8          |

(a) Includes those born at sea and not stated.

| Age last birthday<br>(years) | 30 June<br>1981 | 30 June<br>1986 | 6 August<br>1991 |
|------------------------------|-----------------|-----------------|------------------|
| 0 - 4                        | 4,108           | 5,349           | 6,488            |
| 5 – 9                        | 4,580           | 4,702           | 5,573            |
| 10 - 14                      | 4,616           | 4,866           | 4,934            |
| 15 – 19                      | 3,827           | 4,712           | 4,383            |
| 20 - 24                      | 3,089           | 4,098           | 4,280            |
| 25 – 29                      | 2,367           | 3,182           | 3,698            |
| 30 - 34                      | 1,772           | 2,472           | 3,042            |
| 35 – 39                      | 1,421           | 1,933           | 2,389            |
| 40 - 44                      | 1,259           | 1,499           | 1,822            |
| 45 – 49                      | 1,099           | 1,193           | 1,277            |
| 50 - 54                      | 910             | 1,025           | 1,064            |
| 55 – 59                      | 575             | 800             | 836              |
| 60 - 64                      | 590             | 615             | 721              |
| 65 - 69                      | 478             | 523             | 474              |
| 70 and over                  | 666             | 818             | 799              |
| Total                        | 31,351          | 37,789          | 41,779           |

#### TABLE 5.5 – ABORIGINES AND TORRES STRAIT ISLANDERS AGE DISTRIBUTION, CENSUS COUNTS (persons)

#### Population in Statistical Local Areas

Table 5.6 shows census counts for persons in Statistical Local Areas. The names and designations are as they existed at 6 August 1991. The Cities of Fremantle, Perth and Stirling are comprised of a number of Statistical Local Areas. Statistical Local Areas are marked (C) for City, (T) for Town or (S) for Shire.

# Vital Statistics

Registration of births, deaths and marriages in Western Australia is compulsory. Particulars reported to District Registrars are sent to the Registrar General at Perth, where a central registry is maintained. Local registers are kept at each district office.

Births are required to be registered within 60 days of the event, and a fetal death (stillbirth) must be registered both as a birth and a death. Deaths are required to be registered within 14 days. Marriage certificates must be lodged for registration within 14 days of the date of marriage. Statistics of births, deaths and marriages are prepared from registration documents.

### Population .

| TABLE 5.6 – PERSONS IN STATISTICAL LOCAL AREAS |
|--|
| CENSUS COUNTS, 6 AUGUST 1991                   |
| Reference : Catalogue No. 2730.5               |

| Reference | : | Catalogue | No. | 2730.5 |
|-----------|---|-----------|-----|--------|
|-----------|---|-----------|-----|--------|

| Area Censu                             | s Count | Area                        | Census Count | <u>Area</u> Ce                        | ensus Count         |
|--|---------|-----------------------------|--------------|---------------------------------------|---------------------|
| Albany (S)                             | 11,186  | Geraldton (C)               | 20,587       | Perth (C) (a)—                        |                     |
| Albany (T)                             | 13,598  | Gingin (S)                  | 2,712        | Inner                                 | 2,027               |
| Armadale (C)                           | 46,868  | Gnowangerup (S)             | 1,820        | North                                 | 19,753              |
| Ashburton (S)                          | 8,499   | Goomalling (S)              | 1,084        | Outer                                 | 14,259              |
| Augusta-Margaret River (S)             | 5,889   | Gosnells (Č)                | 69,560       | South                                 | 24,432              |
| Bassendean (T)                         | 13,144  | Greenough (S)               | 7,652        | Wembley-Coastal                       | 20,046              |
| Bayswater (C)                          | 44,010  | Halls Creek (S)             | 3,029        | Total                                 | 80,517              |
| Belmont (C)                            | 26,875  | Harvey (S)                  | 12,394       | Pingelly (S)                          | 1,171               |
| Beverley (S)                           | 1,436   | Irwin (S)                   | 2,115        | Plantagenet (S)                       | 3,964               |
| Boddington (S)                         | 1,416   | Jerramungup (S)             | 1,379        | Port Hedland (T)                      | 12,599              |
| Boyup Brook (S)                        | 1,665   | Kalamunda (S)               | 45,898       | Quairading (S)                        | 1,150               |
| Bridgetown-Greenbushes (S)             | ) 3,713 | Kalgoorlie-Boulder (C)      | 26,079       | Ravensthorpe (S)                      | 1,374               |
| Brookton (S)                           | 1,018   | Katanning (S)               | 4,617        | Rockingham (C)                        | 41,890              |
| Broome (S)                             | 11,152  | Kellerberrin (S)            | 1,333        | Roebourne (S)                         | 17,291              |
| Broomehill (S)                         | 503     | Kent (S)                    | 864          | Sandstone (S)                         | 347                 |
| Bruce Rock (S)                         | 1,167   | Kojonup (S)                 | 2,228        | Serpentine-Jarrahdale (S              | 8,048               |
| Bunbury (C)                            | 25,657  | Kondinin (S)                | 1,086        | Shark Bay (S)                         | 1,615               |
| Busselton (S)                          | 13,528  | Koorda (S)                  | 613          | South Perth (C)                       | 34,279              |
| Canning (C)                            | 65,967  | Kulin (S)                   | 1,062        | Stirling (C) (a)—                     | ),                  |
| Capel (S)                              | 4,931   | Kwinana (T)                 | 17,278       | Central                               | 99,436              |
| Carnamah (S)                           | 1,155   | Lake Grace (S)              | 1,804        | West                                  | 53,029              |
| Carnarvon (S)                          | 9,046   | Laverton (S)                | 1,848        | South-Eastern                         | 20,266              |
| Chapman Valley (S)                     | 782     | Leonora (S)                 | 2,903        | Total                                 | 172,731             |
| Chittering (S)                         | 1,920   | Mandurah (C)                | 26,838       | Subiaco (C)                           | 15,107              |
| Claremont (T)                          | 8,879   | Manjimup (S)                | 9,764        | Swan (S)                              | 53,107              |
| Cockburn (C)                           | 50,380  | Meekatharra (S)             | 2,184        | Tambellup (S)                         | 726                 |
| Collie (S)                             | 9,058   | Melville (C)                | 84,838       | Tammin (S)                            | 489                 |
| Coolgardie (S)                         | 5,615   | Menzies (S)                 | 303          | Three Springs (S)                     | 820                 |
| Coorow (S)                             | 1,536   | Merredin (S)                | 3,830        | Toodyay (S)                           | 2.461               |
| Corrigin (S)                           | 1,384   | Mingenew (S)                | 624          | Trayning (S)                          | 480                 |
| Cottesloe (T)                          | 7,270   | Moora (S)                   | 2,672        | Upper Gascoyne (S)                    | 343                 |
| Cranbrook (S)                          | 1,129   | Morawa (S)                  | 1,007        | Victoria Plains (S)                   | 1,087               |
| Cuballing (S)                          | 722     | Mosman Park (T)             | 7,296        | Wagin (S)                             | 1,940               |
| Cue (S)                                | 860     | Mount Magnet (S)            | 1,161        | Wandering (S)                         | 414                 |
| Cunderdin (S)                          | 1,389   | Mount Marshall (S)          | 739          | Wanneroo (C)                          | 167,873             |
| Dalwallinu (S)                         | 1,579   | Mukinbudin (S)              | 681          | Waroona (S)                           | 3,040               |
| Dandaragan (S)                         | 2,371   | Mullewa (S)                 | 1,396        | West Arthur (S)                       | 976                 |
| Dardanup (S)                           | 5,037   | Mundaring (S)               | 29,283       | Westonia (S)                          | 282                 |
| Denmark (S)                            | 3,132   | Murchison (S)               | 180          | Wickepin (S)                          | 923                 |
| Derby-West Kimberley (S)               | 7,720   | Murray (S)                  | 8,171        | Williams (S)                          | 1,008               |
| Donnybrook-Balingup (S)                | 3,844   | Nannup (S)                  | 1,084        | Wiluna (S)                            | 1,854               |
| Dowerin (S)                            | 886     | Narembeen (S)               | 1,004        | Wongan-Ballidu (S)                    | 1,688               |
| Dumbleyung (S)                         | 856     | Narrogin (S)                | 865          | Wongan-Danidu (3)<br>Woodanilling (S) | 391                 |
| Dundas (S)                             | 1,838   | Narrogin (T)                | 4,638        | Wyalkatchem (S)                       | 707                 |
|  | 6,443   |                             | 20,409       |                                       |                     |
| East Fremantle (T)<br>East Pilbara (S) | 10,227  | Nedlands (C)<br>Northam (S) | 20,409       | Wyndham-East Kimberl<br>Yalgoo (S)    | ey (5) 7,712<br>679 |
|  | 10,227  | Northam (T)                 | 6,560        | Yilgarn (S)                           | 2,204               |
| Esperance (S)                          |         |                             | 3,546        | 0                                     | ,                   |
| Exmouth (S)                            | 3,823   | Northampton (S)             |              | York (S)                              | 2,500               |
| Fremantle (C) (a)—                     | 784     | Nungarin (S)                | 298          |                                       |                     |
| Inner<br>Bomaindor                     |         | Peppermint Grove (S)        | 1,465        | Total (b)                             | 1,586,825           |
| Remainder<br>Tatal                     | 23,050  | Perenjori (S)               | 772          |                                       |                     |
| Total                                  | 23,834  |                             |              |                                       |                     |

(a) Cities of Fremantle, Perth and Stirling are comprised of a number of statistical local areas. (b) Includes Off-shore and Migratory.

#### Births

Table 5.7 shows that although there were more males than females born in each of the years included, the sex ratio (number of male live births per 100 female live births) tends to fluctuate and the movement shown does not necessarily indicate a trend.

|                      | 1989   | 1990   | 1991   |
|----------------------|--------|--------|--------|
| Births (b)—          |        |        |        |
| Males                | 12,783 | 13,082 | 12,959 |
| Females              | 12,268 | 12,274 | 12,458 |
| Persons              | 25,051 | 25,356 | 25,417 |
| Sex ratio (c)        | 104.2  | 106.6  | 104.0  |
| Crude birth rate (d) | 15.7   | 15.5   | 15.5   |

### TABLE 5.7 – BIRTHS REGISTERED (a)Reference: Catalogue No. 3301.0

(a) Figures relate to state of usual residence of mother. (b) Includes ex-nuptial births. (c) Number of male live births per 100 female live births. (d) Number of live births registered during the calender year per 1,000 of mean population.

| Age of mother (years)   | 1989   | 1990  | 1991   |
|---|--|---|--|
|   | TOTAL BIRTHS (b  | )   |  |
| Under 20<br>20 – 24<br>25 – 29<br>30 – 34<br>35 – 39<br>40 – 44<br>45 and over<br>Not stated<br>Total | 1,441<br>5,272<br>9,648<br>6,445<br>1,972<br>256<br>11<br>6<br><b>25,051</b> | 1,580<br>5,247<br>9,293<br>6,794<br>2,118<br>309<br>12<br>3<br>25,356 | 1,540<br>5,362<br>9,129<br>6,790<br>2,217<br>332<br>8<br>39<br><b>25,417</b> |
|   | EX-NUPTIAL BIRTH   | IS  |  |
| Under 20<br>20 – 24<br>25 – 29<br>30 – 34<br>35 – 39<br>40 – 44<br>45 and over<br>Not stated          | 1,161<br>1,896<br>1,294<br>739<br>278<br>40<br>1<br>6                        | 1,325<br>2,051<br>1,435<br>806<br>294<br>60<br>3<br>3                 | 1,332<br>2,301<br>1,513<br>834<br>345<br>61<br>3<br>33                       |
| Total   | 5,415  | 5,977   | 6,422  |

### TABLE 5.8 - BIRTHS REGISTERED BY AGE OF MOTHER (a) Reference: Unpublished table: BTHR0007

(a) Figures relate to State of usual residence of mother. (b) Includes ex-nuptial births.

*Ex-nuptial Live Births* A birth is registered as ex-nuptial if the parents are not married to each other at the time of the confinement. Ex-nuptial births in 1991 comprised 25.2 per cent of all live births registered.

The proportion of ex-nuptial births has increased between 1989 and 1991. Table 5.8 shows total and ex-nuptial births registered by age of mother. The proportion of ex-nuptial births to mothers in the under 25 years age groups has increased over the last three years to a level higher than the proportion of total births to mothers in the same age groups.

*Legitimation* Under the provisions of the *Marriage Act* 1961 (Commonwealth), which came into operation on 1 September 1963, a child whose parents are not married to each other at the time of its birth becomes legitimised on the subsequent marriage of its parents.

Age-specific Birth Rates As a measure of fertility, the crude birth rate has the advantage of simplicity in calculation. The data necessary for its computation are usually readily available from published statistics and it is therefore useful in comparing the fertility of the populations of regions for which no additional data are available. However, it is of limited use since it does not take into account the important factors of age and sex composition of the population. Age-specific birth rates, which do have regard to these factors, therefore provide a better measure of fertility. Age-specific birth rates represent the number of live births to women of specified ages per thousand women of those particular ages, and thus take cognisance of the variations in fertility experienced by women at the successive stages of their child-bearing life.

#### TABLE 5.9 – BIRTHS: WESTERN AUSTRALIA IN RELATION TO AUSTRALIA, 1991 Reference: Catalogue No. 3301.0

|  | 8                    |                   |
|--|----------------------|-------------------|
|  | Western<br>Australia | Australia         |
| Number of births—<br>Nuptial                             | 18,995<br>6,422      | 198,024<br>59,223 |
| Ex-nuptial<br>Total                                      | 25,417               | 257,247           |
| Crude birth rate (a)<br>Age-specific birth rate (b)—     | 15.5                 | 14.9              |
| 15 – 19<br>20 – 24                                       | 24.3<br>81.7         | 22.1<br>74.3      |
| 25 - 29<br>30 - 34                                       | 137.2<br>98.3        | 131.6<br>99.8     |
| 35 - 39<br>40 - 44                                       | 33.4<br>5.4          | 36.0<br>5.5       |
| 45 - 49  | 0.2                  | 0.2               |
| Gross reproduction rate (c)<br>Net reproduction rate (d) | 0.917<br>0.890       | 0.885<br>0.914    |
| iver reproduction rate (d)                               | 0.090                | 0.91              |

(a) Per 1,000 mean resident population. (b) Live births per 1,000 women in each age group. Births to mothers under 15 are included in the 15-19 age group, and births to mothers aged 50 and over are included in the 45-49 age group. (c) Sum of the female age-specific fertility rates multiplied by 5 and divided by 1,000. (d) Based on Annual Life Tables calculated by the Australian Statistician. Because of the method of calculation, these figures are subject to annual fluctuations which may not be indicative of a longer term trend.

Gross and Net Reproduction Rates The gross reproduction rate is derived from female age-specific fertility rates which indicate the number of *female* births to women of specified ages per thousand women of those particular ages. It provides a measure of the number of daughters who would be born, on the average, to every woman — assuming that they live through the whole of the child-bearing period and that the basic fertility rates remain unaltered throughout. The gross reproduction rate assumes that all females survive to the end of their child-bearing capacity.

A more accurate measure, which takes into account the effect of mortality among women during this period, is the net reproduction rate. This rate represents the average number of daughters who would be born to women during their lifetime, if they were subject in each succeeding year of life to the fertility and mortality rates on which the calculation is based. The net reproduction rate is a measure of the number of women who, in the next generation, will replace the women of reproductive age in the current generation. It provides a useful indication of likely future population trends. A rate remaining stationary at unity indicates an ultimately static population. If a rate greater than unity is maintained, an ultimate increase of population will result, while a continuing rate less than unity will lead to an ultimate decline.

Table 5.9 provides comparative data for Western Australia and Australia on number of births, birth rates and reproduction rates for 1991. The figures show that the crude birth rate (the number of total births per thousand mean resident population) for Western Australia (15.5 per cent) is higher than for Australia as a whole (14.9 per cent). The percentage of ex-nuptial to total births in Western Australia is also higher (25.3 per cent) than the figure for Australia (23.0 per cent).

### Deaths

Causes of Death

Cause of death statistics are classified according to the Ninth (1975) Revision of the World Health Organisation's *International Classification of Diseases*, which was adopted for worldwide use from 1979. The term 'cause of death', as used in these tables and elsewhere in this Chapter, means '(a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury'.

Table 5.10 provides comparative data for deaths in Western Australia and Australia on the number of deaths and death rates for 1991. The figures show that the crude death rate (the number of deaths per thousand of mean resident population) in Western Australia, of 5.7, is lower than the Australian figure of 6.8.

|   | West                            | tern Austri                  | alia                             |                                   | Australia                    |                                  |
|---|---------------------------------|------------------------------|----------------------------------|-----------------------------------|------------------------------|----------------------------------|
| Causes of death and<br>International number (b)   | Persons                         | Per cent<br>of all<br>deaths | Rate<br>(c)                      | Persons                           | Per cent<br>of all<br>deaths | Rate<br>(c)                      |
| Infectious<br>and parasitic diseases (000-139)  | 86                              | 0.9                          | 5.25                             | 830                               | 0.7                          | 4.80                             |
| Neoplasms (140-239)—<br>Malignant (140-208)—<br>Digestive organs and<br>peritoneum (150-159)<br>Trachea, bronchus and lung (162)<br>Genitourinary organs (179-189)<br>Other | 730<br>607<br>400<br>802        | 7.7<br>6.4<br>4.2<br>8.4     | 44.59<br>37.10<br>24.43<br>48.99 | 8,811<br>6,769<br>5,015<br>10,390 | 7.4<br>5.6<br>4.2<br>8.7     | 50.94<br>39.14<br>29.00<br>60.07 |
| Benign, other and   | 002                             | 0.1                          | 10177                            | 10,070                            | 0.7                          | 00.07                            |
| unspecified (210-239)   | 20                              | 0.2                          | 1.22                             | 324                               | 0.3                          | 1.87                             |
| Endocrine, nutritional and<br>metabolic diseases (240-279)<br>Diseases of blood and   | 270                             | 2.8                          | 16.49                            | 3,358                             | 2.8                          | 19.42                            |
| blood-forming organs (280-289)  | 30                              | 0.3                          | 1.83                             | 443                               | 0.4                          | 2.56                             |
| Mental disorders (290-319)  | 133                             | 1.4                          | 8.12                             | 1,885                             | 1.6                          | 10.90                            |
| Diseases of the nervous<br>system and sense organs (320-389)  | 224                             | 2.4                          | 13.68                            | 2,348                             | 2.0                          | 13.58                            |
| Diseases of the circulatory system (39<br>Ischaemic heart disease (410-414)<br>Cerebrovascular disease (430-438)<br>Other   | 90-459)—<br>2,392<br>858<br>850 | 25.1<br>9.0<br>8.9           | $146.11 \\ 52.40 \\ 51.92$       | 30,323<br>11,883<br>10,804        | 25.4<br>10.0<br>9.7          | $175.33 \\ 68.71 \\ 62.47$       |
| Diseases of the respiratory system (4   | 60-519)—                        |                              |                                  |                                   |                              |                                  |
| Chronic obstructive<br>pulmonary disease (490-496)<br>Other   | 435<br>267                      | 4.6<br>2.8                   | 26.57<br>16.30                   | 6,012<br>2,894                    | 5.0<br>2.4                   | 34.76<br>16.73                   |
| Diseases of the   |                                 |                              |                                  | ,                                 |                              |                                  |
| digestive system (520-579)<br>Diseases of the   | 318                             | 3.4                          | 19.42                            | 4,063                             | 3.4                          | 23.49                            |
| genitourinary system (580-629)  | 145                             | 1.5                          | 8.85                             | 1,969                             | 1.7                          | 11.38                            |
| Complications of pregnancy, childbin<br>and the puerperium (630-676)  | (d)                             | (d)                          | (d)                              | 13                                | (d)                          | 0.08                             |
| Diseases of the skin<br>and subcutaneous tissue (680-709)   | 10                              | 0.1                          | 0.60                             | 113                               | 0.1                          | 0.65                             |
| Diseases of the musculoskeletal syste<br>and connective tissue (710-739)<br>Congenital anomalies (740-759)  | em<br>47<br>88                  | 0.5<br>0.9                   | 2.87<br>5.38                     | 660<br>778                        | 0.6<br>0.7                   | 3.82<br>4.50                     |
| Certain conditions originating in the perinatal period (760-779)  | 57                              | 0.6                          | 3.48                             | 798                               | 0.6                          | 4.61                             |
| Symptoms, signs and<br>ill-defined conditions (780-799)   | 59                              | 0.6                          | 3.60                             | 660                               | 0.6                          | 3.82                             |
| Accidents, poisonings and violence (  | 800-999)—                       |                              |                                  |                                   |                              |                                  |
| Motor vehicle<br>traffic accidents (810-819)  | 208                             | 2.2                          | 12.71                            | 2,221                             | 1.9                          | 12.84                            |
| Suicide and self<br>inflicted injury (950-959)<br>Other   | 212<br>298                      | 2.2<br>2.9                   | 12.95<br>17.10                   | 2,360<br>3,122                    | 2.0<br>2.6                   | 13.64<br>18.05                   |
|   |                                 |                              |                                  |                                   |                              |                                  |
| All causes  | 9,528                           | 100.0                        | 582.00                           | 119,1 <b>42</b>                   | 100.0                        | 688.90                           |

# TABLE 5.10 - PRINCIPAL CAUSES OF DEATH, 1991 (a)Reference: Catalogue No. 3303.0

(a) Based on State of usual residence. Fetal deaths are excluded. (b) Classified in accordance with the *International Classification of Diseases* (Ninth revision, 1975), operative from 1 January 1979. (c) Per 100,000 of mean resident population. (d) Less than 0.1.

|   | Western Australia | Australia  |
|---|-------------------|------------|
| Number of deaths                              | 9,528             | 119,146    |
| Crude death rate (a)<br>Infant death rate (b) | 5.7<br>7.2        | 6.8<br>7.1 |
| Age-specific death rate (years) (             | c)—               |            |
| Ünder 1 year                                  | 7.22              | 7.14       |
| 1 - 4   | 0.35              | 0.33       |
| 5 – 9   | 0.11              | 0.17       |
| 10 - 14                                       | 0.10              | 0.17       |
| 15 – 19                                       | 0.66              | 0.60       |
| 20 - 24                                       | 0.95              | 0.85       |
| 25 – 29                                       | 0.86              | 0.91       |
| 30 - 34                                       | 0.70              | 0.91       |
| 35 - 39                                       | 1.09              | 1.16       |
| 40 - 44                                       | 1.20              | 1.54       |
| 45 - 49                                       | 2.27              | 2.36       |
| 50 - 54                                       | 3.76              | 4.04       |
| 55 – 59                                       | 6.54              | 6.75       |
| 60 - 64                                       | 10.66             | 11.83      |
| 65 - 69                                       | 17.04             | 18.55      |
| 70 - 74                                       | 26.71             | 28.52      |
| 75 – 79                                       | 45.77             | 48.68      |
| 80 - 84                                       | 72.23             | 77.10      |
| 85 and over                                   | 145.69            | 151.35     |

#### TABLE 5.13 – DEATHS: WESTERN AUSTRALIA **IN RELATION TO AUSTRALIA, 1991** Reference: Catalogue No. 3302.0

(a) Per 1,000 mean resident population. (b) Infant deaths per 1,000 live births. (c) Number of deaths per 1,000 persons in each age group. Excludes fetal deaths. In 1991, 26.6 per cent of deaths were from malignant neoplasms (cancers), with 1,415 males and 1,124 females dying from that cause. There were 2,392 deaths (25.1 per cent of all deaths) from ischaemic heart disease, comprised of 1,339 males and 1,053

Other major causes of death in 1991 were cerebrovascular disease, with 858 cases (9.0 per cent of the total) involving 348 males and 510 females; and diseases of the respiratory system which were responsible for 448 male and 254 female deaths, a total of 702 occurences or 7.4 per cent of all cases.

Perinatal deaths Since deaths within the first four weeks of life (neonatal deaths) are mainly due to conditions originating before or during birth conditions which can also cause stillbirths (fetal deaths) — special tabulations are prepared combining the two. These are termed 'perinatal deaths'. The statistical definition of perinatal deaths in Âustralia was amended in 1979 and now includes all fetuses and infants delivered weighing at least 500 grams or, when birthweight is unavailable, the corresponding gestational age (22 weeks) or body length (25cm crown-heel). The rates for fetal deaths and perimatal deaths are calculated per thousand live births only. The live births figure used to calculate these rates excludes those infants known to have weighed less than 500 grams at delivery.

females.

Infant deaths relate to the deaths of live-born children who died when less than one year old. Table 5.11 and 5.12 show a range of data for perinatal and infant deaths respectively.

| Western Australia |                                       |
|-------------------|---------------------------------------|
| Number            | Rate                                  |
| 207               | 8.1                                   |
| 10                | 1.0                                   |
|                   | 1.9                                   |
|                   | 1.1                                   |
| 20                | 0.8                                   |
| 98                | 3.9                                   |
| 305               | 11.9                                  |
|                   | Number<br>207<br>49<br>29<br>20<br>98 |

#### TABLE 5.11 – PERINATAL DEATHS: NUMBER AND RATES, 1991 Reference: Unpublished tables used for preparation of catalogue No. 3304.0

(a) Figures are based on Western Australian definitions of Perinatal deaths.

### TABLE 5.12 – INFANT DEATHS: CAUSES OF DEATH, 1991 (a) Reference: Catalogue No. 3312.5

|  | West   | ern Australia                    |
|--|--------|----------------------------------|
| Causes of death and<br>International number (b)                  | Number | Per cent of all<br>infant deaths |
| Causes mainly of prenatal and natal origin (740-779)—            |        |                                  |
| Congenital anomalies (740-759)                                   | 51     | 28.2                             |
| Immaturity (765)   | 20     | 11.0                             |
| Birth trauma (767)   | 1      | 0.6                              |
| Hypoxia and birth asphyxia (768)                                 | 7      | 3.9                              |
| Respiratory distress syndrome (769)                              | 11     | 6.1                              |
| Other respiratory conditions (770)<br>Infections specific to the | 8      | 4.4                              |
| perinatal period (771)   | 4      | 2.2                              |
| Fetal and neonatal haemorrhage (772)                             | 1      | 0.6                              |
| Other  | 4      | 2.2                              |
| Total  | 107    | 59.1                             |
| Causes mainly of postnatal origin—                               |        |                                  |
| Sudden death, cause unknown (798)                                | 49     | 27.1                             |
| All other causes   | 25     | 13.8                             |
| Total  | 74     | 40.9                             |
| All causes   | 181    | 100.0                            |

(a) Based on State of usual residence. Fetal deaths are excluded. (b) Classified in accordance with the *International Classification of Diseases* (Ninth revision), operative from 1 January 1979.

# **Life Expectancy** A life table is a life history of a hypothetical group, or cohort, of people, as it is diminished gradually by deaths. A key value in life tables is the expectation of life remaining at each age.

The Australian Bureau of Statistics has produced life tables for Western Australia dating back to 1971. In that year, expectation of life at birth was 68.4 years for males, and 75.3 years for females. In 1991 it had risen to 75.00 and 80.87 years respectively. Life expectancy at birth for males has therefore increased slightly more than for females over this period, however female life expectancy is still nearly six years greater than that of males.

In 1991 Western Australian life expectancy at birth was slightly higher than for Australia as a whole, with the respective Australian expectancies being 74.35 years for males and 80.29 years for females (Table 5.14).

|           | Expectation of life (b) |       |       |  |
|-----------|-------------------------|-------|-------|--|
| Age       | 1989                    | 1990  | 1991  |  |
| Birth—    |                         |       |       |  |
| Males     | 74.27                   | 74.93 | 75.00 |  |
| Females   | 80.42                   | 80.60 | 80.87 |  |
| 1 year—   |                         |       |       |  |
| Males     | 73.91                   | 74.61 | 74.59 |  |
| Females   | 79.98                   | 80.25 | 80.40 |  |
| 20 years— |                         |       |       |  |
| Males     | 55.54                   | 56.12 | 56.03 |  |
| Females   | 61.29                   | 61.59 | 61.71 |  |
| 40 years— |                         |       |       |  |
| Males     | 36.79                   | 37.29 | 37.26 |  |
| Females   | 41.72                   | 42.15 | 42.20 |  |
| 60 years— |                         |       |       |  |
| Males     | 19.06                   | 19.50 | 19.56 |  |
| Females   | 23.38                   | 23.72 | 23.74 |  |
| 70 years— |                         |       |       |  |
| Males     | 12.08                   | 12.50 | 12.37 |  |
| Females   | 15.28                   | 15.58 | 15.66 |  |
| 80 years— |                         |       |       |  |
| Males     | 6.90                    | 7.15  | 6.91  |  |
| Females   | 8.65                    | 8.76  | 8.98  |  |

#### TABLE 5.14 – COMPLETE EXPECTATION OF LIFE AT SELECTED AGES (a), WESTERN AUSTRALIA (years)

(a) Based on annual life tables calculated by the Australian Statistician. These figures are based on estimated resident population. (b) The average number of additional years a person of given age and sex might expect to live if the age-specific death rates of the given period continued throughout their lifetime.

#### Marriages

Marriages may be celebrated either by ministers of religion registered for the purpose, by the Registrar-General, the Deputy Registrar-General, or other appointed State officers, or by other authorised fit and proper persons.

| Kelefence: Catalogue No. 3306.0 |      |      |      |      |      |
|---------------------------------|------|------|------|------|------|
| Marital status                  | 1987 | 1988 | 1989 | 1990 | 1991 |
| Bridegrooms-                    |      |      |      |      | _    |
| Never married                   | 25.9 | 26.2 | 26.3 | 26.4 | 26.8 |
| Widowed                         | 58.8 | 62.7 | 61.6 | 61.0 | 62.8 |
| Divorced                        | 38.6 | 39.5 | 39.9 | 39.6 | 39.5 |
| All bridegrooms                 | 27.8 | 28.2 | 28.2 | 28.3 | 28.6 |
| Brides—                         |      |      |      |      |      |
| Never married                   | 23.7 | 23.9 | 24.1 | 24.1 | 24.4 |
| Widowed                         | 51.3 | 53.2 | 54.2 | 53.6 | 52.0 |
| Divorced                        | 34.7 | 35.4 | 35.9 | 36.0 | 36.3 |
| All brides                      | 25.3 | 25.6 | 25.8 | 25.8 | 26.1 |
|                                 |      |      |      |      |      |

#### TABLE 5.15 - MEDIAN (a) AGES OF BRIDEGROOMS AND BRIDES (years) Reference: Catalogue No. 3306.0

(a) The median age is that age which divides the reference population into two halves, one half being below the median age and one half above.

During 1991, 5,259 marriages were performed by ministers of religion, representing 49.3 per cent of all marriages and 5,400 marriages (or 50.7 per cent) were performed by registered civil celebrants. Catholic marriages were the largest denomination, with a total of 1,907 or 17.9 per cent. This was followed by Anglican marriages which registered 1,299 or 12.2 per cent, Uniting Church with 801 registrations or 7.5 per cent and Churches of Christ with 185 registrations or 1.7 per cent.

# TABLE 5.16 - MARRIAGES: CATEGORY OF CELEBRANT, 1991 Reference: Catalogue No. 3306.0

|   | Western A   | ustralia             | Aust    | ralia                |
|---|-------------|----------------------|---------|----------------------|
| Category of<br>celebrant                      | Number      | Per cent<br>of total | Number  | Per cent<br>of total |
| Ministers of religion of recognise            | ed denomina | ations (a)—          |         |                      |
| Catholic Church                               | 1,907       | 17.9                 | 23,288  | 20.5                 |
| Anglican Church of Australia                  | 1,299       | 12.2                 | 15,177  | 13.3                 |
| Uniting Churches of Australia                 | (b) 801     | 7.5                  | 11,599  | 10.2                 |
| Presbyterian Church                           | . ,         |                      | ,       |                      |
| of Australia (b)                              | 43          | 0.4                  | 1,847   | 1.6                  |
| Orthodox Churches (b)                         | 96          | 0.9                  | 2,899   | 2.5                  |
| Baptist Union of Australia (b)                | 164         | 1.5                  | 1,922   | 1.7                  |
| Lutheran Churches (b)                         | 58          | 0.5                  | 1,288   | 1.1                  |
| Churches of Christ                            |             |                      |         |                      |
| in Australia (b)                              | 185         | 1.7                  | 1,258   | 1.1                  |
| Other Denominations                           | 704         | 6.6                  | 7,530   | 6.6                  |
| Total   | 5,259       | 49.3                 | 66,849  | 58.7                 |
| Civil celebrants—                             |             |                      |         |                      |
|   | 814         | 7.6                  | 10,760  | 9.4                  |
| Official registrars<br>Other civil celebrants | 4,586       | 43.0                 | 36,260  | 31.8                 |
| Total   | 5,400       | 50.7                 | 47,020  | 41.3                 |
| All celebrants                                | 10,659      | 100.0                | 113,869 | 100.0                |

(a) Under authority of the Australian Marriages Act 1961. (b) Includes churches grouped under this heading as proclamated under the Australian Marriages Act 1961.

The median age of brides and bridegrooms for first marriages has risen over the past five years, as shown in Table 5.16. In 1987 the median age of bridegrooms was 25.9, rising to 26.8 in 1991. For brides, the average age for first mariages has risen from 23.7 to 24.4 over the same period.

**Divorces** The Family Law Act 1975 (Commonwealth), which came into operation on 5 January 1976, repealed the Matrimonial Causes Act and made new provisions relating to divorce. It also established the Family Court of Australia.

In Western Australia, jurisdiction relating to the Family Law Act (Commonwealth) is vested in the Family Court of Western Australia constituted by the *Family Court Act* 1975 (State).

The Family Law Act provides that an application by a party to a marriage, for a decree of dissolution of the marriage, shall be based on the grounds that the marriage has broken down irretrievably. A decree of dissolution is made, if and only if, the Court is satisfied that the parties separated and thereafter lived separately and apart for a period of not less than twelve months immediately preceding the date of the filing of the application for dissolution of marriage, provided that the Court is satisfied that there is no reasonable likelihood of cohabitation being resumed.

The Family Court of Western Australia also exercises jurisdiction in matters concerning the adoption of children, and the guardianship, custody or maintenance of children.

In both Western Australia and Australia, almost one half of marriage dissolutions occurred when the duration of the marriage was nine years or less. Dissolutions were highest in marriages with a duration of between five and nine years. (Table 5.17)

|                     | Marriages dissolved |                      |        |                      |
|---------------------|---------------------|----------------------|--------|----------------------|
|                     | Western An          | Western Australia    |        | Australia            |
| Duration<br>(years) | Number              | Per cent<br>of total | Number | Per cent<br>of total |
| Under 5             | 814                 | 18.3                 | 9,722  | 21.3                 |
| 5 - 9               | 1,267               | 28.5                 | 12,480 | 27.4                 |
| 10 - 14             | 830                 | 18.7                 | 8,041  | 17.6                 |
| 15 – 19             | 582                 | 13.1                 | 5,988  | 13.1                 |
| 20 - 24             | 506                 | 11.4                 | 4,734  | 10.4                 |
| 25 – 29             | 281                 | 6.3                  | 2,618  | 5.7                  |
| 30 and over         | 166                 | 3.7                  | 2,045  | 4.5                  |
| Total (a)           | 4,446               | 100.0                | 45,630 | 100.0                |

 TABLE 5.17 – DISSOLUTIONS OF MARRIAGE, 1991

 Reference: Catalogue No. 3307.0 and unpublished table DIVR0013

(a) Includes duration of marriage not stated.

**Overseas** Migration Migration to Australia is regulated by the Migration Act 1958 (Commonwealth), which came into force on 1 July 1959.

Permanent movement deals with arrivals of settlers (persons who hold migrant visas regardless of stated intended period of stay), New Zealand citizens who indicate an intention to settle, and those who are otherwise eligible to settle, for example, the overseas born children of Australian citizens. Permanent movements also include the departures of Australian residents, including former settlers, who on departure state that they do not intend to return to Australia. The departure rate dropped only slightly from 4,410 in 1990 to 4,300 in 1991 (Table 5.18).

|           | Former       | Australian |       |
|-----------|--------------|------------|-------|
| Period    | settlers     | residents  | Total |
|           | ANNUAL AVERA | GES        |       |
| 1976–1980 | 2,270        | 1,010      | 3,280 |
| 1981–1985 | 1,970        | 1,010      | 2,980 |
| 1986–1990 | 1,854        | 1,286      | 3,140 |
|           | ANNUAL TOTA  | LS         |       |
| 1989      | 2,140        | 1,520      | 3,650 |
| 1990      | 2,470        | 1,940      | 4,410 |
| 1991      | 2,660        | 1,630      | 4,300 |

#### **TABLE 5.18 – PERMANENT DEPARTURES BY CATEGORY** Reference: Catalogue No. 3404.0

#### TABLE 5.19 - PERMANENT (SETTLER) ARRIVALS **BY SELECTED COUNTRY OF BIRTH, 1992** Reference: Unpublished table PMTR 0018

| Country of birth           | Australia      | Western Australia |
|----------------------------|----------------|-------------------|
| Oceania and Australia      | 10,319         | 808               |
| New Zealand                | 7,308          | 767               |
| Other                      | 3,011          | 41                |
| Europe and the former USSR | 24,786         | 4,666             |
| Germany, Fed Rep.          | 728            | 86                |
| Netherlands                | 230            | 30                |
| Poland                     | 1 <i>,</i> 540 | 168               |
| Portugal                   | 289            | 31                |
| Romania                    | 532            | 38                |
| Switzerland                | 253            | 44                |
| UK & Ireland               | 12,285         | 3,699             |
| former Yugoslavia          | 2,997          | 254               |
| Other                      | 5,932          | 316               |

| Country of birth                | Australia              | Western Australia |
|---------------------------------|------------------------|-------------------|
| Middle East and North Africa    | 7,104                  | 244               |
| Egypt                           | 949                    | 27                |
| Iran                            | 445                    | 38                |
| Lebanon                         | 1,115                  | 24                |
| Other                           | 4,595                  | 155               |
| Southeast Asia                  | 17,995                 | 1,930             |
| Brunei                          | 68                     | 32                |
| Burma                           | 154                    | 54                |
| Indonesia                       | 1,362                  | 224               |
| Malaysia                        | 2,171                  | 567               |
| Philippines                     | 4,933<br>664           | 221<br>221        |
| Singapore<br>Thailand           | 823                    | 112               |
| Viet Nam                        | 7,394                  | 487               |
| Other                           | 426                    | 233               |
|                                 |                        | 596               |
| Northeast Asia<br>China         | <b>17,203</b><br>3,363 | 156               |
| Hong Kong                       | 9,816                  | 286               |
| Taiwan                          | 2,223                  | 57                |
| Other                           | 1,801                  | 97                |
|                                 |                        |                   |
| Southern Asia                   | 9,396                  | 603               |
| Afghanistan<br>India            | 716<br>5,109           | 50<br>421         |
| Pakistan                        | 5,109<br>446           |                   |
| Sri Lanka                       | 2,488                  | 25<br>89          |
| Other                           | 637                    | 18                |
| Ottler                          | 007                    | 10                |
| Northern America                | 2,305                  | 238               |
| Canada                          | 770                    | 68                |
| United States                   | 1,533                  | 169               |
| Other                           | 2                      | 1                 |
| South and Central America       |                        |                   |
| and Caribbean                   | 2,273                  | 133               |
| Chile                           | 392                    | 13                |
| El Salvador                     | 574                    | 58                |
| Other                           | 1,307                  | 62                |
| Africa (excluding North Africa) | ) 2,799                | 602               |
| Kenya                           | 199                    | 72                |
| South Africa                    | 1,239                  | 298               |
| Zimbabwe                        | 203                    | 83                |
| Other                           | 1,158                  | 149               |
| Total                           | 94,248                 | 9,821             |

# TABLE 5.19 – PERMANENT (SETTLER) ARRIVALSBY SELECTED COUNTRY OF BIRTH, 1992 (continued)Reference: Unpublished table PMTR 0018

The largest number of permanent arrivals in Western Australia in 1991 were 5,890 (or 42.3 per cent) from the U.K and Ireland, followed by 1,020 (or 7.3 per cent) from Malaysia, 780 (or 5.5 per cent) from Vietnam and 670 (4.8 per cent) from New Zealand, as shown in Table 5.19. Arrivals declined 27.7 per cent from 19,290 in 1989 to 13,934 in 1991, as shown in Table 5.20.

| Age group (years)                                     | 1990  | 1991   | 1992   |
|---|---|--|--|
|   | MALES   |  |  |
| 0-4<br>5-14<br>15-24<br>25-44<br>45-64<br>65 and over | 1,020<br>1,610<br>1,100<br>3,820<br>680<br>240    | 770<br>1,342<br>812<br>3,258<br>581<br>176       | 624<br>854<br>539<br>2,222<br>425<br>157       |
| Total   | 8,470   | r6,939   | 4,821  |
|   | FEMALES   |  |  |
| 0-4<br>5-14<br>15-24<br>25-44<br>45-64<br>65 and over | 920<br>1,530<br>1,260<br>3,590<br>730<br>280      | 791<br>1,252<br>948<br>3,194<br>571<br>238       | 517<br>815<br>702<br>2,301<br>459<br>206       |
| Total   | 8,310   | 6,994  | 5,000  |
|   | PERSONS   |  |  |
| 0-4<br>5-14<br>15-24<br>25-44<br>45-64<br>65 and over | 1,940<br>3,140<br>2,360<br>7,410<br>r1,410<br>520 | 1,561<br>2,594<br>1,760<br>6,452<br>1,152<br>414 | 1,141<br>1,669<br>1,241<br>4,523<br>884<br>363 |
| Total   | 16,780  | r13,933  | 9,821  |

 TABLE 5.20 – PERMANENT ARRIVALS BY SEX AND AGE

 Reference: Unpublished table No: PMTR0039

### Population

### References

1991 Census — A Guide to Products and Services (2910.0)

Australian Demographic Statistics (3101.0)

Births, Australia (3301.0)

Causes of Death, Australia (3303.0)

Deaths, Australia (3302.0) and Western Australia (3312.5)

Divorces, Australia (3307.0)

Demography, Western Australia (3311.5)

Estimated Resident Population by Age and Sex in Statistical Local Areas, Western Australia (3203.5)

Estimated Resident Population by Age and Sex, States and Territories of Australia (3201.0)

Marriages, Australia (3306.0)

Overseas Arrivals and Departures, Australia (3404.0)

Perinatal Deaths, Australia (3304.0)

| Popul | ation |
|-------|-------|
|-------|-------|

# SOCIAL WELFARE AND HEALTH

6



# Chapter 6

# SOCIAL WELFARE AND HEALTH

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### Chapter 6

# SOCIAL WELFARE AND HEALTH

Much of the information for the sections in this chapter has been provided by the respective Commonwealth and State Government Departments and Authorities responsible for administering social welfare and health policies to the Western Australian community.

### Social Welfare

The Commonwealth and State Governments and a large number of voluntary agencies provide social welfare services to meet the needs of the Western Australian population. The Commonwealth Government is concerned largely with providing fixed monetary pensions and benefits and repatriation services. It also provides, either directly or through State and local government authorities and voluntary agencies, a wide range of welfare services for people with special needs.

State agencies operate in the field of child welfare and distribute emergency relief in circumstances where Commonwealth Government assistance is not available. The voluntary agencies, many of which receive government aid, provide a wide range of services in various fields of social welfare.

Income Support<br/>through theThe Social Security Portfolio has responsibility for six programs.<br/>Five of these are income security programs to meet the differing<br/>needs of the Department's clients and are based on supporting the<br/>following classes of need:

- Retired;
- People with Disabilities and the Sick;
- Unemployed;
- Families with Children; and
- Special Circumstances.

The sixth program provides support services for the income security programs and the Department's staff.

Age Pensions The introduction of a pension for aged persons in 1909 marked the beginning of Australia's national provision of social security payments.

| Pension or benefit                     | Number  | Amount paid<br>\$'000 |
|--|---------|-----------------------|
| Aged pension (a)                       | 118,362 | 784,673               |
| Disability Support/Invalid pension (a) | 45,654  | 342,035               |
| Child disability allowance (b)         | 5,679   | 10,856                |
| Rehabilitation allowance (b)           | 298     | 4,753                 |
| Mobility allowance                     | 844     | 734                   |
| Unemployment benefit (c) (e)           | 78,420  | 677,844               |
| Sickness benefits (c)                  | 4,006   | 33,670                |
| Family allowance (d)                   | 191,326 | 234,217               |
| Family allowance supplement            | 24,829  | 74,475                |
| Sole parent pension                    | 28,902  | 309,600               |
| Double orphans pension                 | 161     | 150                   |
| Special benefit                        | 3,116   | 24,216                |

### TABLE 6.1 – PENSIONS, BENEFITS AND ALLOWANCES30 JUNE 1992

(a) Includes wife's/carer's pension. (b) Amount paid includes pensions for wives, guardians etc. (c) Average number on benefit at end of each week. (d) Number of families. (e) Includes Newstart and Jobsearch.

Since then, the system of age pensions has been upgraded to take account of changing social circumstances, particularly the ageing of the population and the increasing incidence of superannuation.

In recent years, the average pension and non-pension incomes of pensioners have tended to increase, largely as a result of access to greater amounts of private income from superannuation and other investments (including those funded from lump-sum superannuation) as well as the maintenance of the real value of the pension through indexation. Changes to the income test free area and taxation arrangements for pensioners have also contributed to higher total incomes.

*Disability Support* In November 1991 the Disability Reform Package, incorporating the Disability Support Pension, was introduced to replace the system of invalid pensions and associated payments.

As well as introducing the Disability Support Pension, the new arrangements included the abolition of the Sheltered Employment Allowance and Incentive Allowance, the phasing out of the Rehabilition Allowance, and the replacement of Sickness Benefit with a Sickness Allowance. The objective of the Disability Support Pension is to provide incentives for people with disabilities to seek to re-enter the workforce.

| Type of service             | Payable<br>to veterans | Payable to<br>wives/widows | Total  |
|-----------------------------|------------------------|----------------------------|--------|
| World War 1                 | 52                     | 57                         | 109    |
| World War 2                 | 14,594                 | 10,326                     | 24,920 |
| Korea, Malaya and Far       |                        | ,                          | ,      |
| East Service Reserve        | 656                    | 443                        | 1,099  |
| Special Overseas Service    | 445                    | 307                        | 752    |
| British Commonwealth forces | 3,648                  | 2,859                      | 6,507  |
| Allied forces               | 412                    | 328                        | 740    |
| Australian mariners         | 156                    | 117                        | 273    |
| British Commonwealth        |                        |                            |        |
| and allied mariners         | 68                     | 46                         | 114    |
| Total                       | 20,031                 | 14,483                     | 34,514 |

#### TABLE 6.2 – SERVICE PENSIONS: 30 JUNE 1992 (number)

Source: Department of Veteran's Affairs

| TABLE 6.3 – DISABILITY PENSIONS: 30 JUNE 1992 |  |  |  |  |
|---|--|--|--|--|
| (number)                                      |  |  |  |  |

| Type of service          | Incapacitated<br>veterans | Depen-<br>dents(a) | Total  |
|--------------------------|---------------------------|--------------------|--------|
| World War 1              | 28                        | 587                | 615    |
| World War 2              | 10,312                    | 12,621             | 22,933 |
| Korea, Malaya and Far    | ,                         | ,                  | ,      |
| East Service Reserve     | 472                       | 335                | 807    |
| Special Overseas Service | 1,054                     | 961                | 2,015  |
| Peacetime forces         | 2,000                     | 969                | 2,969  |
| World War 2 merchant nav | y 12                      | 4                  | 16     |
| Total                    | 13,878                    | 15,477             | 29,355 |

(a) Pensions payable to dependents of incapacitated or deceased veterans. *Source*: Department of Veteran's Affairs.

On July 1991 Newstart, a new strategy for income support for unemployed people was introduced to replace the system of Unemployment Benefits which had been in place since 1945. From July 1991 income support for unemployed persons has comprised two separate payments:

- Job Search Allowance which is available to unemployed 16 and 17 year olds (and some 15 year olds) and to people aged 18 and over (up to Age Pension age) during the first 12 months of unemployment; and
- Newstart Allowance for unemployed people aged 18 and over (up to Age Pension) who have been unemployed for 12 months or longer.

The primary objective of the Job Search Allowance is to support (and require) active job search, combined with training or other job preparation activities, while Newstart focusses on the special problems facing the long-term unemployed. *Family Support* From January 1993 a major restructuring of assistance to families has been introduced. Family Allowance, Family Allowance Supplement, child payments for pensioners, beneficiaries and allowees, Guardian Allowance and Rent Assistance for eligible families with children have all been combined into a single integrated Family Payment. Under the new arrangements the maintenance income test will apply to all elements of the Family Payment except the Family Allowance component.

> Eligible recipients may receive additional payments for dependent children, rent assistance and remote area allowance. Pension and benefit rates are indexed to the Consumer Price Index. In addition, the Department of Social Security provides, subject to eligibility requirements, a Double Orphan's Pension, and a Sole Parent Pension (and supplementary Jobs, Education and Training assistance where appropriate).

- *Special Circumstances* Special Benefits are aimed at providing income support for people who are unable to support themselves or their dependants but are not otherwise entitled to a pension or benefit. The major groups of recipients include:
  - certain newly arrived migrants and refugees and their dependants;
  - young people who recently left education and are not eligible for Job Search Allowance but are from low income families;
  - those receiving a Widows Pension; and
  - those receiving Telephone Rental and Postal Concessions.
- *Fringe Benefits* The majority of pension and allowance beneficiaries are entitled to a range of non-cash fringe benefits upon presentation of a concession card. The Department issues four types of health cards: pensioner health benefits card; health benefits card; health care card; and pharmaceutical benefits concession card. These cards are issued depending on the income and assets of the claimant and the type of social security payment being received. The cards may entitle the holder to a wide range of concessions including health, transport, household and recreation concessions which are provided by Government and semi-government authorities and private organisations.

Income Support through the Department of Veterans' Affairs The Department provides income support to compensate veterans and their dependants for the premature ageing and loss of earning power which could result from the intangible effects of qualifying (theatre of war) service and to allow veterans and their dependants to enjoy a living standard which is at least equal to that provided by other Government income support programs and, whenever practicable, consistent with veterans' special standing in the community.

- *Service pension* The Department of Veterans' Affairs provides service pensions to male veterans aged 60 years and over and female veterans aged 55 and over.
- *Disability pension* The Department of Veterans' Affairs provides a disability pension to veterans as compensation for incapacity accepted as war service related.
- Dependents pensions War widow's pensions and orphan's pensions are paid to dependents of disability pensioners after the death of the veteran or member. Similarly, wives and widows of service pensioners may be entitled to a service pension.
- *Carer's pensions* Pensions are granted to persons who personally provide constant care and attention to a severely handicapped veteran in receipt of a service pension, where both the carer and the veteran live in the same home.
- Allowances Several allowances are provided to supplement service and disability pensions. These allowances vary according to the severity of disablement and the special needs of the pensioner. They include attendant's allowance, loss of earnings allowance, recreation transport allowance and domestic allowance. An education allowance is paid for children of special rate pensioners and children of veterans who died as a result of service.

**Department of Health, Housing and Community Services The** Commonwealth Department of Health, Housing and Community Services (HHCS) administers programs which provide or subsidise services offering universal access to housing and accommodation, primary health care, illness prevention and promotion of better health, as well as services for the aged, children and people with disabilities.

> These programs include: Health Advancement; Therapeutic Goods Administration; Health Care Access; Aged and Community Care; Disability Programs; Children's Services; Housing and Urban Development; Information Services; Policy Development; and Corporate Services.

Housing and Urban Development A range of programs have been developed to assist households in the owner-occupied, public housing and private rental housing sectors. The Commonwealth Government provides funds for public housing, supported accommodation services, crisis accommodation, mortgage and rent relief, home purchase loans, and home purchase assistance to individuals and families. In previous years the bulk of the Commonwealth financial assistance for housing was provided through the First Home Owners Scheme. Applications for the scheme which was abolished from 22 August 1990 were accepted up to the closing date of 30 June 1991. During 1991-92 considerable resources were put into a major review of the Housing program, focussing on three main areas:

- the National Housing Strategy;
- Urban reform; and
- the Building Better Cities initiative

The National Housing Strategy released two Issues papers relating to the supply of land and housing, and to housing location and access to services. The need for a housing affordability benchmark was also pursued.

The transfer of the housing industry function from the Department of Industry, Technology and Commerce in June 1991 has enabled an integrated approach to be taken on housing and urban issues by the HHCS.

The Building Better Cities Program, announced in the 1991-92 Federal Budget, is a key urban reform initiative which aims to improve the efficiency, equity and sustainability of Australian cities.

The Australian Housing Industry Development Council, the Federal Government's peak advisory council on supply side issues, was set up in March 1991 to advise on Regulatory Reform which looks at the effectiveness of planning processes, Urban Reform which aims to promote efficient investment in land and infrastruture, and Industry Development which seeks to increase the efficiency of the housing industry.

*Commonwealth-State Housing Agreement* (*CSHA*)*Assistance* Under the CSHA, the Commonwealth provides funding to the State Government for home purchase and rental housing assistance to people on low incomes who are unable to either achieve home ownership in the private market or afford the costs of private rental accommodation.

> Grants are made to the State for use either on specified programs or as untied grants in which the State Government has flexibility in managing housing programs within the guidelines set out in the Agreement.

*Crisis* The Supported Accommodation Assistance Program (SAAP) *Accommodation* The Supported Accommodation Assistance Program (SAAP) provides for a cost-shared arrangement between the Commonwealth and State Governments to assist organisations in providing a range of supported accommodation and related services to people who are either permanently or temporarily homeless as a result of crisis. The objective of the program is to enable individuals to move towards independent living where possible and appropriate.

The Crisis Accommodation Program (CAP), the complementary capital arm of the SAAP, allocates funds for the purchase,

| TABLE 6.4 – | CSHA  | FEDERAL | FUNDING |
|-------------|-------|---------|---------|
|             | 30 JU | NE 1992 |         |

| Туре   | \$'000  |
|--|---------|
| Untied grants  | 72,405  |
| Rental assistance for—<br>Pensioners   | 4,153   |
| Aboriginals  | 15,862  |
| Mortgage and rent relief   | 5,131   |
| Crisis accommodation program   | 3,802   |
| Crisis accommodation program<br>Local government and community housing project | 2,340   |
| Total  | 103,693 |

Source: Department of Health, Housing and Community Services.

#### TABLE 6.5 – CRISIS ACCOMMODATION PROGRAM PROJECTS APPROVED 1991-92

| Туре  | \$'000                        |
|---|-------------------------------|
| Expenditure—<br>CAP<br>SAAP<br>YSJS   | 3,802<br>7,481<br>418         |
| Outlets: SAAP sub program—<br>Youth<br>Women<br>Families<br>General<br><b>Total</b> | 8<br>3<br>6<br>7<br><b>27</b> |

Source: Department of Health, Housing and Community Services.

construction, renovation or leasing of dwellings for use as crisis accommodation. In April 1992 the Council of Social Welfare Ministers agreed to a national evaluation of SAAP.

Services for Families with Children The Commonwealth provides funds for the Services for Families with Children Program. Grants are made directly to State Government or local government authorities and non-profit community organisations to provide child care services. The State Government also contributes towards the capital and recurrent costs of the program. The program aims to ensure that child care is affordable for low- and middle-income families and the program also aims to improve the supply and quality of child care.

> Meeting the child care requirements of children with special needs continued to be a high priority for the HHCS during the year. Supplementary services grants assisted many child care services

to include Aboriginal and Torres Strait Islander children, children from non-English speaking backgrounds or those with a disability.

Aged and Community Care The Aged and Community Care program is designed to broaden the options available to frail aged and younger people with disabilities by promoting a shift from residential to community based care. Assistance is provided in the form of grants paid to government and non-profit community organisations for community based support services. During the year a background paper, Housing for Older Australians: Affordability, adjustments and care, was prepared for the National Housing Strategy.

> Under the Residential Care Program, the Commonwealth funds a range of organisations to provide care in nursing homes and hostels for frail aged people. The main aims of the program are to ensure that the aged receive services best suited to their needs, facilities are developed where they are needed, care is of high quality, and facilities are designed and services provided to allow the maximum level of independence.

> Aged and Community Care services are also funded for the frail aged who wish to live at home.

Disability Programs As well as funding services and programs for people with disabilities, the Commonwealth provides direct rehabilitation services, hearing aids and other audiological services. In 1991-92 a number of significant advancements in providing services to the disabled were achieved. An agreement was signed by the Commonwealth and all State and Territory Governments to establish a national framework and a stable strategic environment for service funding.

The Disability Reform Package, a program to provide for a major increase in job opportunities in the public sector, was initiated jointly by the Department of Social Security, Department of

|                             | Number of<br>services | Expenditure<br>\$'000 |
|-----------------------------|-----------------------|-----------------------|
| Rehabilitation              | 16                    | 8,272                 |
| Hearing (a)                 | 3                     | 2,897                 |
| Accommodation (b)           | 80                    | 17,020                |
| Employment                  | 54                    | 7,576                 |
| Community participation (c) | 42                    | 6,360                 |
| Project management          | n.a.                  | 31                    |
| Total                       | 195                   | 42,156                |

# TABLE 6.6 - DISABILITY PROGRAMME30 JUNE 1992

*Source:* Department of Health, Housing and Community Services.

Employment, Education and Training, and the Department of Health, Housing and Community Services.

Other community support services such as direct rehabilitation through the Commonwealth Rehabilitation Service and funding for the National Acoustic Laboratories, and the Australian Government Health Services are also provided under the Disability Program.

**Department for Community Development** The State Department for Community Development deals with a range of issues and problems in working towards its objectives of enhancing the welfare of individuals, families and groups, particularly those who are disadvantaged, throughout the community in Western Australia. Services are based on the principles of furthering independence, autonomy, social justice and access to opportunity.

The range of welfare and community services provided by the Department fall broadly into five programs, each aimed at meeting particular policy objectives.

*Family Services* The Family Services Program embraces a wide range of services including counselling, accommodation services, crisis support for families, individuals and children, in-care placements for children in need of care, community based family and youth support, education support and, in conjunction with the Commonwealth Government, a range of quality and affordable child care facilities.

The Department's role varies from providing the service directly, supervising funding to community agencies to provide services, to assisting groups in the community to develop their own support groups or services.

Within the Family Services Program, sub-programs focus on Family and Individual Support, Education Services, Youth Services, Children's Services, and Out of Home and Alternative Care Services.

- *Financial and Material* The objectives of this program are to assist people on low incomes to alleviate or overcome short-term financial emergencies and reduce the impact of poverty and/or personal financial management difficulties. Emergency assistance is provided under a number of schemes: Emergency Financial Assistance; Basic Domestic Expenses; and Further Assistance. Basic Domestic Assistance, catering for low income families experiencing difficulties in paying for food and essential services accounted for 61 per cent of total expenditure and 72 per cent of all issues of assistance.
- *Child Protection* Through this program, the Department provides a range of services for children who have been harmed or not protected from harm by those caring for them. This may be done by providing services to the family to support them in their roles or by

ensuring protective care for the child. The Department pursues preventative and educational strategies to support these services. In addition, this program aims to ensure that employment in entertainment and advertising is non-exploitative and provides safe and positive experiences for children.

During 1991-92 some 3,746 allegations were recoded on the Department's Child Protection Information System. This represents a 16 per cent increase from 1991-92 and a 102 per cent increase over the number recorded in 1988-89. Of all the allegations reported to the Department 43 per cent were either substantiated or the child was deemed to be at risk.

Young Offender Services The objectives of this program are to contribute to the prevention and reduction of juvenile crime and assist the just adjudication of offences alleged to have been committed by children in the juvenile justice system.

> The program ensures that a range of appropriate services are available to young people, their families and the community in order to reduce the incidence and effects of juvenile crime. These services vary from community ensure that the Department's dealing with young people who break the law has consequences which are justice oriented, is just and equitable, meets their rights, recognizes their special needs, does not disadvantage children in relation to adults and contributes to the protection of the community. Further information on Juvenile crime can be found in Chapter 7, Law, Order and Emergency Services.

> This program also coordinates major initiatives which address the issue of high juvenile offending rates in specific locations.

*Community Affairs* This program provides an avenue for the development and implementation of the Department's community focused work. The main strategy is to foster and support the efforts of non-government agencies and community groups to determine goals and establish services that meet community needs. In 1991/92 the Department expended a total of \$30.8 million for non-government services. This was an increase of over 7 per cent on the previous year and represents approximately 28 per cent of the Departments total budget.

Authority for<br/>IntellectuallyThe Authority is responsible for advancing the welfare of people<br/>with an intellectual disability by providing and coordinating<br/>appropriate services in cooperation with other government and<br/>non-government organisations. The Authority operates in two<br/>distinct ways. It provides services through its service arm known<br/>as Irrabeena Services and it funds services provided by<br/>government organisations.

The Western Australian Council of Social Service The Western Australian Council of Social Service (WACOSS) is an independent organisation representing a range of interests in the field of social welfare, health and community services. The

Council has individual members and organisational members, including voluntary agencies, self-help and community groups, professional associations and Commonwealth, State and local government bodies.

WACOSS has four principal roles:

to contribute, through participation in various forums, to the development of social policy in Western Australia;

to offer informed comment on, and to promote understanding of, social welfare and social development issues in the community;

to facilitate coordination and cooperation amongst social welfare agencies in Western Australia; and

to provide a range of services to member agencies.

One of the most important events of the WACOSS year was on 22nd March 1991. WACOSS and the Trades and Labour Council launched a joint communique on Social Justice. Social justice was seen to have four components. These are:

Equity

Access

Participation

Rights

ABS Surveys The ABS, as part of it's social project, conducts surveys of relevance to social welfare.

Survey of child care arrangements A survey was conducted in November 1990 to obtain information on child care arrangements made by persons responsible for children under 12 years of age. The survey was a continuation of a series on this topic that have been undertaken at regular intervals since 1969 (the most recent in 1987). Details were collected on the social and economic characteristics of persons and families (marital status, labour force status, income etc); patterns of usage of child care (days, hours and time of day child care was used); location and preference of location of formal care; cost and main reason for using formal and informal child care services; and the amount of care by the partner or spouse of the person responsible.

The findings indicate that 51.4 per cent (156,200) of children in Western Australia under 12 years of age are involved in formal and/or informal child care arrangements compared to 48.4 per cent (134,000) in 1987. The Australian Capital Territory has the largest percentage of children in child care arrangements (62 per cent) with Tasmania the smallest (49 per cent). Further information may be obtained from *Child Care, Australia, November 1990* (Catalogue 4402.0).

Survey of Disabled and Aged Persons The Survey of Disabled and Aged Persons was conducted to obtain information from disabled, handicapped and aged people about their need for, and receipt of, help. The survey also measured the provision of help to handicapped people from the perspective of the handicapped person's principal carer.

The 1988 survey estimated that 2,543,000 people or 15.6 per cent of the Australian population were disabled. In Western Australia, 232,700 people or 15.4 per cent of the population were disabled.

Australia-wide there were over 320,000 carers of handicapped persons in 1988. For Western Australia, the figure was 24,000.

# Health

The Commonwealth and State Government health authorities, together with local government authorities, cooperate in maintaining health services and in the prevention and control of infectious diseases in Western Australia. Health services are also provided by other Commonwealth and State government bodies, religious or community based non-profit organisations, and by volunteer services.

| Commonwealth    | Commonwealth activity in the health area is mainly concerned      |
|-----------------|---|
| Government      | with the formulation of broad national policies, the provision of |
| Health Benefits | benefits and grants to individuals and organisations, and the     |
| and Services    | regulation of health insurance. Services are primarily directed   |
|                 | towards ensuring that all Australians have access to necessary    |
|                 | health services at reasonable cost.                               |

Medical Benefits Medicare provides Australians and other eligible people with reimbursement for medical and optometrical services, free shared ward accommodation and treatment, and free outpatient treatment at public hospitals. Health insurance funds, which are regulated by the Commonwealth, provide medical cover for those electing to be treated privately by a 'doctor of choice' or have private ward accommodation in a public hospital. The Commonwealth provides substantial financial assistance to the States to support Medicare services.

Health The Health Insurance Commission pays medical benefits for Insurance medical and optometrical services and administers the daily operations of the Medicare program. It also undertakes measures to combat medical fraud and overservicing and provides services for processing of the Department of Veterans' Affairs treatment accounts.

|   |  | 1991-92  |   |
|---|--|--|---|
|   |  | Unit   |   |
|   | Persons enrolled (a)   | <i>'000</i>  | 1,709   |
|   | Services processed—<br>General practitioner attendance<br>Specialist attendances<br>Pathology<br>Other<br>Total  | 25 "<br>"<br>"<br>"<br>"   | 7,339<br>1,102<br>2,587<br>1,865<br><b>12,894</b>   |
|   | Average services processed per<br>Males<br>Females<br>Persons  | enrolled person—   | 5.8<br>9.3<br>7.5   |
|   | Benefits paid  | \$'000   | 365,939   |
|   | (a) Medicare enrollees include some<br>visitors). Consequently the num<br>population. Figures are as at 30 June  | ber of enrollees may excee   | an residents (e.g.<br>ed the resident   |
|   | Source: Health Insurance Commissio   | n, Annual report   |   |
| Veterans and<br>Dependants                                    | The Commonwealth meets the<br>dependants of specialist, local<br>services, the supply and of<br>travelling and other expen-<br>treatment. Repatriation hosp<br>each State for the treatment<br>dependants. Community pa-<br>hospitals free of charge if<br>facilities are suitable for the<br>veterans and their depend-<br>admitted to private or St<br>Commonwealth expense. | I medical officer, param<br>maintenance of surgica<br>ises incurred in obtain<br>pitals and clinics are n<br>ent of eligible veterar<br>itients are admitted to<br>spare beds are availa<br>he treatment required.<br>lants may, where app | edical, dental<br>al aids, and<br>ning medical<br>naintained in<br>as and their<br>Repatriation<br>able and the<br>Conversely,<br>propriate, be |
| State Public<br>Hospitals                                     | Apart from Commonwealth<br>Medicare, the Commonwealt<br>of the infrastructure of State J<br>Enhancement Program.   | th also contributes to th  | ne upgrading  |
| Nursing Home<br>Subsidies and<br>Domiciliary Care<br>Services | Nursing home subsidies are<br>who are assessed as needing<br>residential support and care<br>The Commonwealth meets<br>eligible non-profit nursing ho<br>addition, nursing home ben<br>nursing homes for people<br>recurrent expenditure on nu<br>million in Western Australia   | g nursing home care, h<br>which is appropriate to<br>the approved operatin<br>omes for persons with c<br>efits are paid to a sma<br>with disabilities. Du<br>ursing home benefits to   | ave access to<br>b their needs.<br>g deficits of<br>lisabilities. In<br>ll number of<br>ring 1991-92<br>btalled \$126.4                         |

## TABLE 6.7 – MEDICARE: WESTERN AUSTRALIA 1991-92

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Domiciliary nursing home care benefits and services are provided to assist frail aged and young disabled people, who would otherwise require nursing home admission, to remain in the community. The Domiciliary Nursing Care Benefit provides financial support to carers of frail aged people and people with disabilities who would otherwise require nursing home care. During 1991-92 the Domiciliary Nursing Care Benefit recurrent expenditure of Western Australia was \$3.1 million (\$33.5 Million Australia-wide) and the total number of people being cared for was 3,300 (33,325 in Australia).

|  | NSW (b)                            | Vic                            | Qld                          | WA                          | SA (c)                      | Tas                  | NT         | ACT              | Aust                             |
|--|------------------------------------|--------------------------------|------------------------------|-----------------------------|-----------------------------|----------------------|------------|------------------|----------------------------------|
|  |                                    |                                | HC                           | OSPITALS                    | 5                           |                      |            |                  |                                  |
| Recognised<br>(public) hospitals<br>Private hospitals<br>Day hospital facilitie<br>All hospitals | 208<br>93<br>s(e) 29<br><b>330</b> | 157<br>113<br>20<br><b>290</b> | 144<br>49<br>3<br><b>196</b> | 88<br>21<br>4<br><b>113</b> | 81<br>38<br>1<br><b>120</b> | 18<br>7<br><b>25</b> | 5<br>1<br> | 4<br>2<br>3<br>9 | 705<br>324<br>60<br><b>1,089</b> |
| •  |                                    |                                |                              | BEDS                        |                             |                      |            |                  |                                  |
| Recognised<br>(public) hospitals<br>Private hospitals  | 20,941                             | 15,915                         | 12,192                       | 6,188                       | 5,747                       | 2,103                | 609        | 897              | 64,592                           |
| (licensed)   | 6,371                              | 6,429                          | 4,392                        | 1,900                       | 2,262                       | 634                  | 155        | 169              | 22,312                           |
| Day hospital<br>facilities(d)  | 231                                | 158                            | 39                           | 50                          | 12                          |                      |            | 17               | 507                              |
| All hospitals  | 27,543                             | 22,502                         | 16,623                       | 8,138                       | 8,021                       | 2,737                | 764        | 1,083            | 87,411                           |
| Beds per<br>1000 population  | 4.7                                | 5.1                            | 5.6                          | 4.9                         | 5.5                         | 5.9                  | 4.8        | 3.7              | 5.0                              |

### TABLE 6.8 – HOSPITALS AND BEDS(a): STATES AND TERRITORIES AT 30 JUNE 1991p

(a) Based on data provided by State Territory Health Authorities. Beds are counted on a consistent basis when compared with previous years. (b) NSW recognised (public) hospital beds relate to average monthly available beds for the twelve months July 1990 to June 1991. (c) Data for SA is for April 1991. (d) Day hospital facilities are private free-standing day hospital facilities as approved for the purpose of the National Health Act. The source of this data is the Department's *Survey of Free-Standing Day Hospital Facilities*.

Source: Department of Health, Housing and Community Services, Annual Report

Pharmaceutical Through payment of pharmaceutical benefits, the the Benefits Scheme Commonwealth aims to ensure access by the Australian community, to necessary cost-effective, prescribed medications, at the lowest cost to Government and consumers, consistent with reliable supply. The Pharmaceutical Benefits Scheme was reformed in the 1990 Federal Budget to implement a co-payment for pensioners, cost limits for the safety net, and a restructuring of the retail pharmacy industry. The total number of safety net entitlement cards issued in Western Australia was 33,200 in 1991 (a rise of 106 per cent over 1990) while the number of persons covered was 67,100 (a rise of 69 per cent over the previous year).

Social Welfare and Health

During 1991-92 some 94.1 million prescriptions were prescribed nationally at a cost of \$1,455 million. Anti-asthmatics and antibronchitics, and Antihypertensives were the two most commonly prescribed categories of drug groups at 9.7 and 7.2 per cent of all prescriptions respectively.

Health research Commonwealth support for health research activities, generally provided in the form of project, program, institute and research unit grants, covers medical and public health research. Support includes financial assistance through the Medical Research Endowment Fund and the Public Health Research and Development Committee. Nationally this was \$103.3 million and \$4.8 million respectively during 1991-92.

The Commonwealth provides financial assistance for a wide range of health promotion and disease prevention activities that emphasise prevention in contrast to the dominant curative approach.

- National AIDSThe National Health Promotion Program, which supports<br/>community based initiatives to promote better health and to<br/>prevent illness, is one such activity. Under the National AIDS<br/>program, expenditure on AIDS research in 1991-92 amounted to<br/>\$10.8 million while \$38.3 million was spent on blood bank<br/>screening; education and prevention; treatment and support<br/>services; the National Media Campaign; and other information<br/>and reference activities.
- *National Better Health Program Health Program The National Better Health Program funds projects in conjunction with the States to encourage reductions in the incidence of hypertension, accident, injury, poor nutrition, skin cancer and preventable health problems in the elderly. Nationally the Program funded 58 community based projects for a total of \$1.7 million in 1991-92.*
- Health services for Aborigines The Government is committed to raising Aboriginal health standards. Strategies emphasise improvement of environmental conditions, domiciliary hygiene and preventative education programs coupled with the promotion of Aboriginal participation and decision making in health care delivery. In December 1990, the Federal Government announced an additional \$232 million over 5 years to improve the quality of health services and standards for Aborigines.
- National DrugThe National Campaign Against Drug Abuse (NCADA) activitiesProgramsinclude drug abuse treatment, rehabilitation and preventionprograms, the 'Drug Offensive' public information campaign and<br/>the development of a national drug abuse data system together<br/>with research and evaluation. In 1991-92, the Commonwealth<br/>Government contributed \$34.3 million nationally to NCADA<br/>which consisted of \$13.6 million for national campaigns and \$20.8<br/>million in grants to the States (\$1.9 million to Western Australia).

## Ross River Virus in W.A.

Over the past year, the WA Health Department has devoted considerable time and effort into the debilitating Ross River Virus (RRV) infection.

Following an epidemic in the summer of 1988-89, researchers and scientists have been looking at not only preventive measures, but also the long term ill-effects of the disease. RRV, or epidemic polyarthritis, is a mosquito-borne disease which, while non-fatal is non-curable, and causes arthritis, fatigue, fever, rashes, headaches and sore throats lasting an average of 6-12 months. The risk of contracting RRV often follows unseasonal rainfalls which facilitates the breeding of large numbers of the vector mosquitos, such as *Aedes camptorhynchus*, the major carrier of the infection in the southern half of Western Australia. By the end of October 1992, there had been 675 cases reported in WA for the year, with the highest number occurring in the Perth metropolitan area (306).

Regular warnings are issued to reduce the risk of contracting the disease, when conditions are wet enough for mosquitoes to breed and warm enough for the Ross River Virus to multiply in the infected mosquito. People are warned to avoid being outside, particularly after sunset; to cover up with loose clothing; and to wear an effective mosquito repellant on exposed skin.

The State Government is funding a research and monitoring program at the University of Western Australia's Department of Microbiology. This team monitors mosquito and RRV levels fortnightly over a wide area extending from the metropolitan area as far south as Busselton, which is at greatest risk from RRV.



Researchers collect samples of mosquito larvae for study. *Photo:* Health Department of Western Australia.

The cornerstone of Western Australia's RRV control program to date has been the helicopter larvicide program which involves a co-operative effort with local authorities. This involves monitoring known mosquito breeding sites and, if necessary, making an aerial application of larvicide. One of the difficulties the encountered in control of mosquitoes has been the regions where there are relatively small populations surrounded by vast areas of potential Such areas sites. breeding are unsuitable for aerial treatment of larvae because the identification of breeding sites over widely dispersed areas is a task beyond the resources of local authorities, and the successful application of larvacide is dependent on good on-the-ground identification of breeding areas.

In the research area, considerable time and effort has gone into a WA study of the long-term effects of RRV. The first of its kind in Australia, the survey of 260 people who contracted the virus in 1988-89 found that almost half were still unwell a year later. It found that only two per cent of people were completely well within one month of the onset of RRV symptoms. Many people experienced joint pains, stiffness and swelling, lethargy, muscle pains and rashes for many months. About one person in ten suffered symptoms lasting two years or more. Health Support Services In addition to its commercial activities, the Commonwealth Serum Laboratories Commission (CSL) carries out functions determined by the Minister to be in the national interest, including research projects, blood fractionation and maintenance of reserve stocks. The Commonwealth reimburses CSL for the cost of carrying out these functions with the 1991-92 reimbursement amounting to \$4.2 million. The Commonwealth subsidises the operating costs of the Royal Flying Doctor Service and also provides a substantial contribution to capital costs. For the year 1991-92 Grant-in-aid to the Royal Flying Doctor Service of Australia totalled \$14.4 million.

The Health<br/>Department of<br/>Western AustraliaThe Health Department of Western AustraliaThe Health Department of Western AustraliaThe State<br/>Department administersThe Department administers a wide range of legislation<br/>incorporating matters of individual and community health<br/>protection, treatment and regulation.

Disease Prevention and Health Promotion Program The Department's Disease Prevention and Health Promotion Program endeavours to: minimise the incidence of preventable disease, injury, disability and premature death; inform the public about the causes and prevention of major preventable illnesses and injuries; and encourage the adoption of attitudes and behaviours that are conducive to better health.

Health Protection The Program is concerned with control of biological, physical and chemical processes or factors which have a significant effect on the physical or social well being of the community. It emphasises quality control of food and water and the control of other external environmental influences such as chemical exposure and misuse. During 1991-92 the provision of Environmental Health information was expanded to include issues such as air quality, Ross River Virus, lead in crystal, sulpher dioxide in food, asbestos, home composting, household chemicals and clinical waste disposal.

Health Promotion The Program seeks to increase community and individual behaviours which reduce the risk of illness, disability and premature death. Targeted areas include nutrition education, infectious disease control, AIDS information, alcohol, drug and smoking control, skin cancer prevention, hypertension control and Aboriginal health.

In 1991-92, 'Quit', 'Drinksafe' and 'Respect Yourself', and Nutrition Education Campaigns, used advertising media, including press and electronic media, posters, pamphlets, brochures and leaflets, promotional material, competitions and help-lines, to promote their messages. Research conducted by the Department of Health provides strong evidence that these health promotion messages are increasing public awareness of preventable illness and injury and reducing the incidence of health disorders, disability and premature death.

## Food Hygiene

## contributed by Health Department of Western Australia

A rapid rise in the number of reported cases of food poisoning in the state has kept the department's enviromental health branch busy. The need for up-to-date food hygiene laws has resulted in an extensive re-write of WA's Food Hygiene regulations.

Concern about the increase in food poisoning followed the reporting of more than 1500 cases of *Campylobacter gastroenteritis* in 1991. The department set up a fast-tracking system to trace the source of the infection, and sought the co-operation of private and government health laboratories and general practitioners. Now the fast tracking system is aimed at quickly identifying cases of gastroenteritis from the Campylobacter organism so that relevant local health authorities can investigate. Laboratories are asked to notify the department when a case is isolated so the doctor can be contacted and the patient interviewed.

A past problem has been the delay in tracing cases and trying to establish if there is a common mode of transmission and food source. Local authorities have investigated many of the previous but the source of infection has been difficult to determine so no single cause has emerged. Coincidentally, Health Department officers have been concerned for some time about the appropriateness of WA's Food Hygiene regulations, which date back to 1973.

In 1992, the regulations were extensively revised and new provisions added. One of the major strengths of the new laws has been that food premises have been divided into five classes. The classes reflect the risks and the degree of handling and processing required, and cover the broad spectrum of all food premises. For example, the new regulations have a significant bearing on issues such as the wearing of hair coverings in food premises. The old regulations did not differentiate between types of premises, so every food handler technically was required to wear hair covering, even though it was hardly relevant for some, such as someone working in a liquor store. The new provisions also cover newer practices such as salad bars, smorgasbords and outdoor cooking. Once the regulations have been introduced, a six month transitional period will be allowed to give food manufacturers and retailers the opportunity to correct any problems before enforcement comes into effect.

Health Restoration<br/>ProgramThe program exists to restore people who are ill or injured to their<br/>optimum health, to provide obstetric care, through sub-programs<br/>for:

- the early detection and control of disease;
- equitable access to community based health care for the geographically, socially or culturally disadvantaged (Ambulatory Health Care sub-program); and
- a comprehensive range of hospital services (Secondary and Tertiary Care sub-programs).

Activities involve the provision of services to hospitalised patients (in-patients) and to ambulatory and other patients (out-patients). Services are provided in teaching hospitals, non-teaching hospitals and psychiatric hospitals.

Rehabilitation of<br/>Disabled Persons and<br/>Restorative Care<br/>ProgramThis program exists to assist people disabled by disease or injury<br/>to gain or regain independence through restoration of lost<br/>function, or development of alternative skills that enable them to<br/>cope better with their loss of function

*Continuing Care Program*This program — through the Community Care sub-programs provides support and care for people with terminal illness or disability (including psychiatric) to help them live in their homes for as long as possible. It provides clinical support, including hospice, and environmental support such as cleaning, meals and maintenance.

> The Health Department is also responsible for ensuring that appropriate nursing home and hostel places are available for those who need them, and that all people using these services receive an adequate and affordable standard of residential care. Improvements in lifestyle, environment and health care have increased average life expectancy and, therefore, the number of seniors, whose overall health status is improving

Other HealthIndependent organisations provide a range of important health<br/>servicesServicesservices for Western Australians. Many of these receive funds in<br/>the form of Commonwealth or State grants, but also rely heavily<br/>on support from individuals and private organisations. Some of<br/>the major independent organisations are detailed below.

Western Australian<br/>Alcohol & Drug<br/>AuthorityThe Authority provides treatment, management, care and<br/>rehabilitation to persons experiencing alcohol and other drug<br/>related problems and co-ordinates, promotes and subsidises<br/>research and education activities.

An Education and Research directorate provides drug-related education and training to people working or studying in the health and welfare fields and formulates strategic advice on legislation, policy and services involving alcohol and other drug related issues. During 1991-92, 368 education and training courses were provided to participants numbering in excess of 7,700. There were over 50 government and non-government organisations participating in the Authorities' short courses during the year.

Information, confidential counselling and referral on alcohol, other drug problems and AIDS is available to the public by telephoning the Alcohol and Drug Information Service. During the year, 11,757 calls were received — an increase of 10 per cent from the previous year.

The Alcohol and Drug Information Service maintains a close liaison with the State Health Department's Health Promotion Services Branch and the AIDS Bureau. A specialised counselling service was provided during the Health Departments Drinksafe, Quit and AIDS campaign (as well as information and referral) to callers who were motivated by the campaign's message. Clinical services provided methadone treatment to 751 people. This compared with 722 the previous year.

The Authority provides funding and professional support to non-government organisations engaged in providing services to people with alcohol and other drug problems. Grants made to non-government organisations totalled over \$4 million during 1991-92.

The Perth Aboriginal<br/>Medical ServiceThe Perth Aboriginal Medical Service (PAMS) provides a health<br/>and medical service to the Aboriginal community of Perth.<br/>Funding is received from the Aboriginal and Torres Strait Island<br/>Commission, Aboriginal Hostels Ltd, Department of Health,<br/>Housing and Community Services, Health Department of Western<br/>Australia and the National Australian AIDS Council.

During the 1991-92 financial year, 20,449 people were seen through the medical clinic, at approximately 400 patients per week. There were 1,029 new patients in the 1991-92 period.

Service doctors give regular talks to health worker trainees and mental health nursing trainees at Graylands and the Aboriginal Health Unit at Curtin University of Technology.

PAMS community nurses make regular visits to clients in the community to see and understand the client within the context of their work and family situations; and to assess, educate and counsel as necessary. A prison visitor scheme is also in operation.

The Aboriginal Interpreter Service of PAMS maintains close liaison with major hospitals, doctors, social workers and government agencies. With more traditional Aboriginal people being sent to Perth for medical treatment, patients feel more comfortable when the Interpreter Service is present, especially when discussing legal and medical problems in their own dialect. The Interpreter Service also works in close contact with the Welfare section of PAMS. Donations of toiletries, personal items and warm clothing from welfare and religious groups are distributed to needy patients in hospitals.

The Welfare section of the Service liaises with other Aboriginal agencies and government departments on behalf of clients for food parcels, extension of time for bills payment and donations of clothing and household items.

The Transport section of the Service delivers patients to and from hospital appointments, picks up medical supplies, delivers specimens to hospitals and other general transport duties.

The Family Planning Association is a community based non-profit organisation financed by grants from both State and Commonwealth Government and with self generated funds. The Association strives to achieve excellence in sexual health care by providing services that affirm that all people are sexual throughout life and have a right to information and to personal choice, and that acceptance of sexuality is integral to health.

The clinical services are staffed by doctors and nurses who have developed their knowledge in the area of sexual health. This includes gynaecology, pregnancy counselling, sexually transmitted infection, cervical screening and sexual dysfunction. Confidential counselling and information services in all areas of sexuality are available at all centres. The library in Northbridge has the most comprehensive collection of literature about human sexuality in the State and is open to members of the community.

| Funding-  | (\$)       |
|---|------------|
| Commonwealth Government                         | 1,416,089  |
| State Government                                | 65,000     |
| Project grants                                  | 235,424    |
| Self generated funds                            | 316,792    |
| Total   | 2,033,305  |
| Services –                                      | (No.)      |
| Clinical consultations                          | 19,365     |
| Telephone Information consultations             | 14,171     |
| Community Education programs                    | <b>5</b> 0 |
| Participants in Community Education programs    | 1,056      |
| Professional Education programs                 | 69         |
| Participants in Professional Education programs | 1,254      |
| Library attendance                              | 2,956      |
| -   |            |

| TABLE 6.9 - FAMILY PLANNING ASSOCIATION OF WA | (INC) |
|---|-------|
| 1991-92                                       |       |

Source: Family Planning Association of WA, Annual report

Family Planning Association of WA (Inc)

## Social Welfare and Health

|               | As part of its broad community service activities, the Society   |
|---------------|--|
| (WA Division) | operates the Blood Transfusion Service in Western Australia.     |
|               | Blood collected by the blood transfusion service is processed by |
|               | the Commonwealth Serum Laboratories and blood products are       |
|               | supplied to hospitals and pathologists for use in treatment and  |
|               | analysis.  |

- Silver Chain Nursing Association The Association provides domiciliary services, bush nursing and residential services throughout the State. The major source of funding is the Home and Community Care program, a Commonwealth/State cost sharing agreement which aims to provide an integrated range of services for frail aged and younger persons with disabilities. The number of clients using domiciliary services in 1991 increased 5 per cent from the previous year.
- National Health Surveys The 1989-90 survey was the first of a new series of five-yearly health surveys conducted by the ABS which provides baseline and trend information on a range of health status indicators and health related behaviours of Australians.

Surveys in this series will comprise a core data set, which will be repeated in successive surveys to provide comparative data over time and a supplementary component which can be varied from survey to survey to address key health issues of the day.

Information collected in the survey covered recent and long-term illness, health related actions such as doctor consultations, use of medications, episodes in hospital and aspects of lifestyle which may influence health such as smoking, alcohol consumption and exercise. The survey also collected information on specific women's health issues. This survey is designed to enable information for all topics to be analysed in relation to other topics, and a range of demographic and socio-economic characteristics.

*People experiencing long term conditions* Of the total Western Australian population, 71.2 per cent reported having one or more long term health conditions (conditions which lasted or were expected to last more than six months), with more females reporting such a condition than males (74.0 per cent and 68.5 per cent respectively).

With the exception of the Australian Capital Territory (72.0 per cent), Western Australia had the highest rate of incidence of persons who reported long term conditions of any Australian State or Territory. However, differences in age and sex structure need to be borne in mind when interpreting such conditions.

Diseases of the nervous system and sense organs (eyesight disorders of refraction and accommodation, migraines, deafness, etc) were the most frequently reported long term conditions in Western Australia, affecting 42.6 per cent of the population or approximately 692,000 persons. Diseases of the musculoskeletal system and connective tissue (arthritis, back trouble, etc) — 30.2 per cent, and diseases of the respiratory system (hayfever, asthma,

etc) - 25.1 per cent of the Western Australian population, were also prominent.

Although the rate of incidence of disease for long term conditions is higher for Western Australia than for Australia as a whole, the prominence of condition types shows a similar trend at the national level with diseases of the nervous system and sense organs (38.2 per cent of the Australian population) being the most frequently reported.

## TABLE 6.10 – PERSONS WHO EXPERIENCED LONG-TERM CONDITIONS TYPE OF CONDITION(a) BY SEX. WESTERN AUSTRALIA, 1989-90 (Rate per 1,000 population), (Reference: National Health Survey, Summary of Results, State tables)

| Type of condition   | Males  | Females | Persons |
|---|--------|---------|---------|
| Infectious and parasitic diseases                                       | 10.2   | 7.5     | 8.9     |
| Neoplasms   | 18.7   | 16.7    | 17.7    |
| Endocrine, nutritional and metabolic diseases<br>and immunity disorders | 47.7   | 57.4    | 52.5    |
| Diseases of the blood and blood forming organs                          | (b)5.0 | 17.9    | 11.4    |
| Mental disorders  | 14.4   | 21.5    | 17.9    |
| Diseases of the nervous system and sense organs                         | 393.0  | 460.0   | 426.2   |
| Diseases of the circulatory system                                      | 99.2   | 161.1   | 129.8   |
| Diseases of the respiratory system                                      | 230.3  | 271.7   | 250.8   |
| Diseases of the digestive system  | 49.3   | 53.2    | 51.2    |
| Diseases of the genitourinary system                                    | 9.5    | 53.6    | 31.3    |
| Complications of pregnancy, childbirth and the puerperium               |        | *       | *       |
| Diseases of the skin and subcutaneous tissue                            | 57.0   | 76.3    | 66.5    |
| Diseases of the musculoskeletal system and connective tissue            | 293.2  | 311.4   | 302.2   |
| Congenital anomalies  | *      | *       | *       |
| Symptoms, signs and ill-defined conditions                              | 42.5   | 54.9    | 48.7    |
| Injury and poisoning  | 13.5   | *5.7    | 9.6     |
| Disability n.e.c.   | 8.7    | *5.0    | 6.8     |
| Unspecified illness   | *      | *       | *       |
| Total persons who<br>reported a long-term condition(c)                  | 685.1  | 739.5   | 712.0   |

(a) Condition groups based on chapter headings of the International Classification of Diseases, Ninth Revision (ICD9). Details of the classification and associated coding procedures are contained in 1989-90 National Health Survey: Users' Guide (Cat. No. 4363.0). (b) relative standard error is between 25 and 50 per cent. (c) Each person may have reported more than one type of illness therefore components do not add to totals.

### People taking health related actions

Over three quarters of the population surveyed in Western Australia (75.3 per cent) or Australia as a whole (75.5 per cent), reported taking a health-related action during the two weeks prior to interview. This ranged from using medication or taking vitamins/minerals to having been a hospital inpatient.

In Western Australia during the two weeks prior to interview, 17.5 per cent of those surveyed had consulted a doctor. Trends in Western Australia tended to follow the national average.

Medications Use of medications (including vitamins and mineral supplements) was the most frequently reported health-related action taken. In Western Australia, 69.8 per cent of the population reported using medication in that period. The proportion of persons using medications was higher for females (75.0 per cent) than males (64.7 per cent). Pain relievers (34.9 per cent), followed by vitamin/mineral supplements (22.4 per cent), were the most common types of medication used. The national average showed similar trends.

#### TABLE 6.11 – TYPE OF MEDICATION USED (a) (b) WESTERN AUSTRALIA, 1989-90

| Type of medication                               | Males | Females | Persons |
|--|-------|---------|---------|
| Vitamin and mineral supplements                  | 175.7 | 273.6   | 224.2   |
| Medication for cough or cold                     | 120.8 | 137.2   | 128.9   |
| Medication for allergy                           | 56.8  | 69.1    | 62.9    |
| Skin ointments                                   | 173.5 | 205.3   | 189.2   |
| Stomach medicines or laxatives                   | 58.1  | 93.4    | 75.6    |
| Medications for fluid, heart, and blood pressure | 69.1  | 97.2    | 83.0    |
| Pain relievers                                   | 290.5 | 407.9   | 348.6   |
| Sleeping medications                             | 29.0  | 52.2    | 40.5    |
| Tranquillisers or sedatives                      | 10.6  | 19.4    | 15.0    |
| Other medications                                | 153.5 | 200.3   | 176.7   |
| Total persons who<br>used medication(c)          | 646.8 | 749.5   | 697.6   |

(Reference: National Health Survey, Summary of Results, State tables)

(a) Rate per 1,000 population of same age and sex. (b) Relates to persons who used medication during the two weeks prior to interview. (c) Each person may have reported taking medication for more than one reason and therefore components do not add to totals.

Health Insurance In June 1990, a survey was conducted by the Australian Bureau of Statistics to obtain information about the health insurance arrangements of the Australian population, including details of the type and rate of private health insurance. Similar national health surveys were conducted annually from 1979 to 1983 and again in 1986 and 1988.

Information on health insurance arrangements was obtained for each person in the sampled population, except for dependent full-time students aged 15 to 25 years. The survey findings were organised into 'contributor units'. A 'contributor unit' consists of families and individual members or groups of members of families as defined by their health insurance arrangements.

|                    | In total, 8,916,700 persons in contributor units, representing 52 per<br>cent of the Australian population, were covered by private health<br>insurance at June 1990. The proportion of persons with private<br>health insurance cover varied between the States and Territories,<br>ranging from 59 per cent in South Australia to 41 per cent in<br>Queensland. Western Australia reported 53 per cent or 878,000<br>persons in contributor units with private health insurance.               |
|--------------------|--|
|                    | The proportion of persons with private health insurance cover<br>was similar for residents of State Capital cities to residents of<br>other areas of the State. The exceptions were Hobart and Darwin<br>(61 and 52 per cent respectively), with Tasmania and Northern<br>Territory showing 51 and 45 per cent respectively. The proportion<br>of persons with private health insurance for Perth and for the rest<br>of Western Australia was similar (53.5 and 52.5 per cent<br>respectively). |
|                    | The most frequently reported reasons for having private health insurance in Australia were security/peace of mind (40 per cent) and choice of doctor (37 per cent).  |
| References         |  |
| ABS Publications   | Health Insurance Survey, Australia (4335.0)  |
|                    | National Health Survey, User's Guide (4363.0)  |
|                    | National Health Survey, Summary of Results, State Tables (unpublished data)  |
| Other Publications | Annual Report, Department of Health, Housing and Community Services.   |
|                    | Annual Report, Family Planning Association of W.A.   |
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|                    | Annual Report. Family Planning Association of W.A.   |
|                    | Annual Report, Perth Aboriginal Medical Service.   |
|                    | Annual Report, Red Cross Society (W.A. Division).  |
|                    | Annual Report, Silver Chain Nursing Association.   |
|                    | Annual Report, W.A. Alcohol and Drug Authority.  |
|                    | Annual Report 1990-91, Department of Social Security.  |
|                    |  |

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Annual Report 1990-91, Department of Veterans' Affairs.

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## LAW, ORDER & EMERGENCY SERVICES 7

EMERGENCY SERVICES

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## Chapter 7

# LAW, ORDER AND EMERGENCY SERVICES

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## Chapter 7

# LAW, ORDER AND EMERGENCY SERVICES

# Law and Order

The issues of law, order, and the provision of emergency services are important concerns of the community today. These issues are primarily State responsibilities. The State Government has responsibility for enacting legislation in these areas, providing a police force, judiciary and corrective service, and co-ordinating the provision of various emergency services, to protect the general public. The Law Courts Courts The court system continues to experience rising demands and pressures due to increasing crime rates and more lengthy and complex matters being heard and determined. Courts administered by the Crown Law Department of Western Australia include the Supreme, District, Petty, Children's, Family, Local and Coroner's Courts, as well as the Western Australian Sheriff's Office. Supreme Court of The Supreme Court of Western Australia is constituted under the Western Australia Supreme Court Act 1935 and exercises an original jurisdiction in both civil and criminal cases. It has exclusive jurisdiction in regard to certain cases, including serious indictable offences such as murder and treason. The backlog of matters awaiting a hearing date in the Supreme Court remains constant in the criminal jurisdiction in 1991-92, but increased in the civil jurisdiction. This is due to the increasing complexity of civil matters and the necessity to keep criminal trial delays to a minimum. At June 1992 there were 40 criminal cases awaiting trial. This represents a delay of 4 months to obtain a trial date. The delay for civil matters (backlog of 150 cases requiring 563 hearing dates) between the time of listing and trial date increased from 9 to 16 months in 1991-92.

## The New Perth Children's Court

by Justice H Jackson, President, Children's Court of WA

The new Perth Children's Court complex at 160 Pier Street, Perth was opened to the public on 15 June 1992. The new building was specifically designed to accomodate the differing procedures and processes required in dealing with both juvenile offenders and with the Care and Protection of neglected, abused and uncontrolled children. Care and Protection matters, for example, are dealt with in a separate court incorporated within the new building. This Court, known as Court Number 6, has a small interview room, a waiting room equipped with toys and is designed in non-threatening fabrics. A separate entrance has been provided for the interview and waiting rooms to that used by the public for other matters. Care and Protection cases are listed on specific days and separate lists are provided for delinquents and offenders. The court has also established a separate numbering system and keeps statistics for Care and Protection cases.

The court complex also provides monitoring facilities to enable a full transcript to be taken by electronic transcription of proceedings in appropriately difficult or complex matters. One court has also been equipped with closed circuit television facilities for use where children alleged to have been abused do not wish to be confronted by their abuser. Two separate remote witness rooms are cabled for closed circuit television. Of these one is now fully equipped. This means that for either Care and Protection or offending matters the court can provide both full transcript facilities and closed circuit television facilities. When funds permit these closed circuit television facilities will also be replicated in Court 5.

Gradually the Court is establishing a library containing reference material in relation to Care and Protection and child abuse and neglect issues as well as delinquency and criminal law.

As far as possible the Court has therefore implemented the principles set out in the Edwards Report, the Carney report and other reports requiring separation of Care and Protection matters from offending matters and to utilise the provisions contained in the new Acts Amendment (Evidence of Children and Others) legislation concerning closed circuit television. Such facilities, and the calm and soothing atmosphere in which they are set, were simply not possible in the old Court building.

## Law, Order and Emergency Services

Installation of equipment for a closed circuit television system for taking the evidence of children and other vulnerable witnesses commenced in the Perth Supreme Court during 1991-92.

District Court of The District Court of Western Australia, constituted under the District Court Act 1969, is a court between the Supreme Court and the Courts of Petty Sessions.

The number of criminal trials held in the District Court increased from 295 in 1990-91 to 425 in 1991-92. The backlog of criminal cases awaiting trial continued to increase. At June 1992 there were 557 cases awaiting trial, a 24 per cent increase (109 more cases) from June 1991. The number of pre-trial conferences within the District court increased by 593 to 3,226 in 1991-92. The delay for a civil trial date continues to increase. At June 1992 a delay of approximately 16 months existed between entry for trial, and trial. To reduce the delay in civil trials the appointment of an additional Judge occured in 1992-93.

- Courts of Petty Sessions are established under the Justices Act Petty Sessions Courts of Petty Sessions are held throughout the State and deal with minor criminal cases, as well as the hearing of committal proceedings in cases of more serious offences. The number of actions dealt with in the criminal jurisdiction of magistrates' courts decreased by 17 per cent in 1991-92. The decrease was due to the continued expansion of the Infringement Notice Registration and Enforcement Procedure system (INREP). The number of matters registered with INREP increased by 51 per cent from 36,054 to 54,315 in 1991-92.
- Children's Courts Children's Courts in Western Australia are now established under the Children's Court of Western Australia Act 1988 which came into force on 1 December 1989. This court deals with all summary offences (and certain other indictable offences) for offenders under the age of 18.

The introduction of the formal cautioning of juveniles and raising the maximum age for children's panel appearances has led to a 19 per cent decrease in the number of charges in the Children's Court for the 12 months to June 1992 compared to the previous year. A further small decrease in appearances is anticipated as less serious traffic matters will be processed by INREP.

A new Perth Children's Court complex was opened in June 1992. The total project cost was approximately \$9 million.

*Family Court of Western Australia* The Family Court of Western Australia hears petitions for divorce and has jurisdiction in the welfare and custody of children and disputes about maintenance and property of marriage.

Local Courts Local Courts are held throughout the State to determine minor civil issues. Jurisdiction is limited in most cases to claims not exceeding \$10,000. The Court also handles disputes between

landlord and tenants under the provisions of the *Residential Tenancies Act 1987*. The number of complaints lodged in the Local Court increased only marginally in 1991-92. Residential tenancy applications lodged increased by 123 per cent from 3,399 in 1990-91 to 7,610 in 1991-92.

- *Coroner's Courts* Coroner's Courts are responsible for inquiring into the circumstances of a person's death, where that person has suffered a violent or unexpected death, or where the nature of their death is uncertain. Coroner's Courts also inquire as to the cause and origin of fires.
- **The Jury System** The operation of the jury system is governed by the *Juries Act* 1957. Indictable offences are tried before a Judge and twelve jurors sitting in the criminal jurisdiction of either the Supreme Court or District Court, depending on the gravity of the offence. Juries for civil cases comprise six persons.

Subject to the Juries Act, a person who is enrolled on any of the rolls of electors entitled to vote at an election of members of the Legislative Assembly of the State Parliament, is liable to serve as a juror at trials in the jury district in which he or she is shown to live by any of those rolls of electors. Each year, a Juror's Book is prepared by the Chief Electoral Officer for each jury district within the State for persons who qualify as jurors. Certain persons are excluded from jury service and persons may be excused on the grounds of illness, undue hardship, circumstances of sufficient weight, importance or urgency, or recent jury service.

Law Reform Commission of Western Australia Commission's function is to examine proposals for the review of various laws which have been referred to it by the Attorney-General. It may also submit suggestions to the Attorney-General for review.

> The commission usually issues a discussion paper dealing with the issue, and invites comments from interested persons. A report is then made to the Attorney-General. Recent reports issued by the commission deal with the criminal process and mental disorder, the effect of marriage and divorce on wills, medical treatment for the dying, evidence of children and other vulnerable witnesses, and Police Act offences. Recent discussion papers deal with professional privilege for confidential communication and limitation and notice of actions.

> As at October 1992, the commission had issued a total of 80 reports, 74 of which recommended legislative changes. To date, 49 of these have been implemented by legislation passed by the Western Australian Parliament.

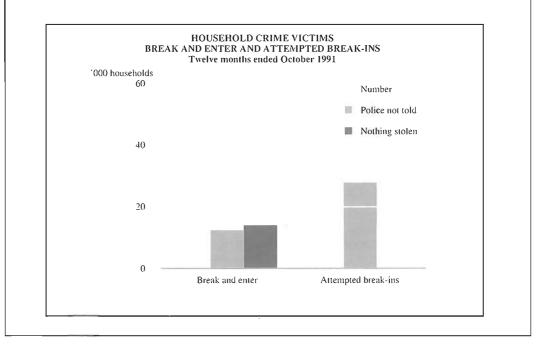
## Crime Victims

In October 1991, the ABS conducted a Crime Victims Survey on the perceived level of crime and on the incidence of certain crimes in the Western Australian community during the previous twelve month period. The Crime Victim Surveys are important in that they provide additional information on the nature and extent of crime as well as furnishing the means for developing victim profiles. They also provide valuable information on incidents which are not reported to the police and the reasons for such non-reporting. The surveys do, however, have some limitations. For example, information cannot be gleaned about crimes without specific victims, e.g. trafficking in narcotics, while under-reporting can occur of crimes of a delicate or personal nature such as sexual assault or domestic violence.

## Perceptions of Crime in the Community

The survey found that 41.4 per cent of people did not consider that there were nuisances from crime in their neighbourhood. Of those who did perceive a nuisance, over half were most worried about housebreaking and burglary. Only a relatively small proportion (5.5 per cent of all people) thought that issues affecting personal safety (sexual or other assault, louts and youth gangs, prowlers and loiters) was the main concern. Many people who felt that there were crime or nuisance problems in their neighbourhood did express concern about more than one issue. The most frequently reported issues of concern were housebreaking and burglary; car theft; dangerous or noisy driving; and vandalism/graffiti.

The perception that the threat of becoming a victim of a property crime was more likely in the community than the threat of becoming a victim of a personal crime was also reflected in the survey's results on victimisation rates. A far larger proportion of households had experienced a property crime in the twelve months ending October 1991 than the proportion suffering a personal crime.



## **Property Crime**

Of the approximately 588,100 in scope households in the survey, some 92,000 households (or 15.6 per cent) experienced a motor vehicle theft, break and enter or attempted break-in. Lone parent households encountered the highest rate of property crime with 23.4 per cent in that category reporting an offence.

Police were informed of 72.6 per cent of all break and enter offences, whereas only 27.2 per cent of attempted break-ins were reported. Some 45.4 per cent of people experiencing attempted break-ins did not report them because they believed the crimes were too trivial or unimportant. Interestingly, nothing was stolen in 31.1 per cent of the break and enter offences.

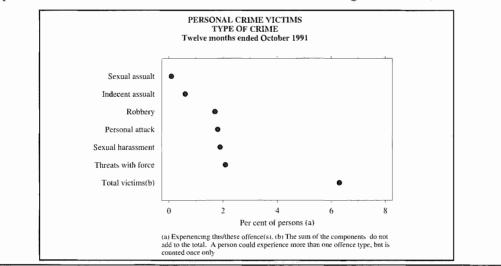
## **Personal Crime**

It was estimated that there were 1,239,200 persons in scope of the survey, of which 54,600 persons (or 4.4 per cent) were victims of a robbery, personal attack, threat with force, or sexual or indecent assault and 23,700 persons (or 1.9 per cent) reported being subjected to sexual harassment during the twelve months ended October 1991. While a greater proportion of males (6.5 per cent) than females (6.1 per cent) were victims of personal crime, females experienced a higher incidence of sexual or indecent assault and sexual harassment than males by a factor of about 8 to 1.

The Survey revealed that young people aged between 15-24 years were the most likely to become victims, with 12.8 per cent in this age group reporting that they had been victims of a personal crime. In comparison, only 1.7 per cent of persons aged over 55 years were victims. The unemployed reported victimisation rates of 11.2 per cent while separated, and never married persons also reported relatively high rates of victimisation at 11.4 and 12.5 per cent respectively.

The percentage of people who reported crimes to the police varied markedly, depending on the type of crime. Police were informed of the offences in 62.7 per cent of robberies but in only 30.4 per cent of personal attacks, 19.0 per cent of threats with force and 7.7 per cent of sexual or indecent assaults.

More detailed information on the Crime Victims Survey can be found in the ABS publication *Crime Victims Western Australia, October 1991* (Catalogue No. 4506.5)



## Legal Aid

Legal Aid Commission of Western Australia People in Western Australia may receive legal advice, guidance and financial assistance towards their legal costs from Legal Aid Western Australia. Legal Aid is an independent statutory body and is funded principally by Commonwealth and State Governments.

Legal Aid has offices in Perth (09) 261 6222 and (008) 80 616; Fremantle (09) 335 7108; Midland (09) 274 3327; Broome (091) 92 1888; Bunbury (097) 21 2060; and South Hedland (091) 72 3733.

Legal Aid takes a solution orientated approach to resolving legal problems and concentrates on the provision of self-help assistance including legal advice and minor assistance, workshops, forums, kits and pamphlets. Litigation assistance is available to eligible applicants for legal aid. In 1991-92, 18,244 people received legal advice and 14,839 requests for financial assistance towards legal costs were received. Of these, 9,122 were granted and comprised:

| Family Law   | 2,350 |
|--------------|-------|
| Criminal Law | 5,738 |
| Civil Law    | 1,034 |

Legal Aid currently employs a staff of 154 of which 53 are legally qualified. Legal Aid Western Australia has accepted responsibility to develop access to justice for the benefit of all Western Australians.

- Aboriginal Legal The Aboriginal Legal Service of Western Australia is the largest community based Aboriginal organisation in the State. Among its aims is the provision of direct relief to all Aboriginal people suffering poverty, distress, or helplessness as a result of their involvement with the laws of the Commonwealth or States of Australia. Since opening its doors in 1973 with a staff of six, the service has grown to 71 people working out of 14 offices all over the State. The Aboriginal Legal Service is funded by a grant from the Aboriginal and Torres Strait Islander Commission.
- State Ombudsman The Commissioner for Administrative Parliamentary Investigations (better known by the public as the State Ombudsman) handles complaints about things that go wrong in the administration of State Government departments, City and Shire councils and most statutory authorities (e.g. State Energy (SECWA), Commission of Western Australia Transperth, University of Western Australia). The State Ombudsman also handles complaints about the conduct of members of the Western Australian Police Force.

The State Ombudsman cannot handle complaints about non-government matters. It is outside the Ombudman's powers to enquire into the actions of companies, associations, clubs and private persons. There are also some complaints about government matters that the Ombudsman cannot investigate. These include complaints about decisions made by Government Ministers. Complaints about decisions made by courts of law fall outside the ombudsman's jurisdiction.

All complaints directed to the Ombudsman must be in writing, the Ombudsman's staff can help to write a letter of complaint.

In the financial year 1991-92, the State Ombudsman received 2,226 complaints (an increase of 11.3 per cent over the previous year), involving 2,529 allegations, 169 government agencies. In 44 per cent of the cases in which investigations were undertaken, the Ombudsman was able to provide assistance to the complainant.

**Corrective Services** The Western Australian Department of Corrective Services is responsible for the management, control and security of prisons; the custody and welfare of prisoners; the management and supervision of offenders in the community; and the management and control of Community Corrections Centres. It ensures that sentences imposed by the judiciary are carried out, and assists sentencing and releasing authorities with their deliberations. There are two main operational divisions in the department - Prison Operations and Community Corrections.

| Institution     | Males | Females | Total |  |
|-----------------|-------|---------|-------|--|
| Prisons         | 1,774 | 87      | 1,861 |  |
| Police lock-ups | 102   | 23      | 125   |  |
| Total           | 1,876 | 110     | 1,986 |  |

| TABLE 7.1 – NUMBER OF PRISONERS, | DAILY AVERAGES 1991-92 |
|----------------------------------|------------------------|
|----------------------------------|------------------------|

Source: Department of Corrective Services

*Prison Operations* The Prison Operations Division is responsible for maintaining security and good order in 14 prisons throughout the State. It is also responsible for looking after the welfare needs of prisoners as well as the constructive use of their time through work, education and recreation, and providing the opportunity to gain skills they can use to integrate into the community on their release.

*Community* The Community Corrections Division is responsible for administering community based supervision orders imposed by Courts, the Parole Board and other releasing authorities, from its 13 Community Correction centres located throughout the State.

It also controls four specialist units — the Central Law Courts Advice Team, which provides pre-sentence advice to the courts; the Intensive Supervision Unit, which monitors the Home Detention scheme and oversees Australia's only Bail Hostel; the Aboriginal Unit, which assists in dealing with Aboriginal offenders and promotes an understanding of Aboriginal issues in the department; and the Victim-Offender Mediation Unit, formed to provide offenders convicted of non-violent or property related offences with the opportunities and mechanism to make amends to their victims.

# **Emergency Services**

Police

The mission of the Western Australian Police Department is to "preserve the peace within the community of Western Australia". Every sworn member of the department has a duty to preserve the peace, protect life and property, prevent offences against the law, detect and apprehend offenders and render help to those in need.

To carry out this mission, Western Australia is serviced by 162 police stations within 16 regions, which includes the Perth metropolitan area. There are 4,112 sworn police officers and they are supported in this task by 739 public service staff.

|                                    | <u>Number of crimes</u> |         | Offenders apprehended |        |        |
|------------------------------------|-------------------------|---------|-----------------------|--------|--------|
| Offence                            | Reported                | Cleared | Male                  | Female | Total  |
| Homicide                           | 58                      | 54      | 35                    | 11     | 46     |
| Indecent assault (a)               | 1,532                   | 1,223   | 376                   | 8      | 384    |
| Deprivation of liberty and abducti | on 167                  | 119     | 100                   | 9      | 109    |
| Aggravated sexual assault          | 852                     | 756     | 197                   | 9      | 206    |
| Sexual assault                     | 196                     | 141     | 63                    | 6      | 69     |
| Breaking and entering              | 51,373                  | 6,088   | 5,123                 | 674    | 5,797  |
| Robbery                            | 698                     | 233     | 231                   | 23     | 254    |
| Serious assault                    | 2,594                   | 1,934   | 1,328                 | 188    | 1,516  |
| Assault public officer             | 663                     | 656     | 427                   | 94     | 521    |
| Common assault                     | 4,657                   | 3,339   | 1,642                 | 338    | 1,980  |
| Stealing                           | 84,360                  | 14,661  | 6,999                 | 3,487  | 10,486 |
| Motor vehicle theft                | 16,644                  | 3,931   | 1,864                 | 218    | 2,082  |
| Fraud                              | 10,472                  | 5,231   | 782                   | 393    | 1,175  |
| Damage                             | 26,478                  | 6,660   | 2,840                 | 349    | 3,189  |
| Arson                              | 479                     | 98      | 73                    | 9      | 82     |
| Unlawfully on premises/curtilage   | 3,072                   | 844     | 925                   | 130    | 1,055  |
| Drugs                              | 13,266                  | 13,266  | 7,934                 | 1,306  | 9,240  |
| Bomb hoax                          | 174                     | 30      | 18                    | 5      | 23     |
| Other indictable offences          | 313                     | 241     | 223                   | 24     | 247    |
| Other summary offences             | 2,079                   | 594     | 452                   | 53     | 505    |
| Total                              | 220,127                 | 60,099  | 31,632                | 7,334  | 38,966 |

#### TABLE 7.2 – CRIMES REPORTED: 1991-92

(a) Excluding all other categories of sexual and other assaults. Source: Western Australian Police Department

The public service staff fill positions within the portfolios of Crime Operations, General Operations, Operations Support, Traffic Operations and Administrative areas.

In providing a policing service the Western Australian Police Department has adopted a Community Policing ethos in which the general public and police work in unison on programs dedicated to reducing crime and providing a safer environment for everyone. The programs include Neighbourhood Watch, Rural Watch, school based police officers, bicycle safety officers and road safety officers.

Police Air Wing The Western Australian Police Air Wing commenced operation in November 1974 and was set up by the Road Traffic Authority to conduct traffic operations. This was based on an aerial surveillance system, using road markers to detect speeding vehicles, developed in Canada. The Air Wing used Cessna 172 and 182 airplanes and these were flown by a combination of police and civilian pilots.

In 1976, the Police Traffic Branch purchased a Cessna 172, which was used solely for traffic duties. By August 1982, the Traffic Branch had purchased a twin engined Partenavia and the Air Wing had doubled in staff to become a self contained unit. In May 1986, the Cessna 172 purchased in 1976 was traded for a Cessna 182 and in 1987 the Air Wing moved to its current location of Jandakot, where it continued traffic operations around the State. Time has changed the role of the Air Wing from solely traffic duties to transport, drug search, surveillance and search and rescue.

In April 1989, Air Wing commenced operations in the North-West with a Cessna 182 based at Karratha, with one full time pilot. The Partenavia was traded for a Cessna 310 in July of 1989. In the latter part of the same year, the Air Wing commenced Helicopter operations with the use of a hired Bell 2061 Long-range.

In May 1990, the Police Department purchased a twin engined Aerospatiale AS3551F1 Squirrel Helicopter. This aircraft was used for as variety of tasks including search and rescue, aerial patrols, drug search and other work. In 1992 the purchase of a Navajo gave the Air wing a greater capacity to accommodate transport duties and search and rescue operations throughout the state. In May 1992, an office was opened at Kalgoorlie, with a Cessna 182.

Westpac PoliceFollowing the purchase of the helicopter, a sponsorship<br/>arrangement for its operation was negotiated with Westpac<br/>Banking Corporation, Western Australian Lotteries Commission<br/>and the State Energy Commission of Western Australia, wherein<br/>the Westpac Police Rescue trust was formed. The role of the<br/>helicopter is multi-functional and includes such uses as:

- a) medi-vac helicopter assisting St John Ambulance, Royal Flying Doctor Service and other organisations in the evacuation of badly injured persons;
- b) observation platform in assisting the Bush Fires Board, CALM and other authorities in determining direction and strengths of bush fires, thus allowing the most efficient deployment of bush fires personnel;
- Police patrols, assisting police ground crews in all facets of police work (i.e. high speed chases, observational role in locating offenders, missing persons, escapees, drug searches, stolen vehicles searches, etc);
- d) search and rescue on land or at sea for missing persons, overdue vessels, aircraft, etc, with the capability of winching those persons to safety when necessary;
- e) evacuation of badly injured or distressed persons from ships at sea; and
- f) Community Policing, displays, functions, school visits.

This machine was fitted out for dual pilot operations and contained a breeze rescue hoist and high intensity Nite Sun SX-16 search light.

It was crewed by one pilot and two police officers acting as winch operator and crewman. Both pilot and crew were required to complete a helicopter underwater escape training course as part of training requirements. The crew were further trained in advanced first aid, including pain control drug administration. The total helicopter operation was three pilots and six police aircrew.

From June 1990 to 8 May 1992, the Westpac police helicopter flew 1,232 hours, including three medivacs from ships, the rescue of 24 people from the damaged Greek oil tanker *Kirki* off Cervantes, and patient medivacs from Useless Loop in the North through to Albany in the South.

During the period 1 July 1991 to 31 August 1992 inclusive, the Westpac Police Helicopter completed the following duties:

| Number of patrols | 143 | Search & Rescue    | 24  |
|-------------------|-----|--------------------|-----|
| Rescues effected  | 26  | Observations made  | 430 |
| Persons located   | 8   | Arrests            | 26  |
| Photography tasks | 7   | Fires spotted      | 5   |
| Vehicles checked  | 87  | Passengers carried | 174 |

## Operation Isabella: A Rescue That Beat the Odds

by Chief Inspector C.N. Calameri, Kununurra Police Office.

Whilst Australians were happily celebrating the end of 1991 and the introduction of 1992, 56 Chinese Nationals were landing on our remote northern shore.

In an attempt to reach safety the party of 56 refugees began walking across some of the most inhospitable and dangerous country in the world. At about 0730 hours on 16 January 1992, two tired refugees walked onto the King Edward River Station airstrip. They were the forward party of the 54 others and had walked across country infested with wild scrub bulls, venomous snakes and waterways thick with 4-6 metre salt water crocodiles, not to mention their smaller fresh water cousins.

Thus began what was probably the biggest search and rescue operation Australia has ever seen. What follows is a diary of events which tells the amazing story of Operation Isobella.

### Thursday, January 16th - Day One 0815 hours

At the Kununurra Police Station, Inspector Con Calameri receives a message from Wyndham Police, regarding an urgent call from Mrs Debbie Holt of the King Edward River Station, describing a bizarre situation at the homestead. Two ragged Asian figures had stumbled out to the early morning mist and were spotted by Cara Holt as she was driving along the homestead's airstrip. After initial communication had been established through sign language and crude drawings in the sand, Cara drove the pair to her parents at the homestead.

An unbelievable story unfolded. The two told the astounded family that they were refugees, fleeing mainland China and had been shipwrecked in Swift Bay, Montegue Sound. They were part of a group of 56 people who had been walking for several days through some of the roughest terrain in the world. Weather conditions at the time were almost unbearable, reaching 43°C and food was scarce, but they were in luck finding fresh water from the recent thunderstorms.

Inspector Calameri dispatched two men to the King Edward River Station and advised the Immigration Department in Darwin. He then called Debbie Holt and was told that another five or six refugees had been found by her husband. Debbie invited Inspector Calameri to the main house to coordinate the search - an offer gratefully accepted.

Inspector Calameri contacted Customs and Quarantine and other agencies, and arrived at King Edward River Station to set up a forward command post and coordinate the search.

King Edward River Station, once known as Doongan Station, is situated about 180 kilometres south of Kalumburu on the main Kalumburu Road. It has an all weather registered airstrip and covers an area of some one million acres. Within a few hours of the initial call officers from the Police, Immigration, Customs, Quarantine and the Health Departments converged on the station.

### 1430 hours

A specially equipped search and rescue helicopter from Darwin is placed at the disposal of the police to look for the remaining refugees. This machine was found to be totally unsuitable because of its size and bulk and was sent back to Darwin. Inspector Calameri then ordered three Jet Ranger type helicopters and requested pilots who had mustered in the area to attend and assist in the search. These machines were dispatched from Kununurra and arrived at the King Edward River by about 1530 hours. Whilst waiting for the helicopters, the Inspector dispatched a search team in three of Mr Holt's bullcatching 4 x 4 vehicles with instructions that they survey the main Kalumburu Road in an attempt to locate any of the missing people.

### 1600 hours

Helicopters had arrived and were immediately dispatched to assist ground parties to search along the well defined Kalumburu Road and between them were successful in locating more of the missing refugees. By 1830 hours 36 of the missing people had been found and secured at the King Edward River homestead. Immigration Officials had commenced the task of interviewing the refugees with the help of interpreters and arrangements were made to fly them out to Darwin for further assessment.

The 36 people had been located spread along the Kalumburu Road in small groups. Several were suffering from heat and sunburn, whilst the majority were footsore and had blistered feet. Despite their ordeal they were in relatively good condition after walking such a difficult terrain for approximately eleven days.

### Friday, January 17th - Day Two 0400 hours

Inspector Calameri assessed his resources and drew up a course of action. Maps were arranged for search parties and additional copies were brought out by the helicopters, along with supplies. The helicopter pilots were reputed to be the best in the Kimberley, having previously mustered in the search area. Station owners assisted police in determining the possible paths the refugees could have taken. Debbie Holt proved tireless in her efforts to ensure that people were well fed and had sufficient accommodation. Inspector Calameri was convinced that with this support, he would find all the missing refugees.

#### 0900 hours

Three helicopters and one fixed wing plane were now at the disposal of the search party, and the Police Air Wing were also tasked to assist. Also enroute was the Coastwatch 'Strike' Aero Commander. The search had begun in earnest. The most likely spot to find the missing people was considered to be in an area bounded by the Indian Ocean on the west, the Mitchell River to the east and the Roc/Moran River to the south. This area covered some three million acres. Wyndham and Kununurra Hospitals were put on standby. Over the next few days the remaining refugees, with one exception, were located.

### Saturday, January 25th - Day Nine 0800 hours

The search had been downgraded by this time. The 55 refugees already found had been escorted to Darwin for assessment by Immigration Authorities. All agencies had been returned to the their respective areas.

Inspector Calameri remained at King Edward River Station and retained one helicopter and the fixed wing Police 310 Cessna plane. Two observers were also retained to continue the search for the last refugee.

#### **1230 hours**

The Inspector dispatched the Police Air Wing to patrol the major road north of the King Edward River, follow the northern coastline and rendezvous at the boat landing site in Swift Bay. He took the remaining Jet Ranger helicopter and crew and patrolled south of King Edward River to the southern boundary of the search area and intended to continue a sweeping pattern back north towards the landing site.

Whilst travelling in a westerly direction about 30 kilometres west of King Edward River along a beef track, Inspector Calameri sighted the last refugee. The refugee was very thin and weak and was dragging himself along the path on his knees. He was immediately given some food and first aid and assisted to the helicopter to be flown to King Edward River homestead. Concern was expressed for his condition and the Royal Flying Doctor Service was put on standby and all concerned parties notified of the result.

#### **1800 hours**

The refugee located earlier today, who had walked in excess of 200 kilometres, had recovered from his ordeal and rested. No further medical attention was required. Immigration Department requested that he be conveyed to Port Hedland Detention Centre as soon as practicable and this was done by Police Air Wing.

The search was declared officially over, 10 days after it began and the operation acclaimed as highly successful.

The operation, billed as the largest in Australia was a learning experience for several agencies and proved that all could operate together successfully. To achieve a 100 per cent success rate at a relatively low cost in terms of resources used, can justifiably be described as a major success. Recognition must be given, however, to the roles played by all the people involved in the search, particularly the crucial role played by the Holt family, who provided a high degree of tenacity and unquestioning support.



The last refugee is found. Rendering assistance is Chief Inspector Con Calameri (centre) and Tristen Jubb (on the left). *Photograph:* Courtesy WA Police Dept. On the 8 May 1992 the helicopter landed heavily and caught fire at Kelmscott Primary School. The occupants escaped with minor injuries but the helicopter was destroyed by fire.

As a result, the Police Department has purchased a 1990 Kawasaki BK117 twin engine helicopter. This helicopter can carry up to eleven people, has a Lucas Western double lift winch and a Nite Sun SX16 search light. It is fitted for dual pilot all weather operation and has an operational range of 235 Nautical Miles (Nm) (463 Km) or 300 Nm (556 Km) with the fitting of the long range fuel tank.

#### Fire

*Fire Brigades Board* The Fire Brigades Board is a Statutory Authority set up under the provisions of the *Fire Brigades Act 1942-1985*. Its mission is "to protect people and property within Western Australia from fire and the risk of fire, chemical and hazardous goods accidents, and to rescue people who are trapped". The mission statement succinctly identifies the following key roles of the fire service: fire suppression; chemical and hazardous goods accident combat; rescue; fire prevention; and fire safety education.

Where only volunteer fire brigades are established the board is funded from Consolidated Revenue Funds. Permanently staffed fire districts are financed 75 per cent by the insurance companies, 12.5 per cent by Local Government Authorities and 12.5 per cent from Consolidated Revenue Funds. In 1991-92, expenditure amounted to \$57,561,841.

Within the Metropolitan Fire District there are 17 permanently staffed fire stations (one of these supported by volunteer fire-fighters) and two wholly volunteer stations. Permanent fire-fighters are also stationed at Albany, Armadale, Bunbury, Geraldton, Kalgoorlie and Northam. At each of these locations the permanent crews are supported by volunteer brigades. Volunteer fire brigades are established in a further 77 country towns.

In total, at 30 June 1992, the board was authorised to employ staff in 956 positions. Of these positions 796 were operational posts and the remaining 160 related to either clerical, technical or general support functions. There were also 2,077 volunteer fire-fighters registered.

During 1991-92 a total of 13,620 incidents were responded to throughout the State. Of these 4,691 (34.4 per cent) were false alarms, 1,114 (8.2 per cent) were special service calls (rescues, hazardous goods accidents, humanitarian services etc) and the balance of 7,815 (57.4 per cent) were either grass/scrub/bush, transport or property fires. Of those 7,815 fires attended, 7,076 (90.5 per cent) resulted in damage estimated at up to \$5,000 per fire. In terms of fire safety, the board conducted 1,412 building plan inspections, 5,839 building inspections, 1,376 connections of direct brigade alarms to premises, 219 fire investigations and 36 fire investigation lectures.

Education into fire safety involved conducted tours through the Fire Safety Education Centre, involving 8,187 children and 3,785 adults.

The Brigade currently has 274 fire fighting appliances, 128 non-fire fighting appliances and 69 rescue trailers.

Bush Fires Board Constituted under the Bush Fires Act 1954, the board's charter is to administer the provisions of the Bush Fire Legislation and to maintain a high standard of rural fire safety. The mission of the Bush Fires Board is to "Provide leadership to minimise the impact of fires on the rural community".

The Bush Fires Board is responsible for the overall administration of the Bush Fires Act and Regulations, with day to day administration and the maintenance of Bush Fire Brigades being the responsibility of Local Government Authorities.

Volunteer Bush Fire Fighters are organized statewide into 813 Bush Fire Brigades with a membership in the order of 30,000 persons.

- **St. John Ambulance** St John Ambulance Australia provides the State's ambulance service through its Western Australian operations. It teaches First Aid and supplies first aid personnel for attendance wherever large numbers of people meet. It also administers Medic Alert, the medical identification system worn as a bracelet or pendant. St John Ambulance is a non profit organisation and makes a charge for services. The State Government subsidises the annual shortfall approximately 35 per cent of operating costs.
- Ambulance Transport Ambulance transport is not free and is charged at a rate of \$2.25 per ambulance kilometre travelled plus a call-out fee of \$100. Lesser charges apply in some country areas where volunteer officers operate the service. The Ambulance Benefit Fund provides insurance against these charges with yearly subscription rates being \$34.00 for families and \$19.50 for singles (1992). In the Ambulance Transport Service there are 233 paid ambulance officers based in the metropolitan area and 36 at eight major country centres. Elsewhere nearly 2,000 dedicated volunteers provide the service in their communities. An Ambulance Officer. The Ambulance officers. The Ambulance service transported 86,300 patients last year, with the time taken to reach an emergency call in the metropolitan area averaging 8.8 minutes.

### Law, Order and Emergency Services

- *First Aid Training* Vitally important first aid skills which include life saving techniques are regularly taught to the public, industry and some government department employees by qualified St John instructors. In 1992, 35,000 people completed St John Ambulance First Aid courses throughout Western Australia. St John Ambulance is recognised as a leader in first aid training, conducting courses in: Occupational First Aid; First Aid at Work; Senior First Aid; basic life support; and instructor and refresher courses. The Service also works closely with the Royal Flying Doctor Service in transporting patients throughout the State.
- Volunteer First Aid Service Volunteer First Aiders perform an important role wherever large crowds assemble. Their many public duties regularly include Anzac Day Parades, the 96FM Skyshow, the Royal Show, country shows and many sporting events. The operations branch volunteers wear instantly recognisable black and white uniforms. The total membership of 848 trained volunteers include 326 cadets.
- Medic Alert The Medic Alert Foundation, administered by St. John Ambulance, provides bracelets or necklets to persons who have hidden medical conditions which could be life threatening in emergency situations or where inappropriate drugs or medications are administered. Over 45,000 Western Australians have the protection of this internationally recognised foundation.

The Royal Flying Doctor Service of Australia (RFDS) is a **Royal Flying Doctor Service** financed by grants non-profit organisation from the Commonwealth and State Governments and by private donations. The principal function of the service is to provide aerial medical services for all persons in Western Australia irrespective of their location and economic situation. Its mission is "to bring peace of mind to rural Australians by providing the world's best aerial health service". There are six Flying Doctor bases in Western Australia, based in Derby (administered from Melbourne), Port Hedland, Carnarvon, Meekatharra, Jandakot and Kalgoorlie, operating with a total of 18 aircraft (7 Cessna Conquests, 7 Piper Navajo's, 1 Piper Mojave and 3 Beechcraft Kingair's). For the year ended 30 June 1992, the RFDS in Western Australia made 9,673 landings, flew 1,886,239 nautical miles, was in contact to 66,263 patients, 5,187 of whom required transportation. In Western Australia, the RFDS has 129 staff, 27 of whom are pilots, 9 doctors (plus subcontracted doctors in Derby), 22 nurses and 9 radio staff.

> The radio network of the Royal Flying Doctor Service is regularly used in the work of Schools of the Air conducted by the Ministry of Education, and also for the transmission and receipt of telegrams and radio telephone calls. In addition, it may be used in connection with flood relief, in searching for lost parties and during cyclones or other emergencies.

| State Emergency<br>Service | The Western Australian State Emergency Service was established<br>to assist the community in the event of emergencies and disasters.<br>In 1985 it became part of the Western Australian Police<br>Department where it remains as an identifiable entity. It is<br>currently headed by a director who is a uniformed police officer<br>at Chief Superintendent rank.  |
|----------------------------|---|
|                            | The state headquarters is located in the Perth suburb of Belmont<br>with regional headquarters in Port Hedland, Carnarvon,<br>Geraldton, Kalgoorlie, Northam, Bunbury, Albany and at two<br>locations in the Perth metropolitan area. The state and regional<br>headquarters are staffed by permanent public service staff.<br>Subsidiary units exist in most local government areas and are<br>closely affiliated with their respective local government<br>authorities. Staffing at this level, and to some extent at regional<br>headquarters level, is by volunteers. |
|                            | The volunteer staff of the organisation respond to calls from the<br>police and public to assist in emergency situations of various<br>types including searches for lost people, major vehicle accidents,<br>floods, building collapses, cyclones, storm surges and a number of<br>minor events. They also provide support for services in<br>emergencies as and when required.   |
| References                 |   |
| ABS Publications           | Court Statistics: Higher Criminal Courts, Western Australia (4501.5)  |
|                            | Court Statistics: Courts of Petty Sessions, Western Australia (4502.5)  |
|                            | Court Statistics: Children's Court, Western Australia (4503.5)  |
| Other Publications         | Annual Report 1990-91. Aboriginal Legal Service of Western Australia (Inc).   |
|                            | Annual Report for the year ended 30 June 1991. Crown Law Department of Western Australia.   |
|                            | Annual Report 1989-90. Legal Aid Commission of Western Australia.   |
|                            | 99th Annual Report 1990-91. St. John Ambulance Australia.   |
|                            | Report of the Parliamentary Commissioner for Administrative<br>Investigations 1990.   |
|                            | 56th Annual Report 1991. Royal Flying Doctor Service of Australia (Western Australian Section) Incorporated.  |
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## Chapter 8

# **EDUCATION**

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### Chapter 8

**Pre-Primary** 

Education

## EDUCATION

In Western Australia, education at pre-primary, primary and secondary levels is provided at government schools administered and staffed by the Ministry of Education and at non-government schools, most of which are conducted by the principal religious bodies. Technical and further education is offered by the Department of Employment, Vocational and Educational Training, and by three independent regional colleges. The latter also provide higher education facilities. Additional higher education is available through four State universities and one private university.

Before starting primary school, a child may undergo pre-primary education at either a government or non-government school. A child may also attend a Government staffed community pre-school or an independent pre-school. Attendance is optional at all centres. Children start pre-primary during the year in which they turn five years of age, although they may start during their fourth year where vacancies exist.

|                                       | 1989          | 1990       | 1991       |
|---------------------------------------|---------------|------------|------------|
| NUM                                   | IBER OF CENTI | RES        |            |
| Government—                           |               |            |            |
| Pre-primary<br>Community pre-school   | 511<br>133    | 526<br>123 | 530<br>121 |
| Non-government-                       |               |            |            |
| Pre-primary<br>Independent pre-school | 103<br>22     | 121<br>22  | 143<br>26  |
| Total                                 | 769           | 792        | 820        |
| NUMBER (                              | OF TEACHING   | STAFF(a)   |            |
| Government                            | 602           | 573        | 575        |
| NUM                                   | BER OF CHILD  | REN        |            |
| Government—                           |               |            |            |
| Pre-primary                           | 25,215        | 26,081     | 26,254     |
| Community pre-school                  | 6,835         | 6,281      | 6,167      |
| Non-government—<br>Pre-primary        | 3,078         | 3,869      | 4,561      |
| Indépendent pre-school                | 1,251         | 1,126      | 1,204      |
| Total                                 | 36,379        | 37,357     | 38,186     |

(a) Numbers shown are for full-time equivalents rounded to the nearest whole number. *Source:* National Schools Statistics Collection.

Primary and

Secondary

Education

Every person running a pre-school centre must hold a permit issued by the Minister for Education and all authorised pre-school centres are subject to inspection by an officer of the Ministry.

Children normally start Primary school at the beginning of the year in which they attain the age of six years. Except in special circumstances, attendance is then compulsory to the end of the year in which the child attains the age of fifteen years. Instruction in primary school is provided over seven years. A child who makes normal progress completes the course at the age of twelve and then enters secondary school.

Secondary education is provided over a period of five years from Year 8 to Year 12. Generally, students may leave at the end of Year 10 or continue through to Year 12 to attain a Certificate of Secondary Education.

Western Australia currently has two Senior Colleges run by the Ministry which give 'second chance' secondary education to those people who left the school system before achieving their goals.

The Ministry of Education has a number of programs giving help to students with special needs. They include Aboriginal and Torres Strait Islanders, students from a non-English speaking background, students with disabilities, or from socio-economically disadvantaged areas, and students who are geographically isolated.

| Age last<br>birthday<br>(years) | Government<br>schools | Non-<br>government<br>schools | Total   |
|---------------------------------|-----------------------|-------------------------------|---------|
| Under 6                         | 9,556                 | 2,432                         | 11,988  |
| 6                               | 20,693                | 5,158                         | 25,851  |
| 7                               | 20,722                | 5,302                         | 26,024  |
| 8                               | 20,386                | 5,300                         | 25,686  |
| 9                               | 20,216                | 5,381                         | 25,597  |
| 10                              | 19,483                | 5,243                         | 24,726  |
| 11                              | 19,036                | 5,296                         | 24,332  |
| 12                              | 18,226                | 6,329                         | 24,555  |
| 13                              | 17,286                | 7,335                         | 24,621  |
| 14                              | 16,928                | 7,072                         | 24,000  |
| 15                              | 15,568                | 6,525                         | 22,093  |
| 16                              | 11,957                | 5,825                         | 17,782  |
| 17                              | 6,150                 | 3,158                         | 9,308   |
| 18 and over                     | 2,664                 | 629                           | 3,293   |
| Total                           | 218,871               | 70,985                        | 289,856 |

#### TABLE 8.2 – GOVERNMENT AND NON-GOVERNMENT SCHOOLS, FULL-TIME STUDENTS CLASSIFIED ACCORDING TO AGE JULY 1991

(a) Excludes pre-primary and technical school students. (b) Includes students attending education support schools, centres and units. (c) Includes students attending special schools. *Source:* National Schools Statistics Collection.

|  | 1989                               | 1990                               | 1991                      |
|--|------------------------------------|------------------------------------|---------------------------|
| NUN  | MBER OF SCHO                       | OLS                                |                           |
| Primary schools  | 539                                | 548                                | 547                       |
| Education support<br>schools/centres<br>Secondary schools—                   | 61                                 | 62                                 | 60                        |
| District high schools  | 59                                 | 57                                 | 58                        |
| High schools   | 6                                  | 6                                  | 7                         |
| Senior high schools  | 83                                 | 85                                 | 86                        |
| Senior colleges<br>Distance Education Centre                                 | 2<br>1                             | 2<br>1                             | 2<br>1                    |
|  | -                                  | -                                  |                           |
| Total  | 751                                | 761                                | 761                       |
| NUMBER   | OF TEACHING                        | STAFF (a)                          |                           |
| Engaged in teaching duties–<br>Primary<br>Secondary<br>Education support (b) | -<br>7,092<br>5,939<br>370         | 7,302<br>6,117<br>400              | 7,501<br>5,991<br>392     |
| Total  | 13,401                             | 13,819                             | 13,884                    |
| NUMBER (   | OF FULL-TIME S                     | STUDENTS                           |                           |
| Level of education—  |                                    |                                    |                           |
| Primary (c)<br>Secondary—  | 137,669                            | 140,175                            | 141,699                   |
| Years 8, 9 and 10 (c)<br>Years 11 and 12<br>Senior colleges<br>Other (d)     | 51,227<br>20,965<br>1,405<br>1,178 | 51,667<br>20,983<br>1,549<br>1,038 | 52,107<br>23,490<br>1,572 |
| Total  | 212,444                            | 215,412                            | 218,868                   |
| Males  | 109,530                            | 110,930                            | -                         |
|  | 119531                             | 110.930                            | 112,884                   |

#### TABLE 8.3 – GOVERNMENT SCHOOLS: JULY

(a) Numbers shown are for full-time equivalents rounded to the nearest whole number. (b) Excludes teachers working in education support units attached to primary and secondary schools. (c) Includes ungraded and education support students (students with intellectual disability) who attend primary or secondary schools. (d) Students attending education support schools and centres who cannot be assigned a level. From 1991 all education support students have been allocated a level. Source: National Schools Statistics Collection.

In Western Australia distance education operates as an adjunct to the general school system. The Distance Education Centre of the Education Ministry provides schooling to a wide variety of students who are unable to attend regular school. They include children living in remote areas, isolated Aboriginal communities, students (adults and children) who for various medical and social reasons are unable to attend normal schools, students at smaller schools who cannot have maximum choice of subjects because of the small size of the teaching staff, prisoners in jails, students travelling interstate and overseas with their parents, and adults seeking a second chance.

A feature of the service offered by the Distance Education Centre is the field support given to students by visiting tutors and teaching staff, as well as its links with the five Schools of the Air.

### **Revamping Secondary Schooling**

#### Contributed by The Ministry of Education

The number of students staying on at school to complete Years 11 and 12 has steadily increased. The Ministry of Education has developed a number of new programs to meet the varying needs of these students. Key features of the programs piloted in 1992 have been a flexibility to respond quickly to students' emerging needs and establishing strong links between education and the workforce.

The programs introduced in 1992 include:

Pathways which organise Secondary Education Authority (SEA) accredited courses into fields of study focussed on specific career areas. The fields of study currently on offer are Applied Science; Art and Design; Business Systems; Health, Social and Community Services; Food, Hospitality and Tourism: Performing Arts; Primary Industry and Natural Resources; Technology and Design.

In Step allows students to spend one day per week in the workforce, applying the knowledge and skills gained in school. Trainers in the industry provide schools with an

assessment of the student's achievement against an agreed competency list and this is incorporated into grades for English, Maths and Work Studies in Year 12.

Fast Track caters for students returning after unsuccessful school experiences or those who are unlikely to succeed in mainstream classes. The program is recognised by TAFE and provides a sound basis for completing Years 11 and 12. It will be expanded in 1993.

Career Education has received a boost through establishing a pool of qualified teachers and publishing career education curriculum guidelines. The aim is to have co-ordinated career education programs in all secondary schools by 1995.

Visiting Christmas Island Year 10 students using the library computerised catalogue at Lynwood Senior High School as part of the Fast Track program.

Photograph: Courtesy of WA Education News.

Education Support for Year 11

and 12 students with disabilities has been expanded. A new curriculum framework has been developed, based on nationally-adopted key competencies. The focus of this curriculum is threefold: career education; independent living; recreation and leisure.

**Teacher-Industry Placement Scheme (TIPS)** provides an opportunity for up to 200 teachers a year to spend a week in an industry to develop a better understanding of the workplace, which they then incorporate into their classroom teaching.

Schools of the Air are conducted through the radio network of the Royal Flying Doctor Service from bases at Carnarvon, Derby, Kalgoorlie, Meekatharra and Port Hedland. Materials provided by the Distance Education Centre are used to supplement tuition.

The curricula of both the primary and secondary schools is Primary and organised into seven study areas: English, Languages and Communication; Mathematics; Science and Technology; Social Secondary School Curriculum Studies; Practical and Creative Arts; Personal and Vocational Education; and Physical Education.

Primary School

Curricula

The curriculum in Years 1 to 3 of primary school focuses on the developing students' language abilities and functional literacy and numeracy. Middle and upper primary students study an integrated curriculum which covers the seven broad categories.

Lower Secondary school students (years 8 to 10) progress through Secondary School Curricula the Unit Curriculum, which is designed to ensure a general and balanced education whilst giving students the chance to select preferred units from those offered. Each unit is designed to be studied for about forty hours. Generally, students are expected to study 160 hours of English and Mathematics in each year and to complete at least one unit from each of the seven curriculum components.

| 1989                                     | 1990  | 1991  |
|--|---|---|
| R OF SCHO                                | OLS   |   |
| 139<br>38<br>60<br>4<br><b>241</b>       | 143<br>39<br>60<br>2<br><b>244</b>  | 147<br>38<br>62<br>2<br><b>249</b>  |
| TEACHING                                 | STAFF (a)   |   |
| 1,757<br>2,444<br>25<br><b>4,226</b>     | 1,861<br>2,515<br>(b) —<br>4, <b>376</b>  | 1,968<br>2,549<br>(b) —<br><b>4,517</b>   |
| ULL-TIME S                               | TUDENTS   |   |
| 35,478                                   | 36,735  | 37,531  |
| 20,888<br>11,056<br>81                   | 21,466<br>11,374<br>(b) —   | 21,494<br>11,689<br>271   |
| <b>67,503</b><br><b>33,686</b><br>33,817 | 69,575<br>34,660<br>34,915  | <b>70,985</b><br><b>35,454</b><br>35,531  |
|  | R OF SCHOO<br>139<br>38<br>60<br>4<br>241<br>TEACHING<br>1,757<br>2,444<br>25<br>4,226<br>FULL-TIME S<br>35,478<br>20,888<br>11,056<br>81<br>67,503<br>33,686 | R OF SCHOOLS<br>139 143<br>38 39<br>60 60<br>4 2<br>241 244<br>TEACHING STAFF (a)<br>1,757 1,861<br>2,444 2,515<br>25 (b) —<br>4,226 4,376<br>FULL-TIME STUDENTS<br>35,478 36,735<br>20,888 21,466<br>11,056 11,374<br>81 (b) —<br>67,503 69,575<br>33,686 34,660 |

TABLE 8.4 - NON-GOVERNMENT SCHOOLS: JULY 4000

4000

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(a) Numbers shown are for full-time equivalents rounded to the nearest whole number. (b) students and the staff from special schools have not been identified separately. (c) Includes students in ungraded classes. Source: National Schools Statistics Collection.

Students in years 11 and 12 study year-long courses which assist transition to further education, training or employment.

Education in government schools is secular in character but time may be set aside during which representatives of various religious denominations may attend to give special religious instruction. Individual teachers may also include elements of religion in one or more of the seven study areas taught.

Agricultural education in the form of full-time residential courses is available at a number of centres. Some government and non-government secondary schools also offer courses in agriculture.

The Secondary<br/>EducationThe Secondary Education Authority (SEA) prepares syllabuses for<br/>subjects, accredits courses, moderates student performance and<br/>issues certificates in consultation with secondary and post<br/>secondary institutions and with community representatives. The<br/>SEA is responsible to the Minister for Education for all these<br/>functions.

Student Achievement Lower-school students who study under the Unit Curriculum system receive the Certificate of Lower Secondary Studies at the end of Year 10. This certificate lists the units satisfactorily completed in the last year of compulsory schooling — Year 10.

The Certificate of Secondary Education is awarded to students who have completed at least one SEA-approved Year 11 or Year 12 course. Students in these years study year-long courses selected from 150 accredited courses and a range of registered courses approved by the SEA. Schools assess these students and the grades given in accredited courses are moderated by the SEA to ensure comparability across all areas of the state. Grades in registered courses are not moderated.

Students have an external examination in those Year 12 accredited courses which can contribute to a student's Tertiary Entrance Score (called TES subjects). A numerical score (Scaled Mark) for TES subjects is reported on the Certificate of Secondary Education, as well as a grade. This numerical score is a 50:50 combination of the standardised moderated school assessment and the standardised examination mark. The combined mark is scaled using the Australian Scholastic Aptitude test (ASAT).

Entrance to institutions of higher education is based on TES, which is a weighted average of scores in a student's best four or five TES subjects. Ten per cent of the student's ASAT score is also included. The maximum TES is 510. The student must also have satisfied the requirements for secondary graduation, satisfactory performance and English language competence.

#### Post Secondary Education

Higher The Western Australian Higher Education Council provides a Education Council forum for the discussion of matters relating to higher education in Western Australia and for advising the State Minister for Education. The Western Australian Office of Higher Education supports the operation of the Council through the provision of administrative, secretarial and research services and, as a government department, undertakes a range of activities which facilitate the provision of higher education in Western Australia. Technical and Further Technical and further education is now coordinated by the Education Department of Employment, Vocational Education and Training (DEVET). DEVET was formed in January 1992 by the amalgamation of the Departments of TAFE and Employment and Training. The two had common goals - to place young Western Australians in education, training or a job, and to see all Western Australians were given the opportunity to broaden their educational horizons. DEVET is committed to enhancing the skills of Western Australia's work force, underpinning the economic performance of the state and providing a strong basis for employment growth. The Department's stated mission is "to contribute to the development of a competitive economy in Western Australia and the economic and social well-being of its people by providing Western Australians with relevant vocational education and training and enhancing employment opportunities." The Department runs the TAFE colleges and TAFE centres throughout the state. These colleges and centres provide a number of different educational services. Their primary function is to provide vocationally oriented Award courses which are responsive to and meet industry demands for training. The State Employment and Skills Development

training. The State Employment and Skills Development Authority (SESDA) advises DEVET and TAFE colleges on the programs which would most effectively meet the current needs of the industry.

These award courses are studied full-time or part-time and are available to students of all ages and backgrounds including managers and supervisors, technicians, skilled tradespersons, semi-skilled personnel and other support staff required by industry and commerce. Just as DEVET works cooperatively with employers and industry groups, it also explores opportunities to incorporate TAFE programs into other elements of the education system. They are increasingly available as part of the upper-secondary school curriculum through a joint initiative with the Ministry of Education known as "Pathways".

These programs widen the alternatives available to upper school students, and include a number of bridging and linking vocationally related courses for students from age fifteen to nineteen.

The demand for specialised types of training and retraining has led to the development of a recent off-shoot of DEVET known as the College of Customised Training (CCT). It provides tailor-made courses on a commercial basis both in Western Australia and internationally. Under its umberella is also a technical publications section which publishes and distributes text books for TAFE courses locally and overseas.

The Career Skills Information Centre is another valuable element of the system, offering educational, vocational and general guidance to students and prospective students of TAFE.

One of the intentions of the amalgamation of TAFE and the former Department of Education and Training was to ensure that those people who are disadvantaged are able to achieve equitable access to training opportunities and the labour market.

|  | 1989                       | 1990                       | 1991                       |
|--|----------------------------|----------------------------|----------------------------|
| NUMBER   | R OF INSTITUT              | TIONS                      |                            |
| Colleges<br>Evening technical schools<br>Technical centres | 16<br>8<br>100             | 16<br>8<br>85              | 17<br>7<br>88              |
| NUMBER OF  | F TEACHING S               | STAFF (a)                  |                            |
| Colleges<br>Evening technical schools<br>Technical centres | 1,806<br>69<br>89          | r1,817<br>                 | 1,672<br>                  |
| NUMBER OF ST   | UDENT ENRO                 | DLMENTS (b)                |                            |
| Colleges<br>Evening technical schools<br>Technical centres | 85,636<br>26,307<br>20,613 | 82,893<br>26,525<br>19,280 | 78,346<br>25,701<br>19,531 |

#### TABLE 8.5 – TECHNICAL AND FURTHER EDUCATION

(a) Full-time equivalent. Following reorganisation of the Department, staff of Evening Technical Schools have been reallocated into either the colleges or technical centres categories. (b) Each student is counted only once, even though they may have enrolled in more than one course, or on more than one occasion during the year.

Source: Department of Employment, Vocational Education and Training.

DEVET has an Employment and Labour Market Services Bureau which funds and supports 49 community based employment programs. These programs include employment equity programs, youth action schemes, and aboriginal economic development officer programs. They target identified disadvantaged groups in the labour market, including young people, women, aboriginal and migrant peoples and ex-offenders.

These various projects aim to assist people to access employment and training opportunities.

Another key aspect of TAFE in WA is the provision of community adult education courses, commonly called hobby courses. These are usually term-long programs offered at colleges and TAFE centres covering leisure, technical and recreational subjects.

Access is a key word for TAFE in the 1990's and it has developed a variety of mechanisms to make it easier to access TAFE programs and labour market programs which dove-tail into the TAFE system.

DEVET operates a network of four metropolitan colleges, five regional colleges (including the TAFE External Studies College located in West Perth) and centres in Broome and Kununurra which offer a wide variety of daytime and evening courses.

The four metropolitan colleges are multi-campus institutions aligned to broad geographic and economic regions. They also include several metropolitan evening TAFE centres which operate from local community and high school centres. Most TAFE centres cater for part-time evening study.

Regional colleges are located in Albany, Bunbury, Midland and Geraldton. There are also TAFE centres, including full-time TAFE centres in several major country towns, administrated by the Regional College responsible for the area. These TAFE centres endeavour to service the needs of the local community based on local demand. The TAFE External Studies College provides a comprehensive range of courses for those students who have difficulty in attending programs at one of the campuses or centres.

The Independent<br/>CollegesIn addition to the Technical and Further Education facilities<br/>already detailed, independent colleges have been established and<br/>may provide advanced education, technical and further education<br/>in specific circumstances. They currently include Kalgoorlie<br/>College in the Eastern Goldfields; Karratha College, Hedland<br/>College and Pundulmurra College in the Pilbara region in the<br/>state's north-west. Pundulmurra College is the most recent of<br/>these, and primarily services the Pilbara's Aboriginal students.

These independent colleges provide a focus for educational and cultural activities within their communities. In addition to academic subjects, the colleges also provide a broader range of courses aimed at personal and lifestyle development.

The colleges and the TAFE regional colleges provide higher education courses under contract to Perth-based institutions.

**Tertiary Institutions** Western Australia has four government universities. A private university, the University of Notre Dame Australia, commenced receiving students during the early part of 1992.

Western Australian university study programs offer graduate and postgraduate diplomas, bachelor, honours, masters and doctoral degrees. Bachelor degrees vary between three and six years duration, some requiring successful completion of the first year of another course, others the completion of that course. Honours degrees generally entail an additional year of study.

Study programs are designed to provide students with the degree of specialisation necessary for an increasingly demanding technological world. All courses are accredited and listed in the Register of Australian Tertiary Education. All Universities seek to foster strong links with the community by providing research and consultancy services, implementing training programs for industry and offering a broad variety of community courses.

The attraction of full fee-paying overseas students has become increasingly important to Universities. Most of these students come from Malaysia, Singapore, Hong Kong, Indonesia, and the People's Republic of China, although a large number of other countries are represented.

|                    | 1990   | 1991   | Change |
|--------------------|--------|--------|--------|
| Field of study—    |        |        |        |
| Agriculture        | 707    | 772    | 9.2    |
| Architecture       | 781    | 792    | 1.0    |
| Arts               | 10,711 | 12,390 | 15.7   |
| Business           | 12,543 | 13,116 | 4.6    |
| Education          | 7,003  | 8.069  | 15.2   |
| Engineering        | 2,883  | 3,183  | 10.4   |
| Health             | 6,218  | 6,612  | 6.3    |
| Law                | 968    | 1,195  | 23.5   |
| Science            | 6,344  | 7,166  | 13.0   |
| Veterinary Science | 313    | 330    | 5.4    |
| Non Award          | 3      | 14     | 366.7  |
| Total              | 48,474 | 53,636 | 10.6   |

#### TABLE 8.6 - THE UNIVERSITIES: NUMBER OF STUDENTS

Per cent

Source: Department of Employment, Education and Training

Edith Cowan University The University, (formerly the Western Australian College of Advanced Education), was established on 1 January 1991 as a multi-campus institution with over 17,000 students and 160 programs of study. It is one of Australia's largest degree awarding institutions. Academic courses are offered at the Churchlands, Mount Lawley, Joondalup and Bunbury Campuses. The University's Claremont Campus is used for a variety of non-teaching purposes, including conferences. The Western Australian Academy of Performing Arts is an academy of the University, and is located on the Mount Lawley Campus.

The University's name perpetuates the memory of an outstanding Western Australian citizen. As the first woman of an Australian parliament, Edith Cowan, OBE (1861-1932), was concerned with many social issues including the advancement of women, nursing, education and law.

The University is vocationally orientated, providing multi-level courses to meet specific community needs for 30 per cent of the State's university students. The courses are flexible in approach to entry requirements, teaching methods, modes of study and design. Women represent 63 per cent of the total student body.

The Western Australian Academy of Performing Arts enjoys a semi-autonomous brief within the University. Administratively, it is treated as a school of the University having access to its resources and facilities. The purpose of the Academy is to prepare persons who seek full-time professional employment in the performing arts. The Academy is organized in two major divisions: the Western Australian Conservatorium of Music providing courses in classical music and jazz; and, the School of Dramatic Arts providing courses in arts management, dance, musical theatre, media performance, production and design, and theatre.

*University of Western Australia* The University of Western Australia (UWA) was established in 1911 and teaching began in 1913. The University is located close to the city of Perth, adjacent to the Swan River.

> The University has five residential colleges and a hall of residence for students, an art gallery, a museum of geology and a museum of anthropology. There are also five theatres, a music auditorium and Winthrop Hall which is used for arts attractions, mainly orchestral and choral works. These venues are used by arts practitioners from within and outside the University and are used particularly during the annual Festival of Perth.

> University Extension is responsible for community education activities, of which the annual Summer School, with its long tradition, is an important component.

Murdoch University Established in 1973, Murdoch University is situated some 13 kilometres from Perth, and comprises over 220 hectares. Murdoch is one of the fastest growing of Western Australia's universities having doubled in size in the 5 years since 1985. The gardens are a feature of the University and some 60,000 native trees, plants and wildflowers have been planted which attract many native birds. There is also a Chinese garden, the materials for which were donated by Chinese communities in Asia. Craftspeople from Taiwan visited Perth to assemble the garden. On campus, accommodation is provided for 430 students. Student Village provides self-service accommodation with each student having a single study/bedroom. Groups of students share common kitchen, dining and lounge areas. Professional development programs are provided and the University has a very successful conference office. The main campus of the University is set on 112 hectares of Curtin University of Technology landscaped parkland in the Perth suburb of Bentley, 10 kilometres from the city centre. The Schools of Occupational Therapy, Physiotherapy and Podiatry are located in the Royal Perth (Rehabilitation) Hospital grounds at Shenton Park. Specialist campuses are located at the Muresk Institute of Agriculture in the Avon Valley near Northam and two campuses of the Western Australian School of Mines are at the gold mining centre of Kalgoorlie and at the coal mining town of Collie. Curtin is concerned with technology and the range of ideas, operations and materials by which people apply knowledge to real situations. The University fosters close links with the local, national, and international community through its teaching programs and research and development activities. The University of The University of Notre Dame Australia is the only private Notre Dame university in Western Australia and was the first Catholic Australia university to be founded in Australia. It has its campus in Fremantle. It enrolled its first 90 students in 1992, and enrolled 159 students in 1993. Notre Dame is committed to the advancement of learning and knowledge within a context of Christian faith and values. It pursues high educational standards and seeks to graduate students noteworthy for their beliefs, values and practices and for their outstanding professional skills and knowledge. It has strong collegial links with the University of Notre Dame in Indiana, USA and through its Study Abroad program hosts 50 students each year from Notre Dame US. These visiting students live in Notre Dame's first residential college in Fremantle.

Notre Dame offers a wide range of of post-graduate courses in Education, and plans, during its first two foundation decades, to open faculties of Arts and Sciences, Business, Law and Medicine.

Western Australian School of Mines The School of Mines comprises the Departments of Mineral Exploration and Mining Geology; Minerals Engineering and Extractive Metallurgy; and Mining Engineering and Mine Surveying. Associate diploma, bachelor degree, postgraduate diploma and masters degree courses are offered. The increasing emphasis on applied research and consultancy within the School led to the establishment of the Brodie-Hall Mining Research and Consultancy Centre in Kalgoorlie.

The Collie Federated School of Mines is also a campus of the Curtin University of Technology where the first year of the degree programs is being run as well as an Associate Diploma in Coal Mining Technology. The development of teaching and research facilities at Collie has consolidated the role of the School and expanded its base as a South-West Regional/Bentley Campus research centre.

*Muresk Institute of Agriculture* Muresk Institute of Agriculture is situated near Northam. Muresk offers a range of courses which allows its graduates to fill almost any role in the rural industries.

> The campus of some 1,800 hectares contains a cereal and sheep farm. Research facilities include laboratories, glass and tunnel houses and the Clyde Smith Rural Management Centre which houses the Rural Management Unit and its wide range of microcomputer hardware and software. Through this unit and with the establishment of the Farm Management Foundation of Australia (Inc.) on the campus, Muresk has expanded its applied research profile in the agricultural business field. This research concentrates on the development and application of new technologies in both broadacre and intensive farming systems and on assisting farmers to incorporate these developments into decision support systems.

> Numerous short courses are held at Muresk, including in-service training schools for personnel of the Department of Agriculture and for field and service staff of agricultural firms.

The Tertiary Institutions Service Centre (Incorporated) processes applications for admission to the higher education institutions and carries out such other functions as agreed by the institutions. Applicants seeking admission to a first year undergraduate course (or later years in the case of Curtin University of Technology, Murdoch University and the University of Western Australia) or to a Diploma in Education course apply through a joint system operated by the Centre. Applicants list four preferences from all the higher education courses available and offers are then made by the institutions for each course on the basis of a ranked order.

The Tertiary Institutions Service Centre (Inc)

| Commonwealth<br>Government<br>Assistance for<br>Education | The State Government has the major responsibility for education,<br>including the administration and substantial funding of primary,<br>secondary and technical and further education in Western<br>Australia. The Commonwealth Government provides<br>supplementary finance to the State and is responsible for the total<br>funding of the four universities. The Commonwealth also has<br>special responsibility for Aboriginal people and for migrants, as<br>well as the power to provide assistance for students.<br>The National Board of Employment, Education and Training was<br>established in 1988, one function being the provision of advice<br>and information on education to the Commonwealth<br>Government. |
|---|---|
| Financial Assistance<br>for Students                      |   |
| Assistance for Isolated                                   | This scheme assists families whose homes are too remote for   |

Assistance for Isolated Children Scheme This scheme assists families whose homes are too remote for normal daily access to government schools. It provides allowances for eligible students living away from home to attend school, for students studying by correspondence or when a second home is maintained for student occupation. The scheme also covers children regarded as isolated owing to medical disability.

Austudy In 1987, Austudy replaced the Tertiary Education Assistance Scheme, Adult Secondary Education Allowance Scheme, and the Secondary Allowances Scheme as the main scheme for community-wide student assistance. Subject to eligibility criteria, AUSTUDY provides support for full-time students 16 years of age and older studying secondary, technical and further education, undergraduate and some postgraduate courses at universities and colleges of advanced education. Higher degree students, who are eligible for postgraduate awards do not qualify for AUSTUDY.

*Postgraduate Awards Scheme* This scheme provides awards to selected higher degree students undertaking masters and doctor of philosophy programs at Australian universities and colleges of advanced education. They are made on academic merit, are taxable and, although not income-tested, are not available if a certain level of income is received from other awards.

Expenditure on Education by State and Local Government Authorities

Financial Assistance for Schools and Students The State Government provides financial aid to non-government schools by means of a direct annual grant for each student enrolled. The grant incorporates a needs component and separate rates are applicable to pre-primary, primary and secondary students. Assistance is also given to non-government schools by way of low interest loans and interest subsidies on moneys borrowed to help meet expenditure on new residential accommodation, classrooms and associated facilities and school site acquisition. The scheme also applies to the provision of teacher accommodation north of the Twenty-Sixth Parallel.

The State Government provides an allowance to parents eligible for the family allowance, of \$50 for each primary pupil and \$100 for each secondary student, to assist in meeting education costs.

A 'boarding away from home' allowance, to supplement the isolated children's allowance paid by the Commonwealth Government, is also provided. An allowance of \$500 per annum is paid to an isolated child who is obliged to live away from home to attend school.

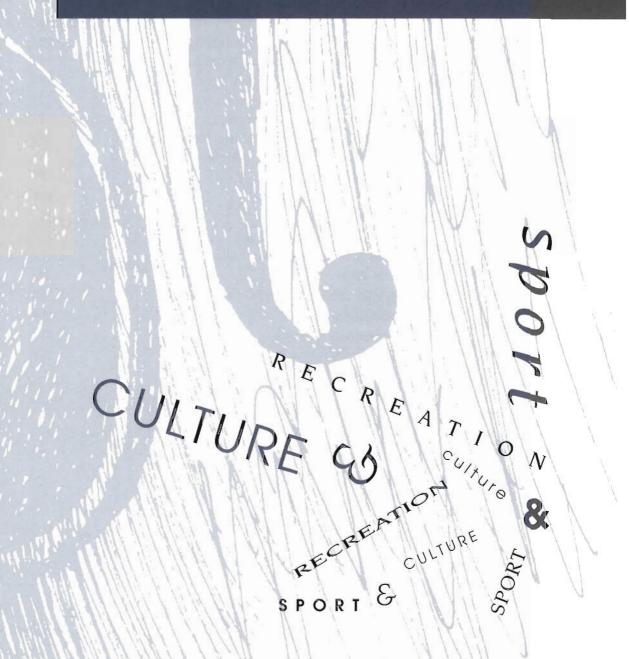
The State Government Additional Assistance and Clothing Assistance Schemes are also available to needy parents who have children in Years 8 to 12 aged under 16. These schemes aim to assist families on low incomes to meet the costs of books, materials and clothing.

Material for this Chapter was prepared in consultation with the relevant State and Commonwealth Education Authorities.

| Educatio | n |
|----------|---|
|----------|---|

# CULTURE, RECREATION & SPORT

9



### Chapter 9

# CULTURE, RECREATION AND SPORT

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## CULTURE, RECREATION AND SPORT

## Culture

The Perth Cultural Centre, located in Northbridge close to central Perth, provides a focus for arts and culture. At its heart is a large paved plaza with an amphitheatre for outdoor performances. Around the perimeter are housed the Library and Information Service of Western Australia (LISWA) in the Alexander Library, the Western Australian Museum, the Art Gallery of Western Australia and the Perth Institute of Contemporary Art.

Around the Perth Cultural Centre are a number of arts resource organisations, including the National Exhibitions Touring Structure; the Australian Association of Dance Education; The Dance Triennium Office; Evos Music, exponents of contemporary music; Artrage; The Festival Fringe Society; and the Australian and Regions Artists' Exchange, (a body established to enable dialogue and exchange between artists from Australia and the Pacific region). Artists' studios are also located in and near the Centre. The Forrest Chase development links the Cultural Centre with the city.

The last few years have seen the development of regional arts facilities and there is a steady flow of country touring activity by professional companies. This has been enhanced by the establishment of the Performing Arts Touring Information Office (PATIO).

The Western Australian Department for the Arts was established for the Arts to advance the cultural development of Western Australia. The arts portfolio embraces the statutory authorities of the Western Australian Museum, the Art Gallery of Western Australia, the Library and Information Service of Western Australia (LISWA) and the Perth Theatre Trust. The Department for the Arts also includes the State Censorship Office and the Western Australian Film Council.

> Central to the role of the Department is support for the range of arts organisations and creative cultural practices that enrich the lives of Western Australians. The Department also has an important role in the provision of advice to Government to assist in the formation of policies to promote the arts in Western Australia.

Department

Major funded performing arts organisations include the State Theatre Company of Western Australia, Deckchair and Swy Theatres, Black Swan Theatre Group, Spare Parts Theatre, the Acting Out of Western Australia Theatre for Young People, the Western Australian Opera Company, Youth Orchestra, the Western Australian Ballet and 2 Dance Plus.

| (\$ 000)               |                           |                           |         |  |
|------------------------|---------------------------|---------------------------|---------|--|
|                        | General<br>purpose grants | Special<br>project grants | Total   |  |
| Aboriginal arts        | 221.5                     | 236.1                     | 457.6   |  |
| Community arts         | 72.0                      | 317.8                     | 389.8   |  |
| Dance                  | 1,164.0                   | 172.0                     | 1,336.0 |  |
| Film and television    | 235.5                     | 12.0                      | 247.5   |  |
| Literature             | 173.5                     | 139.9                     | 313.4   |  |
| Multi-art forms        | 1,368.0                   | 14.7                      | 1,382.7 |  |
| Music                  | 2,242.2                   | 378.0                     | 2,620.2 |  |
| Theatre                | 1,791.3                   | 335.0                     | 2,126.3 |  |
| Visual arts and crafts | 901.3                     | 206.7                     | 1,108.0 |  |
| Total                  | 8,169.3                   | 1,812.2                   | 9,981.5 |  |

#### TABLE 9.1 – DEPARTMENT FOR THE ARTS GRANTS TO MAJOR ARTS AGENCIES (a): 1991-92 (\$'000)

(a) In 1991-92, additional financial assistance of \$355,000 was provided for the Creative Development Fund, conferences and seminars, miscellaneous grants and minor capital works.

Source: Department for the Arts.

The Department also administers financial support to individuals and agencies as recommended by peer group assessment panels in each artform. Financial assistance is considered for projects of a developmental nature. The newly formed Perth Institute of Contemporary Art is one organisation to receive support. Artists are assisted and nurtured through a Creative Development Fund, arts traineeships and study exchanges.

Specific art forms are serviced by the Arts Development Officers in each field: literature; visual arts; music; dance; theatre; film; Aboriginal arts; community arts and multicultural arts. The potential of country areas is also of special concern and the Department has a comprehensive Regional Arts Plan.

Other areas receiving attention include cultural tourism, international cultural development, public art, corporate sponsorship for the arts, housing the arts, arts and education, arts marketing, and women and the arts.

**Western Australian Film Council** The Western Australian Film Council was established to encourage and assist in the development of a viable film industry in Western Australia. Provision of industry assistance resulted in two feature films being produced in Western Australia in 1991-92.

### Culture, Recreation and Sport

During the year the Council's Short Drama Fund financed the production of four films. The aim of the fund is to lead short drama makers into mainstream drama production. Since its beginning in 1988 a total of 16 films have been funded, all of which have been crewed and cast by Western Australians.

#### TABLE 9.2 – THE WESTERN AUSTRALIAN FILM COMMISSION PROVISION OF INDUSTRY ASSISTANCE 1991-92

| \$'000 |
|--------|
| 327.1  |
| 118.9  |
| 115.2  |
| 96.3   |
| 657.5  |
|        |

Source: Western Australian Film Commission

Library Board of Western Australia The Library Board of Western Australia is a statutory authority which through LISWA is the custodian of the State's collection of library, information and archival resources.

> LISWA comprises five directorates: Collection Management; Corporate Services; Public Libraries and Lending Services; Reference and Information Services; and the State Archives. These directorates are coordinated by the Chief Executive Officer and State Librarian. Each directorate delivers a specific programme to the people of Western Australia.

|  | Unit |                    |
|--|------|--------------------|
| CRF Allocation   | \$   | 21,369,000         |
| Staff (a) (b)<br>Associated public libraries                                 | No.  | 299<br>230         |
| Books—<br>Total circulation stock (a)<br>Received and dispatched in the      | п    | 2,226,961          |
| Public Libraries exchange program—<br>Volumes despatched<br>Volumes received | - "  | 376,999<br>367,891 |
| Inter-library loan requests received   | "    | 103,190            |
| Enquiries in Reference Library   |      | 178,204            |
| Visitors to Reference Library  | п    | (c) 825,445        |

| TABLE 9.3 – THE LIBRARY | BOARD   | OF | WESTERN | AUSTRALIA: |
|-------------------------|---------|----|---------|------------|
|                         | 1991-92 |    |         |            |

(a) At 30 June. (b) Number of full-time staff plus full-time equivalent units of part-time staff. (c) Affected by reorganisation of services to the ground floor.

Source: Library Board of Western Australia

This directorate develops and maintains collections throughout Public Libraries and Lending Services the State in cooperation with local government authorities. The Public Libraries and Lending Service Programme provides to public libraries regular supply of appropriate bookstock and other resource materials. The directorate also provides an advisory service and development programmes to public libraries as well as a centralised inter-library loans system available not only to public libraries but to all government, private and academic library services within the State. The State Film and Video Library provides a free film and video lending service to groups and organisations throughout Western Australia. This library has now taken on the role of providing access to videos from the National Film and Sound Archives. Reference and The Reference and Information Services Programme's objective is Information Services to provide responsive reference and information services to the people of Western Australia. The General Reference and Information Services subprogramme provides services in the areas of Humanities and Social Sciences, Science, Technology and Commerce, and an extensive map collection. The J. S. Battye Library of Western Australian History seeks out, acquires and makes available local materials for research covering printed records, film archives and oral history. It also collects materials deposited under the provisions of the Copyright Act, 1968. The State Music Library provides a cassette and musical scores lending service to the general public in addition to its reference and information services. It is also involved in the promotion of music making. Infolink has responsibility for providing community and State Government information services to the public.

*The State Archives* Under legislation passed in 1974, the Board has responsibility for the control and custody of all State archives. These include the records of the State Government, local authorities and all other bodies established under statute. When records cease to be in current use, they become the responsibility of the Board and their destruction is prohibited without the approval of the Board.

In 1990 a new branch, the Records Management Branch, was created to enable the Archives to focus on the creation, maintenance and archiving of government records.

Collection The Collect Management acquire, or

The Collection Management Directorate has the objective to acquire, organise and preserve materials in LISWA's own

collections. The directorate provides cataloguing and information technology services.

- *Corporate Services* The objectives of this directorate are to; acquire and manage resources to achieve LISWA strategies, increase awareness of the role of the Library Board and LISWA, and maximise income from LISWA resources and facilities. One activity of this programme is to market and promote the facilities and services of LISWA to the public. It also provides for the sale of discarded stock throughout Western Australia and for the operation of the library shop.
- Western Australian The Western Australian Museum, with its headquarters and principal display galleries located in the heart of the Cultural Centre, celebrated its one hundredth birthday during 1992. It has established branches in Fremantle (1970) which include Fremantle Museum, Western Australian Maritime Museum, Samson House and Historic Boats Museum; Albany (1975) including Albany Residency Museum; Geraldton (1981) with the Geraldton Region Museum; and the Goldfields branch (1988) with the Museum of the Goldfields.

The Museum has special responsibilities for Aboriginal material (including sites), historic shipwrecks and meteorites. The Director also has delegated powers for wrecks and material under Commonwealth control.

The Museum's mission is, "to ensure that people are informed, that knowledge is advanced and that people's enjoyment is increased by contact with, or use of information derived from, examples of the natural and cultural heritage."

The Museum is a vital resource centre, its collections and displays reflecting the research and fieldwork constantly being undertaken by its curatorial staff. Emphasis in both display and research, is on natural sciences and human studies, past and present, and on the State's rich culture and colourful maritime history.

| Branch                                      | Public Attendance |  |
|---|-------------------|--|
| Western Australian Museum Perth             | 271,850           |  |
| Fremantle Museum                            | 47,896            |  |
| Western Australian Maritime Museum          | 137,553           |  |
| Boats (B) Shed                              | 36,856            |  |
| Samson House                                | 3,177             |  |
| Albany Residency Museum                     | 93,500            |  |
| Albany Residency Museum<br>Geraldton Museum | 29,142            |  |
| Museum of the Goldfields, Kalgoorlie        | 132,413           |  |
| Total                                       | 752,387           |  |

#### TABLE 9.4 – THE WESTERN AUSTRALIAN MUSEUM: 1991-92

Source: Western Australian Museum

The eight Trustees of the Museum are empowered to assist in establishing and maintaining local museums. The Museum is able to assist such museums with expertise, advice on the maintenance of collections, conservation and restoration, design and display, and by providing objects for display in recognised museums. At present, 18 local museums are recognised under the Museum Act. The Museum plays an important role in the sphere of education, from primary schools to tertiary institutions and the community in general. This is achieved through a variety of activities and endeavours including exhibitions, school visits, organised holiday activities (in the Museum and its branches), inservice programmes and lectures by scientific staff in tertiary institutions and public venues.

The Museum acts in an advisory capacity to government departments. Senior staff serve on government committees dedicated to the protection of heritage, the environment and wildlife. The Museum is assisted in certain fields by Honorary Associates, some of whom serve on advisory committees appointed by the Trustees, and by education volunteers.

**The Art Gallery of** Western Australia The Art Gallery of Western Australia incorporates eight major galleries, conservation laboratories, a prints and drawings study room, a restaurant, the Gallery Shop and the Art Gallery Society Room. The Gallery Administration Centre houses the library and theatrette.

> The Gallery's collection of Australian and international art is divided into four curatorial departments: Aboriginal and Asian; craft, design and decorative arts; painting and sculpture; and works on paper.

> Together with exhibitions of art works from the permanent collection, the Gallery presents touring exhibitions initiated in Australia and from overseas.

The exhibition *Discovery to Gold* included a selection of the gallery's most important Western Australian colonial pictures in collaboration with the National Trust of Western Australia and the Royal Western Australian Historical Society. Ball gowns, furniture and personal objects were included in this exhibition which marked Heritage Week. Other major exhibitions organised by the Gallery in 1991-92 were: Artexpress; Ozpop; The Impact of Pop Downunder; Australian and European Art; International and Australian Craft and Design; and Aboriginal Art.

The current acquisitions policy concentrates on contemporary work by Western Australians and Aboriginal art. International art purchases have declined, although some significant additions have been made. A number of Australian works were purchased, including some key works by leading Australian artists. The Craft and Design collection was enhanced by a number of major donations.

Education programmes relevant to the syllabus requirements of students from pre-primary to tertiary levels are emphasised. Group school visits can be arranged with a guided tour by the Voluntary Gallery Guides and a hands-on activity session led by an Education Officer. The Gallery also provides in-service courses for teachers.

The Art Gallery has over 50 volunteer guides who maintain a regular programme of guided tours to the public. Volunteer Information Officers assist the public from the information desk.

The Art Gallery of Western Australia Foundation was launched in October 1990 and continues to raise monies from the corporate and private sectors for the acquisition of art works.

The Art Gallery Society supports the Gallery with donations from their fund raising activities. These funds make possible the acquisition of important art works which otherwise may not have been obtained.

Geraldton Regional Art Gallery This important regional gallery continued its multicultural programme in 1991-92. A highlight of this programme was an exhibition of Chinese paintings called *Spirit of China*. This display included 82 works by contemporary Chinese masters, on loan from the Chinese International Art Exhibition Agency and organised by Dr. Amanda Yorke from the Department of Fine Arts, University of Western Australia.

Another highlight was *Japanese Cultural Week*. This exhibition of Japanese paintings and carvings was organised by the Geraldton Art Gallery in conjunction with the Japanese Consulate-General in Perth and the Japanese Foundation. During the week origami and ikebana demonstrations were held. *Japanese Cultural Week* was so successful it has been decided to make it an annual event.

Attendance for the year 1991-92 was 20,488.

Bunbury Art Galleries The Bunbury Art Galleries maintains a comprehensive programme of exhibitions from local, state, national and international sources. They span all types of art, craft and design including painting, sculpture, drawing, printmaking, photography, ceramics, jewellery, fine woodwork, glass, metal, textiles and video.

In conjunction with these exhibitions the Galleries conduct a regular and varied public programme of talks, seminars, workshops, demonstrations and an artist-in-residence project.

Other facilities offered by the Bunbury Art Galleries include the Gallery Shop, the Gallery Cafe and Catering Services, function

rooms and galleries for hire, and an active Friends of the Gallery organisation.

Attendance for the year 1991-92 was 32,250.

**The Aboriginal Arts Committee** The existence and operation of the Aboriginal Arts Committee is based on the principle that the indigenous people of Australia should determine the future of their own cultural heritage. The Committee's responsibility is to provide support to promote and develop activities.

> This involves fostering traditional cultural practices and their associated art forms, the representations and preservation of Aboriginal and Torres Strait Islander culture generally, and the generation of new forms of artistic expression among Aboriginal and Torres Strait Islander peoples in urban and country areas.

> The Committee aims to promote awareness of the dynamic culture of these indigenous peoples within their own communities and the wider community throughout Australia.

The Aboriginal Arts Committee awarded 40 grants totalling \$236,100 for arts programmes in Western Australia during 1991-92.

Attendance at<br/>Selected CulturalDuring 1990-91 over 43 per cent of adults in Western Australia<br/>used libraries; 32.8 per cent visited museums; 26.5 per cent visited<br/>art galleries; 28.9 per cent attended popular music concerts; 11.5<br/>per cent attended dance performances; 16.6 per cent attended<br/>musical theatre; 19.6 per cent attended other theatre and 8.5 per<br/>cent attended classical music concerts.

Participation in<br/>Leisure, Arts and<br/>CraftsIn the period April to October 1990, over 38 per cent of adults in<br/>Western Australia participated in art or craft as a leisure activity.<br/>A further 15 per cent had not participated during the eligible<br/>period but expressed an interest in doing so.

The most popular type of art/craft was handicrafts (52 per cent of those who participated), followed by photography (20 per cent), music making (19 per cent) and drawing/painting and sculpting (16 per cent). The level of participation in handicrafts was shown to increase with age.

The Festival As the oldest and largest annual international festival of the arts in the Southern Hemisphere, the Festival of Perth each year presents over 800 events covering all aspects of the arts. From theatre, music, dance, film and literature through to the visual arts, television and street theatre, annual attendances reach upwards of 500,000 for this *people's festival*.

Since its inception in 1953, the Festival of Perth has attracted the talents of over 16,000 artists from over 70 countries world-wide; 1992 marked the Festival's 40th Anniversary.

One of the highlights for 1993 was the Australian premiere of *The Song of Jacob Zulu*. Performed by acclaimed South African singing group, Ladysmith Black Mambazo, it tells the story of a 19 year old South African for whom the breakdown of apartheid comes too late.

## Recreation

The State's 4.9 million hectares of national parks contain picturesque landscapes ideally suited to more passive nature-based activities such as sightseeing, photography, bushwalking, nature study, picknicking and camping in designated areas. This system of 60 national parks is complemented by almost two million hectares of State forest, which offers opportunities for picknicking, camping, backpacking, canoeing, fishing, marroning, orienteering and other pursuits. In certain specified areas, other activities including horse and trail bike riding are permitted, subject to certain management controls.

Nature reserves are established for the purposes of wildlife and landscape conservation, scientific study and protection of features of archaeological, historic or scientific interest. Wildlife may not be commercially exploited, and no recreation which damages natural ecosystems is allowed. At 30 June 1992, there were 10.7 million hectares of nature reserves.

Marine Parks are managed for marine conservation and recreation, with areas zoned for commercial fishing on a sustained yield basis. There are six marine parks in Western Australia: Hamelin Marine Reserve in Shark Bay has been set aside for environmental and scientific study; Marmion (off Perth); Ningaloo (off Exmouth); Rowley Shoals (north-west of Broome); Shoalwater Islands (south of Perth); and Swan Estuary (Perth). The area of marine parks and reserves at 30 June 1992 was some 1.1 million hectares.

Extensive limestone caves are features at several places in the South-West part of the State as well as in the Kimberley and the Nullabor Plain. Some between Cape Naturaliste and Cape Leeuwin, and at Yanchep, have been developed for public inspection, and areas of the surrounding land have been reserved within Leeuwin-Naturaliste National Park, adjacent areas at Yallingup, Margaret River and Augusta, and within Yanchep National Park.

Parks and Reserves For the year 1991-92 there were an estimated 4.6 million visitors to CALM managed land and waters.

- Cape Range<br/>National ParkCape Range National Park, on the Western Australian North West<br/>Cape and the adjacent Ningaloo Marine Park that extends for 260<br/>kilometres along a barrier reef, exemplify the modern<br/>management of conservation reserves in Western Australia.<br/>Management plans involving public participation have been<br/>produced for both parks. A visitor's guide, park notes and the<br/>park guide booklet 'Range to Reef' have been produced to assist<br/>visitor appreciation, understanding of park values and awareness<br/>of sites developed to facilitate recreational opportunities. The<br/>Milyering Visitors Centre interprets the park and provides a plan<br/>for further learning about the natural environment and its<br/>management for wildlife and people.
- *Kings Park* The Kings Park Board administers an area of approximately 400 hectares close to the centre of Perth. There are several scenic vantage points on Mount Eliza overlooking the city and Swan River with views to the Darling Scarp. The original purpose when development began in 1895 was to provide for public recreation, health and enjoyment. This is still catered for by drives, dual use paths, grassed walks, formal gardens, picnic lawns, barbecue facilities and playgrounds.

The State War Memorial, the Pioneer Women's Memorial, avenues of dedicated trees and many other features commemorating the service and sacrifice of Western Australians in peace and war, have been placed here, making Kings Park the State's principal shrine of remembrance. There are also several historic sites in Kings Park, visited by early explorers or used by the pioneer settlers and the Aborigines before them.

The decision in 1959, implemented three years later, to create the Western Australian Botanic Garden in Kings Park, has led to the display in gardens and glasshouses of 2,000–3,000 species of native flora, and the undertaking of research into its biology, conservation and propagation, especially that of rare and endangered plants. About two-thirds of Kings Park is still native bushland, scarred in places by the extraction of timber, firewood and kindling by the early settlers, subsequent weed invasion and too frequent bushfires. Nevertheless, the resilience of the indigenous vegetation and active rehabilitation programmes have combined to make Kings Park a remnant nature reserve unique in its proximity to a capital city.

The Kings Park Guides are volunteers who give their time to operate an information centre and to lead walks through Kings Park and the Botanic Garden allowing tourists and other visitors the opportunity to share in its many interesting aspects.

Perth ZoologicalIn South Perth, close to the Swan River, 18 hectares are set asideGardensfor the Perth Zoo. Set in landscaped gardens, and boasting a

comprehensive display of rare palms, the Zoo is a popular tourist attraction having the highest visitation rate per capita of any zoo in Australia.

Perth Zoo cares for the State's most complete collection of Australian animals, as well as an extensive collection of exotic species. Perth Zoo cares for nearly 1,200 animals; 397 specimens in 35 families of mammals; 586 specimens in 43 families of birds; 211 specimens in 11 families of reptiles and a further 5 specimens of amphibians, fish and molluscs.

The Zoo is administered by the Zoological Gardens Board and is recognised internationally as a successful haven for many endangered species. Its mission statement is, "To contribute to the conservation of wildlife and to encourage the development of positive community attitudes towards conservation of life on earth". Recent and future developments have all been designed with this mission in mind and with the related objective of promoting conservation education in Western Australia.

The rehousing of animals in naturalistic enclosures, the building of an educational complex, (the Bicentennial Education Centre), and the recent addition of two new attractions (the Conservation Discovery Centre and Microworld), all underline the Zoo's primary conservation role. These new attractions use electronic devices and 'state of the art' technology to provide learning experiences quite different from those traditionally associated with zoos.

During 1991, a new East African exhibit opened. Described as the best and most advanced of its kind in the world, this exhibit gives visitors the experience of walking through an African savannah surrounded by free ranging animals.

Also opened recently was Harmony Farm. A working Western Australian farm, it is designed to demonstrate the principles of sustainable and renewable energy. Complementing the existing Australian wildlife park with its koala and kangaroo exhibits, Harmony Farm provides opportunities for animal contact and education on energy conservation.

Other principal attractions are the nocturnal house, otter and bear enclosures, lemur and gibbon islands, the water bird lakes, shady picnic areas and the new numbat enclosure which is the only place in the world where numbats, the Western Australian mammal emblem, can be seen on display.

Perth Zoo opens to the public every day of the year. During the year ended 30 June 1992, some 633,000 visitors took advantage of this opportunity. The Zoo has a permanent staff of 121 while a further 197 trained volunteers, called Docents, liaise with the public and provide guided tours on request.

| Rottnest Island                     | The Rottnest Island Authority administers the island, a reserve of 1,930 hectares comprising almost the whole of Rottnest Island and situated some 18 kilometres west of Fremantle, as a tourist and holiday resort.  |
|-------------------------------------|---|
|                                     | During the year ended 30 June 1992, 282,393 persons visited the Island by the daily commercial air and sea transport services. An additional 70,000 persons are estimated to visit the island by private craft.   |
| Local Government<br>Reserves        | Many local authorities hold land for recreational purposes, the<br>areas having been either Crown land vested in the Council,<br>acquired by purchase, or received under private bequest. Included<br>in these local government reserves are areas required to be<br>surrendered to the Crown by private owners to provide recreation<br>areas where land is divided into private residential lots. The<br>reserves are frequently developed as public parks or to provide<br>facilities for sports or camping. |
| Ministry of Sport<br>and Recreation | The Ministry's mission is to improve the well-being of all Western Australians through sport and recreation.  |
|                                     | Three programmes, the Sport Participation, Development and<br>Achievement Programme, the Community Participation and<br>Recreational Development Programme, and the Corporate Service<br>Programme are operated by the Ministry to achieve its aims.  |
|                                     | Throughout the State, it works closely with sporting and<br>community organisations and government to increase<br>participation and performance in sport, community fitness and<br>health.  |
|                                     | The Ministry, which is responsible to the Minister for Sport and<br>Recreation, has four specialist divisions: Sport; Recreation;<br>Regional Services; and Corporate Development and Services.   |
| Sport                               | The Ministry assists State sporting associations through funding,<br>management support, research, information-sharing and<br>consultancy, facility planning, coach education and talent<br>identification/development.   |
|                                     | Specialist programmes have been established by the Ministry in the areas of junior, senior and Aboriginal sport.  |
| Recreation                          | The Ministry also provides a wide range of recreational opportunities and actively encourages community-based recreation groups.  |
|                                     | The main objective in this area is to increase opportunities for people to participate in recreation.   |
|                                     | The Division uses a 'wellness' perspective to focus on the enhancement of life quality for the community. The Wellness  |

Branch provides a focus on the development of healthier and more self-responsible attitudes and behaviours in the community.

Many programmes have been designed to attract those people for whom sporting activities are not always readily available. To reach such people, the Recreation Division targets specific groups such as women in the home, those over 50 years of age, children and families.

The Ministry manages a chain of 12 camps which are available for hire by sport and recreation groups, schools, churches, community groups and families.

*Regional Services* This division is responsible for the delivery of all Ministry programmes to the 9 regional offices throughout the State and encourages and assists country people to take part in sport and recreation.

The regions are managed from regional offices. The regions are Great Southern (Albany office), Mid-West (Geraldton office), Central South (Northam office), Midlands (Northam office), Gascoyne (Carnarvon office), South-West (Bunbury office), Kimberley (Kununurra office), Pilbara (Karratha office) and Goldfields (Kalgoorlie office).

*Corporate Development* This division provides support services and advice to assist in and Services achieving corporate objectives.

### Sport in 1992

This section on Sport in 1992 has been compiled and written by Alan Newman of the Western Australian Sports Federation

**Olympic Games** The Games of the 25th Olympiad, held in Barcelona, Spain from July 25 to August 9, was the most eagerly awaited and watched event on the 1992 sports calendar with an estimated worldwide television audience of 3.5 billion people.

Western Australia contributed a record 41 competitors to the Australian team of 298, an increase of 14 on the previous highest representation of 27 at Seoul in 1988. The State also provided 13 officials in the Barcelona team. The rise of around 50 per cent in numbers from Western Australia reflected the increasing effectiveness of programs for elite sports people conducted by the Western Australian Institute of Sport (WAIS).

After 16 days of intense competition the final medal count showed Australia had won 7 gold, 9 silver and 11 bronze, its best result at a games held outside Australia.

Western Australian competitors whose names went into the record book were the five members of Australia's silver medal winning men's hockey team, Warren Birmingham, John Bestall, Greg Corbitt, Damon Diletti and Dean Evans and 29 year old Ramon Andersson, who collected a bronze medal when Australia finished third in the final of the 1,000m four man kayak (K4 1000) event.

Other noteworthy performances were given by swimmer lan Brown, 5th in the men's 400m freestyle final, Alison Inverarity, 8th in the final of the women's high jump, and teenager Vyninka Arlow, 10th in the women's 10m platform diving final.

Five months earlier ice speed skater Richard Nizielski had the distinction of becoming the first Western Australian to compete at a Winter Olympic Games when he represented Australia at Albertville, France.

#### Local Highlights

Australian Rules Football The Perth based West Coast Eagles became the first non-Victorian club to win the premiership in the 96 years of the Australian (formerly Victorian) Football League (AFL). The Eagles, captained by halfback John Worsfold, finished their sixth AFL season with the ultimate prize after a decisive 28 point win over Geelong before a crowd of 95,007 in the grand final at the Melbourne Cricket Ground on 26 September 1992.

The Eagles scored 16.17 (113) to Geelong's 12.13 (85). Main scorers for the Eagles were Peter Sumich with six goals and Peter Matera with five. Wingman Matera was a unanimous choice as best player in the final and was awarded the Norm Smith Medal as man of the match. Much of the credit for the Eagles triumph went to Mick Malthouse who took over as coach in 1990 and whose three seasons at the helm yielded, in order, third, second and first placings. Total attendance at the Eagles' 11 home games (7 at Subiaco Oval, 4 at the Western Australian Cricket Association (WACA) Ground) were 304,950. Crowds of 41,116, 71,745 and 95,007 watched Eagles matches in the finals.

The Sandover Medal for the fairest and best player in the Western Australian Football League (WAFL) was won by West Perth rover Robbie West (32 votes) from his teammate Derek Hall. East Fremantle won the WAFL premiership for the 27th time, beating South Fremantle 12.19 (91) to 9.13 (67) in the grand final at Subiaco Oval.

In the 1991-92 cricket season Western Australia won the Sheffield Shield for the 13th time since being admitted to the competition in 1947-48, beating New South Wales by 44 runs in the final at the WACA Ground. It was Western Australia's 11th Shield success since 1970-71, equalling the combined efforts of all the other States in the same period. Daryl Foster, who coached the State to eight

Sheffield Shield

& FAI Cup Cricket Wins of those Shield victories in his 17 seasons at the helm, announced his retirement at the end of the season and was later succeeded by Western Australia's leading wicket taker Terry Alderman. Shield final scores: Western Australia 396 and 344; New South Wales 415 and 281. In the final of the FAI Cup limited overs competition the result was reversed with New South Wales, 9/199, defeating Western Australia, 130, by 69 runs.

Exciting 21 year old batsman Damien Martyn became the youngest winner of the Sheraton Gold Cup as the Western Australian Cricketer of the Year.

*Women's Basketball Victory* In what was undoubtedly a vintage year for Western Australian sport, another success at national league level came when the Quit WAIS Breakers won the Women's National Basketball League title for the first time. In the final played at Perth's Superdrome, the Breakers, led by Robyn Maher, beat the Dandenong Rangers 58-54. The Breakers, who lead the competition for most of the season, were coached by Tom Maher in his first season with the club as coach.

Perth Wildcats The Perth Wildcats failed in their bid to become the first team to win three consecutive National Basketball League titles, losing to the Melbourne Tigers in the playoffs. The loss of key players at crucial times during the season upset the team balance of the Wildcats and they did not attain the heights of the previous two seasons.

Subsequently the coaching contract of American Murray Arnold was terminated and he was replaced by Adrian Hurley, national coach for the past eight years. South East Melbourne Magic beat the Melbourne Tigers in the best of three finals playoff after losing the first match.

Perth Wildcats forward Andrew Vlahov was selected in the National Basketball League's All Star Five.

- Perth HeatPerth Heat surrendered the Australian Baseball League crownCools Offwon in 1991 when they were beaten by the Gold Coast Dolphinsin the best-of-five final series played in Perth and the Gold Coast.
- ThundersticksIn October the Perth Thundersticks made their debut in the<br/>Stunning DebutStunning DebutIn October the Perth Thundersticks made their debut in the<br/>inaugural competition in 1991. The Thundersticks made up for<br/>lost time in beating the defending champions the Brisbane Blades<br/>in the final in Melbourne to clinch the title at their first attempt.<br/>They won 4-3 in a sudden-death shoot out after neither side had<br/>scored in the eighty minutes of regulation play.
- Water Polo Western Australia was represented by Perth Torpedoes and Fremantle Sharks in the newly formed National Water Polo League. The Sharks reached the semi-finals before being

eliminated by Richmond Tigers from Victoria who beat Cronulla, from New South Wales, for the title.

State Soccer Team<br/>Beats European CupLocal administrators intensified efforts to have a Perth team<br/>competing in the National Soccer League following the State<br/>team's meritorious 3-2 win over German side Werder Bremen,<br/>holders of the European Cup Winners' Cup.

- Netball Slip In netball, the State's most widely played women's sport, Western Australia slipped to a disappointing sixth place of the eight teams in the Australian senior championship in Launceston. The Western Australian Netball Association reacted quickly by announcing a series of new initiatives, including the regionalisation of the Netball League.
- Bowls There was no stopping the highly competitive 16 man State lawn bowls team, which remained unbeaten through the seven rounds of the Australian championship in Canberra to retain the ABC Shield captured in Darwin in 1991 when it also won all seven matches.
- *Parry the Master* Craig Parry had 3 shots to spare when he beat a powerful international field in the prestigious Australian Masters golf championship at Huntingdale, Victoria. It was the most significant achievement by a Western Australian golfer since Graham Marsh won the 1977 World Matchplay title in England and the 1983 Australian Masters, also at Huntingdale.

| TABLE 9.5 - NUMBERS REGISTERED: MAJOR SPOR | ГS |
|--|----|
|--|----|

| Football              | 55,500 |
|-----------------------|--------|
| Netball               | 47,844 |
| Bowls (men and women) | 34,580 |
| Tennis                | 32,593 |
| Indoor cricket        | 29,350 |
| Golf (men & women     | 28,936 |
| Cricket (men & women) | 24,244 |
| Basketball            | 21,640 |
| Teeball               | 15,980 |
| Hockey (men & women)  | 14,089 |
| Tenpin bowling        | 13,578 |
| Fishing               | 13,435 |
| Soccer (men & women)  | 12,188 |
| Yachting              | 10,632 |
| Squash                | 9,972  |
| Darts                 | 9,916  |
| Softball              | 8,785  |
| Gymnastics            | 6,359  |
| Eight Ball            | 5,340  |
| Little Athletics      | 5,160  |
| Swimming              | 5,014  |
| Taekwondo             | 5,000  |
| Surf Life Saving      | 4,820  |
| Baseball              | 3,387  |
| Volleyball            | 3,200  |

Source: 1990 Ministry of Sport & Recreation Census

Western Australian teams won national honours in women's gymnastics, darts, speed roller skating, smallbore rifle shooting, softball, tennis (Interstate Challenge Cup), flying disc, calisthenics and yachting (Lexcen Cup).

Other successful Western Australian achievers in world championship/international events were: Shelley Taylor-Smith (long distance swimming); Natalee Fuhrmann (wave skiing); Ross Dunkerton (motor rallying); Louise Sauvage, Priya Cooper, Mandy Maywood and Tracey Cross (sport for the disabled); Cheryl Begg and Desly Hill (speed roller skating); Keith Sullivan (darts); Roger Mackay (golf); Ramon Andersson (kayaking); Andrew Burdin, Julian Prosser, Lisa Wilcocks, and Christine Wilson (beach volleyball); Jodie Cooper (surfboard riding); Alison Inverarity and James Miller (athletics); Blair McNaught (royal lifesaving); and Henk Vogels and Darryn Hill (cycling).

Winners of Australian championships included Jane Warrilow (gymnastics); Helene Thurston (croquet); Jane Leary (women's golf); Miklos Szabo (judo); Mark Golding (karate); Pip Alder (rowing); Tony Davis (cycling); Rob Herridge (motor rallying); Jacquie McKenzie (swimming); Chris Himing (flying disc); Fiona Caporn (taekwondo); and Dean Capobianco, Jayne Moyes and Barry Acres (athletics).

- International Events Major international events held in Perth were the Hopman Cup team tennis tournament, Telecom Rally Australia and two rich golf tournaments.
- Hopman Cup The fourth Hopman Cup was won by Switzerland, represented by Jakob Hlasek and Manuela Maleeva-Fragniere, who maintained the supremacy of European teams in the \$700,000 tournament. Previous winners were Czechoslovakia, Spain and Yugoslavia.
- TelecomTelecom Rally Australia, round 10 of the World Rally<br/>Rally AustraliaRally AustraliaTelecom Rally Australia, round 10 of the World Rally<br/>Championship, was held over four days from September 18-21<br/>and was estimated to have injected \$20m into the local economy.<br/>A total of 96 cars contested the gruelling event run east and south<br/>of Perth and on a purpose built gravel track at Langley Park. The<br/>race was won by France's Didier Auriol (Lancia) from Finland's<br/>Juha Kankkunen (Lancia). Western Australian Ross Dunkerton,<br/>fifth in a Mitsubishi, was the highest placed Australian.
- Vines Classic The \$700,000 Vines Classic golf tournament was won by Australia's former British Open champion Ian Baker-Finch and the \$250,000 Takano Yuri Classic women's tournament at Joondalup went to Britain's Alison Nicholas in a playoff.
- 2002 Games bid The Minister for Sport and Recreation, Mr Graham Edwards, announced in September that the State Government and Perth City Council would combine to bid for the Commonwealth Games of the year 2002. Perth was host city for the 1962 Games.

|       |          |        |      | increase   |       |          |         |           |
|-------|----------|--------|------|------------|-------|----------|---------|-----------|
|       |          |        |      | internatio |       |          |         |           |
| was e | establis | hed to | help | organise   | a ser | ies of l | biennia | al sports |
|       |          |        |      | g South-E  |       |          |         | •         |

The Western Australian Football Commission's long running campaign to redevelop Subiaco Oval was given a boost when the Federal Government said it would contribute \$8 million towards the project.

West Perth, the State's oldest existing football club (formed in 1891), announced it would change its name to Joondalup Falcons and relocate to the Joondalup sporting complex in 1994.

Plans were announced for the construction of a State Tennis Centre at Burswood as the new headquarters of Tennis West (Western Australian Lawn Tennis Association).

The Perth City Council announced it would spend \$5 million on upgrading Beatty Park Aquatic Centre, venue for swimming events at the 1962 Commonwealth Games.

Horse Racing Former Western Australian apprentice jockey Damien Oliver, now based in Melbourne, rode four year old *Mannerism* to a photo finish victory in the \$1 million Caulfield Cup (2400m) in October 1992 and increased his lifetime stake winnings to more than \$10 million.

Troy Jackman, another successful local jockey also based in Melbourne, rode three year old colt *Old Pompeii* to victory in the South Australian Derby-Adelaide Cup double in May 1993.

In harness racing, champion Western Australian pacer *Jack Morris* capped a meteoric rise to fame by winning the final of the 1993 Interdominion Championship held at Albion Park, Queensland. *Jack Morris* became the first Western Australian pacer to win the final since *Village Kid* in 1986, also at Albion park.

Fred Kersley, who started his career as a reinsman in 1957, became only the third Australian to drive 2,000 winners when *No Surrender* scored in an accident marred race at Gloucester Park.

Taxation reform assistsFar-reaching taxation reforms affecting horse racing, trotting and<br/>greyhound racing, announced by the State Government on<br/>September 1, brought sighs of relief from within the industries.<br/>The tax relief package entailed a reduction in turnover tax from 6<br/>per cent to 5 per cent and clubs were allowed to retain on-course<br/>betting tax. The Western Australian Turf Club's response was to<br/>lift stakes by a total of \$1 million for the remainder of the 1992-93<br/>season. The Western Australian Trotting Association restored<br/>midweek meetings which had not been held since 1990. A new

Board of Management was appointed to control the affairs of the Western Australian Greyhound Racing Association.

Winners of principal races in the 1992-93 season were:

| RAC  | ING   |
|--|---|
| Australian Derby<br>Karrakatta Plate<br>Oaks Stakes<br>Perth Cup<br>Railway Stakes<br>Beat Diabetes 2 Stakes | Dance The Day Away<br>Dynamic Beau<br>Jevresa<br>Field Officer<br>Welcome Knight<br>Red Javelin |
| Leading Jockey 1991-92   | Mark Sestich  |
| Leading trainer (equal) 1991-92  | Lou Luciani and<br>Neville Parnham  |
| TROT   | TING  |
| Benson & Hedges Cup<br>The Pearl Final<br>Derby<br>Golden Nugget   | The Harlem Boy<br>Whitby's Merit<br>Chandon<br>Valley Champ                                     |
| GREYH  | OUNDS   |
| Gold Cup<br>Derby<br>Oaks  | Amy's Doll<br>Nikemos<br>Sandameri  |

#### Key Sporting Organisations

Ministry of Sport and Recreation The Ministry is responsible to the Minister for Sport and Recreation Recreation for assisting with the development of sport in Western Australia. It works closely with sporting and community organisations and the three tiers of government to increase participation and performance in sport, community fitness and health. Among the services it offers are schemes for planning and development, sports information, coaching, country assistance, sports trainers, club administration, Aboriginal sport and junior sport education. It coordinates services offered Statewide through nine regional offices. The Ministry also administers the Sports Lottery fund.

Western Australian<br/>Sports FederationThis is an independent, peak, umbrella body consisting of 110<br/>State Sport Associations and other organisations representing<br/>various aspects of sport in Western Australia. The Federation's<br/>prime purpose is to provide a strong lobby voice for sport. It<br/>provides a forum for the exchange of information and ideas that<br/>benefit the further development of sport. It establishes and<br/>implements policies to promote this development and also

provides a range of support services to its members to assist them in the administration, promotion and development of their own sports.

The Federation receives an annual budget allocation from the State Government and also generates sponsorship from the private sector to assist with the implementation of its programs and policies. It is also the manager and custodian of the Museum of Western Australian Sport, the State's main repository for historic artefacts, photographs and documents relating to sport.

- Western Australian Sports Council The Sports Council advises the Minister for Sport and Recreation on sport policy issues and the future development of sport in Western Australia. The Council comprises a Chairman and 11 Councillors appointed by the Minister and is designed to represent a wide cross-section of the sporting community.
- Western Australian Institute of Sport The role of the Institute, launched in 1985, is to provide for the development of Western Australia's elite and potentially elite athletes through programs designed in consultation with state and national sporting organisations. It receives funding from the State Government, the Australian Sports Commission and corporate sponsorship.

These funds are used to assist athletes in two categories: **Category** A — selected team sports; and **Category** B — scholarships for athletes who compete primarily as individuals in sports such as track and field athletics, swimming, tennis and golf. The Institute is also responsible for the management of the Western Australian Hall of Champions, which honours the deeds of outstanding athletes.

Western Australian<br/>State SportsPerth's Superdrome was established under the State Sports Centre<br/>Act in 1987 with the primary role of providing a venue of<br/>international standard to cater for high performance training and<br/>competition in more than 20 different sports. It houses a number<br/>of Western Australian Institute of Sport training squads and is the<br/>venue for international, national and state events as well as<br/>providing office accommodation for several sporting bodies. The<br/>State Sports Centre is administered by a Board of Management<br/>appointed by the Minister for Sport, to whom the Board is directly<br/>responsible.

Other special interest groups formed to service specific needs or areas in sport include Women's Sport Foundation, Western Australian Coaching Foundation, Aboriginal Sport & Recreation Foundation, Junior Sport Council. Each have independent management with their Boards being appointed by the Minister.

## THE ECONOMY

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## Chapter 10

## THE ECONOMY

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#### Chapter 10

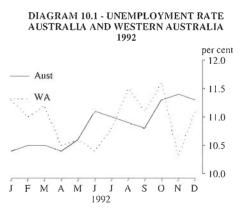
## THE ECONOMY

The first two sections of this chapter, an analysis of the performance of Western Australia's economy during 1992, titled The Year in Review, and an assessment of the prospects for future growth, titled Economic Prospects, have been provided by Ms Nicky Cusworth, Economist, Chamber of Commerce and Industry, Western Australia.

## The Year in Review

In the aftermath of the 1990-91 recession Western Australia's economy experienced an uneven recovery. Showing strong growth in activity early in the year, the economy faltered in the middle of 1992, before picking up again in the later months of the year.

This erratic performance was most evident in the labour market. In the five months to June 1992, Western Australia went from having Australia's highest unemployment rate, seasonally adjusted, to having the lowest. From June onwards, employment contracted and unemployment climbed. Western Australia's unemployment rate then remained in line with the national average until the latter part of the year when it again fell below the Australian rate.



Source: Catalogue No. 6203.0

**Loss of Momentum** As was the case nationally, Western Australia's poor performance in the middle of 1992 proved to be a temporary loss of momentum rather than a relapse into recession. Throughout 1992, Western Australia and Queensland outperformed all other States on most key economic indicators with the exception of the labour market.

> Although Western Australia's recovery eventually slowed more rapidly than most States, it did not slow enough to bring it down to the national average growth in areas such as retail sales, job vacancies, car registrations, and building approvals.

> Western Australia generally suffered more than the other States at the onset of recession, moving into its downturn sooner and more steeply. Consequently, much of the strong annual growth recorded in early 1992 was a reflection of the depth of the recession in 1991, with which the data were being compared. In this respect Western Australia was 'catching up' with the other States.

> Mirroring the national recession, the shock waves of the initial downturn in Western Australia travelled from the production industries (notably construction and agriculture) via distribution (retailing and wholesaling) to the service sector. Weaker activity in the public sector and some private services was, for example, largely responsible for the sharp decline in female employment in evidence from June 1992.

> The two States which have had the strongest economic recoveries, Western Australia and Queensland, have many characteristics in common. Both have rapidly growing populations and both derive a large proportion of their respective State incomes from exports of primary products. As successive forecasts for world economic growth have been revised downward and world demand and prices of commodities remain weak, both States have lost some of their lead, relative to other States.

> For Western Australia, the health of the world economy is crucial to domestic economic performance as the State derives about twice as much of its income from exports than is the case nationally. In the last few years it has overtaken both New South Wales and Queensland to become Australia's largest exporting State.

> The Western Australian economy depends crucially on the continued vigour of a number of key overseas markets. Sales to Japan alone, for example, are almost twice the value of goods and services 'exported' internally to the rest of Australia - in some respects, economic conditions in Asia have more relevance to the Western Australian economy than conditions in the Eastern States.

During the early and mid recession, mining was one of the few strong sectors of the Western Australian economy, helping to offset the severe slumps in agriculture and construction. Despite this strength, the value of Western Australia's mineral production fell in 1992 and weak world prices have depressed activity, even allowing for gains from the lower exchange rate.

**Population Growth** Both Western Australia and Queensland have experienced rapid population growth for the past decade. Both States take an above-average proportion of overseas migrants, and both have tended to attract internal migrants from other States. Population growth has given these States an inherent growth stimulus with the increase in population translating into growing demand for housing, goods and services, and infrastructure. While this gives both State economies a certain dynamism, the greater than average increase in population means that growth in State-wide economic activity does not automatically translate into higher per capita living standards.

Western Australia's population growth did, however, slow dramatically with the recession, reflecting both the policy-driven fall in overseas migration and the demand-driven fall in interstate migration which has accompanied its poorer economic performance.

Net interstate migration was negative in 1991-92, the first negative result in 20 years.

In some respects this facilitated the economic recovery, especially by slowing labour force growth and cutting the level of expansion in employment needed to generate an improvement in the unemployment rate. It also meant, however, that the recovery itself was a little slower, as the demand growth associated with migration slowed. In the housing market, for example, lower migration was partly to blame both for relatively high vacancy rates in the rental market, and somewhat slower growth in underlying demand for construction.

Western Australia still had above average population growth, both because its natural rate of population increase was relatively high, and because the State still attracts a significant proportion of overseas migrants. As the gap between the rate of growth in the Western Australian and national populations narrowed, a similar effect was evident in their relative rate of growth in economic activity.

**Investment** Investment, as is the case with export activity, contributes an above average share to the economic growth of Western Australia in comparison to Australia. This reflects the importance to the State of construction, and especially engineering construction associated with the minerals sector.

### The Economy

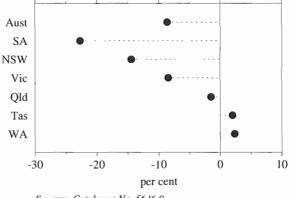


DIAGRAM 10.2 - PRIVATE NEW CAPITAL EXPENDITURE Pecentage change 1992 over 1991

Source: Catalogue No. 5646.0

Even though real private investment in Western Australia has fallen dramatically since its 1989 peak, compared to the even steeper national drop in investment the State maintains relatively high levels of investment. New capital expenditure in original terms for the year to December 1992 compared to the previous 12 months increased in Western Australia by 2.4 per cent compared to a decrease of 8.6 per cent for Australia as a whole. All other States, with the exception of Tasmania, suffered a decline in investment over the same period.

A dampening effect on investment resulted from the weak short and medium term prospects for commodity prices which caused the start dates for some minerals projects to be deferred. As a result, forecast engineering construction activity was revised downwards. Prospects for commercial construction also appeared bleak. Up until 1991-92 commercial construction had made up a significant proportion of total investment in Western Australia though less than the national average.

It is likely to be several years before any further major office developments are initiated in central Perth. Even when unprecedented vacancy rates became apparent in 1990-91, office building projects in the central business district, which had been initiated at the peak of the property boom, were adding to total construction activity. When these projects were completed in late 1992, almost a third of central business district office space was empty.

In summary, the lower exchange rate helped to ease the effects of weak world commodity prices on Western Australia's mineral and agricultural sectors, but low world demand and prices, high stock levels, and the risk associated with currency volatility, combined to hamper growth during the year. The minerals sector remains a robust industry, perhaps the linchpin of Western Australia's private sector, and offers hope for recovery. There are still some notable bright features, including LNG and oil, improving gold and alumina prices, and the lower exchange rate but it is unlikely that mining will be able to carry the Western Australian economy and offset weaknesses in other sectors to the same degree it has up until 1991.

## **Economic prospects**

During much of the 1980s Western Australia achieved an enviable record of growth in employment, Gross State Product and household income ahead of both the national average and the Organisation of Economic Cooperation and Development (OECD) average. This was achieved through a variety of circumstances which combined to create a strong growth spiral:

- the boom in investment and construction activity as new areas of the mineral resource sector were opened up;
- the growth in the volume and value of mineral production which this new activity generated;
- the subsequent rise in exports, which was accommodated by a strong and growing world economy;
- parallel expansion, at least in the middle of the decade, in production of key agricultural products;
- the boom in housing and commercial building;
- the expansion of the finance, property and business services which accompanied financial de-regulation; and
- rapid population growth fuelled by interstate and overseas migration.

Recession and Recovery The recession in the years 1990 to 1992 was in marked contrast to the boom of the 1980s. Recession brought out both the strengths of the State's economy and its vulnerability. In the early stages of the downturn Western Australia, dragged down by the collapse of farming revenues as the bottom fell out of the wheat and wool markets, entered recession sooner and more sharply than other States. On the reverse side, while the State entered recession sooner and harder than the rest of Australia, it has also enjoyed a more rapid recovery. In late 1991 and most of 1992, a range of key economic indicators from retail sales to employment growth showed Western Australia performing better than virtually any other State.

> In part, this reflected the State's 'catching up' from its deeper trough of recession but it also showed the resumed influence of the engines of growth - population growth, exports, mineral

production and the engineering construction work which goes with it - which gave the State above average growth throughout the 1980s.

It also reflects the relative efficiency of the Western Australian economy. The State does not carry the deadweight of uncompetitive manufacturing industries, now facing structural reform, which may impede recovery in South Australia and Victoria. Its commodity export industries, although facing weak prices and a roller coaster exchange rate, are internationally competitive.

Employment The service and retail industries accounted for most of the growth in employment in Western Australia during the 1980s. Although the growth achieved in these sectors enabled Western Australia to absorb its expanding population while simultaneously reducing unemployment, the long-term outcomes may not be unequivocally beneficial. With a few notable exceptions, service industries tend to be locally oriented, with most services sold within the State rather than interstate or overseas. As such, they tend to mirror (and so exaggerate) swings in the economy brought on by external shocks, rather than acting as 'stabilisers' as more broadly based industries might.

> Again, much service sector employment tends to be labour intensive, with relatively low labour productivity. As a result, wages are relatively low. The stagnation of real earnings in recent years partly reflects the shift in employment from high-pay, high-productivity occupations and industries, to low-pay, low-productivity ones.

> The shift in employment was also associated with a growing emphasis on temporary, part-time and less secure employment. While such employment patterns meet the needs of some of the labour force - many women, for example, welcome flexible working patterns - it does not meet the needs of all of them. In September 1992, 50,000 Western Australian part-time employees would rather have worked longer hours. The stress on low-paid low-productivity employment has depressed the earnings potential and skills utilisation of the whole workforce.

Unsustainable Primary Products Base The engines of growth which provided Western Australia with such an enviable economic record throughout much of the 1980s cannot be expected to drive the economy so strongly in the 1990s. Nor is it wholly desirable that they should do so. The pattern of output growth in the primary industries supporting a growing superstructure of service sector employment has exacerbated the instability of the economy, and increased its vulnerability to external shocks.

> The expansion of mineral exports over the 1980s makes the State more vulnerable to a mineral commodity price shock than in the

past. While a fall in the exchange rate would follow any major decline in Australia's terms of trade, as it did in 1985 and (eventually) in the most recent recession, this in itself incurs costs in terms of inflation, uncertainty and associated higher risk premiums, and a diminished terms of trade adjusted GDP.

During the 1980s Western Australia recorded annual growth in the volume of its minerals output of over 10 per cent a year, achieved through strong growth in production in some key sectors. Prices of mineral commodities tend to be, however, more volatile than prices of other goods and services. While Western Australia produces so many types of mineral commodities that its total primary sector can generally absorb large swings in the price of a single mineral commodity such as in the case of gold or iron ore, the price cycles of all mineral commodities tend to move in tandem with cyclical trends in the world economy, but with much greater volatility. Over the longer term, the growth in prices of mineral commodities generally falls behind the growth in prices of other goods and services leading to a decline in the real or relative value of the State's resources sector in comparison with the other productive sectors of the economy.

The price outlook for many of the State's key mineral exports is weak. Australian Bureau of Agricultural Research Economics (ABARE) forecasts suggest that the 'real' prices (relative to consumer price inflation) of gold, iron ore and aluminium will tend to fall over the next five years. This is consistent with the historical tendency for commodity prices to rise less quickly than prices of other goods.

With a weak international commodity price outlook, and renewed but still modest world growth, the chances of new projects being initiated at the same rate as during the mid-1980s are slim. The extraordinary expansion of minerals output over the past decade is unlikely to be repeated. Minerals production should continue to grow, and continue to contribute to Gross State Product growth, but with slower growth in volumes and weak world prices, the contribution of minerals to the State's economy will be less dramatic than in the 1980s..

The essential challenge for Western Australia's primary industries will be to maintain a growing real income even though the value of goods produced tends not to grow as fast as the volume of output. It is a challenge which has been met so successfully for so many years by the mining sector that it is easy to forget that it is It impossible inherently unsustainable. is to extract ever-increasing volumes of a finite resource indefinitely; sooner or later the resource will be either exhausted or uneconomic to extract. Fortunately, in Western Australia, this point will come later rather than sooner.

The Economy

Even if a return to pre-recession growth patterns were desirable, it is not likely to be an option. None of the key catalysts to growth which provided Western Australia with such an enviable economic record in the 1980s can be guaranteed to drive the economy so strongly in the 1990s.

Investment Western Australia's historically high investment levels have Prospects Western Australia's historically high investment levels have resulted from the substantial investments associated with its mineral resource industry. Investment is likely to remain above the national average as the minerals sector continues to expand, but along with minerals output, engineering construction activity is unlikely to return to the growth levels of the mid-1980s.

> Property investment is likely to be weaker in Western Australia than in other States. Vacancy levels in CBD office buildings exceeded 30 per cent in 1992, the highest of a series of record vacancy rates across Australia's capitals. Until that excess is absorbed - a process which could take a decade or more - it is unlikely that any new major office building projects will be initiated in the CBD. This will dampen total commercial building activity for some years, though prospects for other types of non-residential construction, such as retail and factories, should improve as stronger growth resumes from 1993.

**Slowing Population Growth** Like the role of primary industry, rapid population growth is such an ingrained feature of the Western Australian economic and demographic structure that it is easy to forget that it is not inevitable.

The recent slowing of population growth, and the net loss of migrants interstate in 1991-92 for the first time in 20 years, emphasise that this is an unpredictable part of the State's economic growth equation. Interstate migration, and the percentage of overseas migrants attracted to the State, are largely a feature of relative economic performance.

If national and Western Australian growth rates remain low and high levels of unemployment persist, interstate and overseas migration could also be curbed. However, Western Australia's rate of natural population increase is above that of the other States, and it should continue to take an above average share of overseas migrants, even if absolute numbers decline.

If Western Australia's population growth in the next few years is low by historical standards, it is still likely to remain above the national average. In absolute terms, however, the level of population growth, and its stimulus to economic growth, could be less than in recent years.

Short TermWestern Australia should continue to perform better than the<br/>national average on most key economic indicators, although the<br/>gap with other States could narrow in the future. The release of

pent-up demand after the trough of the recession, which was stronger than the national average because Western Australia's early recession was actually deeper, had all but played itself out by the end of 1992, with only some residual housing demand still to be absorbed. The statistical effect this had on the State's measured year-on-year growth in key economic trends in 1992 comparing activity during the year with the very deep trough in 1991 - had also largely worked through the published data.

There is a real prospect of more favourable conditions in the relatively near future. If, as expected, the national economic recovery gains momentum as world economic growth picks up, albeit slowly, and the currency stabilises at around its level of late 1992, then higher growth could resume from mid 1993.

Medium TermIn the medium to longer term, the range of possible development<br/>paths is quite broad. Western Australia's economic development<br/>seems about to enter a new phase. The recession, boom, recession<br/>cycle of the past decade marked a turning point in the State's<br/>economic direction whose outcome is still far from clear.

While there is considerable consensus on the path which Western Australia should take - centring on diversifying into downstream processing and manufacturing to broaden the economic base and reduce economic volatility - it is by no means certain that these objectives will be achieved.

For most of the 1980s Western Australia achieved a favourable record of economic and employment growth. This can be attributed to a number of factors: the rapid expansion of output in the primary, and especially the minerals, sector in the 1980s; higher investment and export income associated with this development; and the stimulus provided by the growth in population. These catalysts should continue to promote faster growth in Western Australia than other Australian States into the 1990s, but the stimulus they provide may be weaker.

In conclusion, the engines of growth which drove the Western Australian economy so rapidly in the 1980s will still promote growth into the 1990s and beyond, but they will no longer be working in overdrive.

If Western Australia is to continue to achieve rapid growth into the 1990s - and it has the potential to do so - it must look to additional sources of growth to enhance its basic natural advantages from its primary industries and growing population This is not only necessary, it is desirable. The emphasis on primary industries as the main engine of growth makes the State especially vulnerable to commodity price shocks, giving it a volatile, 'boom-bust' economy..

## **Historical Overview**

The economy of Western Australia has been fundamentally based on the production and export of mineral and agricultural products since the founding of the Colony in 1829. While the economy has recorded a pattern of almost continual growth since foundation, the growth pattern has been influenced by a number of development phases. Almost exclusively, these development phases have involved the successful exploitation of new opportunities offered within the mineral and agricultural sectors.

Settlement The Swan River Colony was established in June 1829 as a private settlement based on a system of land grants. During the formative years of the Colony the land grant system actually contributed to the shortage of money capital which, exacerbated by a continuing shortage of labour, left the Colony struggling to overcome these disadvantages. In an effort to redress the labour shortages and to develop a similar momentum for growth being experienced by the other new colonies of South Australia and Victoria, the Administrators of the Colony requested the British Government to commence transporting convict labour. Despite the arrival of the first convicts in 1850, the problems persisted and a slow rate of economic and demographic growth continued until the 1880s.

Some economic progress was being made however. By the 1860s, Western Australia had already developed several industries capable of earning valuable export revenues. Wool growing, for example, became the State's first major export industry with most of the produce going directly to Britain. In 1870 wool earned the equivalent of \$99,000, some 28 per cent of all export revenue earned by the Colony. Other products which contributed to export earnings were wheat, timber, and minerals such as lead and zinc ores.

**Gold: Catalyst for Development** In the decade preceding the end of the nineteenth century, the economy of Western Australia grew dramatically as a result of the discovery and mining of commercial quantities of gold. Lured by the potential riches of the gold discoveries, overseas and interstate arrivals poured into the Colony. The rapid growth in population is illustrated by examining the thirty year period 1880 to 1910:

| Year | Males   | Females | Total   |
|------|---------|---------|---------|
| 1880 | 16.985  | 12,576  | 29,561  |
| 1890 | 28,854  | 19,648  | 48,502  |
| 1900 | 110,088 | 69,879  | 179,967 |
| 1910 | 157,971 | 118,861 | 276,832 |

#### **TABLE 10.1 - POPULATION GROWTH**

Source: Catalogue No. 1300.5

The ensuing gold rush also attracted considerable investment capital into the Colony which enabled the government to embark on a bold program of infrastructure initiatives. Railway systems were greatly extended and Fremantle harbour was made into a deep water port.

In order to broaden the economic base of the fledgling Colony, priority was given to the development of primary resources. Acreage of wheat under cultivation trebled between 1905 and 1911 and trebled again by 1916. Western Australia was being transformed from an importer of grain and flour to a large scale exporter to such an extent that wheat displaced gold and wool as the State's principal export.

The following table illustrates wheat's predominance as an export commodity.

| Commodity |          | 1900   | 1910    | 1920    |
|-----------|----------|--------|---------|---------|
| Wheat     | (tonnes) | 54,839 | 249,049 | 679,109 |
|           | (\$,000) | 813    | 5,083   | 12,258  |
| Wool      | (tonnes) | 3,161  | 4,125   | 11,883  |
|           | (\$,000) | 523    | 541     | 1,934   |
| Gold      | (kg)     | 31,103 | 10,389  | 1,275   |
|           | (\$,000) | 7,589  | 2,835   | 452     |

**TABLE 10.2 - OVERSEAS EXPORTS** 

#### Source: Catalogue No. 1300.5

Although somewhat isolated from the rest of the world, the Western Australian economy and social fabric were still severely affected by the world-wide Depression of the early 1930s. Public works and welfare programs underwent major cutbacks and wages were compulsorily reduced. The basic weekly wage, for example, was reduced from \$8.70 to \$6.90 in 1930.

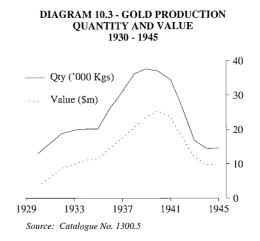
To counteract rising unemployment, many of those unemployed who were receiving some form of relief were transferred onto new public works projects, including the construction of water storage, sewerage and transport systems.

The Depression revealed that the State was overly dependent on a few primary industries and was consequently vulnerable to fluctuations in commodity prices. The average value of wool fell from 29.87 cents per kilogram in 1929, to 19.37 cents the following year. Wheat halved in price from \$16.69 per tonne in 1930 to \$8.42 in 1931.

Even when commodity prices did recover in 1933-34, the position of the State's graziers continued to remain parlous as a result of a series of disastrous droughts throughout the remainder of the decade.

#### Depression and War

Fortunately, the impact of the Depression was somewhat alleviated by the renewed prosperity of the gold industry. During the Depression years gold production continued to rise, albeit rather slowly. In the period 1934 to 1939, however, the value of gold exports doubled to reach a peak of 37.76 thousand kilograms (with a value of \$23.7 million) in 1939. By the end of that year, goldmining accounted for some 96 per cent of the State's entire mineral output.



The outbreak of the Second World War led to the market uncertainty of the 1930s being replaced with a system of fixed-price controls which offered farmers, in particular, greater protection from commodity price fluctuations. Indeed, the war period witnessed an unprecedented level of Commonwealth government intervention, including the introduction of rationing, labour control and the imposition of income taxes.

The manufacturing industry was given a valuable boost by the increased munitions work undertaken during the during the war years and the general economic reconstruction immediately following the cessation of hostilities. In 1945-46, for example, the market value of manufacturing output exceeded the value of primary production.

Rapid population growth and its stimulative effect on housing and construction, renewed overseas demand for commodities and the release of pent-up consumer demand, were among the major factors leading to unprecedented growth and prosperity for the Western Australian economy in the 1950s. Largely due to the stimulus provided by the Korean War, wool prices soared from 105.91 cents per kilogram in 1950 to 263.50 cents per kilogram in 1951. In 1955-56, wool production reached a then record 67.9 million kilograms. In the same year, the State's wheat crop similarly yielded a record 1.4 million tonnes; an increase of 38 per cent on the 1949-50 crop. Mining: The Boom Years Following a period of slower economic growth which occurred after the winding down of the economic boom of the early 1950s, a much needed major boost to Western Australia's economy came in 1960, with the lifting of the long standing embargo on the export of iron ore. Exports grew spectacularly from 809,000 tonnes in 1960 to 32 million tonnes in 1970 with Japan providing a ready market for the vast North-West reserves of iron ore.

Foreign investment in the mining industry grew dramatically and a full scale mineral boom ensued. The mining and export of commercial deposits of nickel and bauxite added to export revenue generated by iron ore. During the period 1963 to 1972, new mining townships were opening up in Western Australia at the rate of two every three years providing a significant contribution to the housing and construction boom accompanying the mining boom of the time.

In the 1970s, the Western Australian economy again grew substantially, despite fluctuations as a result of the Organisation of Petroleum Exporting Countries (OPEC) energy supply shocks in 1973-74 and 1979-80. Growth continued to occur during this period primarily because the State was largely insulated from the effects of the energy price rises. The insulating factors were: an efficient and productive rural sector (particularly wheat, which increased its output value fourfold from 1973-74 to 1979-80); continued overseas demand for mineral resources (which by the late 1970s would comprise over 50 per cent of the State's exports); and a relatively small manufacturing sector which lessened the State's overall reliance on oil.

The OPEC crude oil crisis of 1973-74 was, in fact, to prove a catalyst for renewed petroleum exploration and development. During the inid 1970s expenditure on private petroleum exploration activity rose from \$36.8 million in 1976 to a peak of \$463.4 million in 1982.

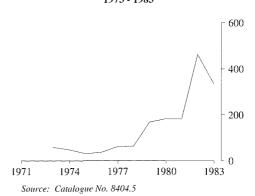


DIAGRAM 10.4 - PETROLEUM EXPLORATION PRIVATE EXPENDITURE 1973 - 1983 Structural Change and Consolidation Following a resources boom at the end of the 1970s and in the early 1980s, the Western Australian economy declined in 1982-83 in line with the international recession. Aware of the State's continued vulnerability to changes in the price of its major commodity exports and the need for increased output value, the government further encouraged structural change and the development of value-added industries, particularly those involving the downstream processing of raw materials. The development of the North-West shelf is one such project, with liquefied natural gas production set to be a major long-term export income earner into the twenty-first century.

> The services sector of the Western Australian economy continued to experience rapid growth and workers in this sector now comprise the dominant proportion of the labour force. Increases have been particularly evident in retail and wholesale trade, recreation and personal services.

> Despite the steady long-term decline in Australia's relative position in the world economy, the pattern of economic activity in Western Australia has changed very little since the turn of the century.

> The export of primary resources continues to dominate production statistics, with wool, wheat and timber together with gold and an array of new minerals (including iron, bauxite, diamonds and nickel) and natural gas providing the bulk of the State's export income.

## The Volatile 1980s: Times of Change

## **Economic Policy** The 1980s decade was one of contrasting fortunes for the Australian economy with the decade opening with the economy moving into recession, followed by a five year period of sustained growth and eventually closing with, once again, a movement back into recession.

Set against the background of the increasing globalisation of the world economy, the significant economic events and trends which occurred during the 1980s included: the comprehensive deregulation of the Australian financial system including the floating of the Australian dollar; a slow but on-going process of structural change and microeconomic reform including the implementation of the Accord between the government and the union movement; a steady rolling back of tariffs; and a continuation of the vulnerability of exports to commodity price fluctuations. With a generally tight fiscal policy prevailing for much of the decade, monetary policy, via interest rates, and incomes policy, transmitted through the Accord, were the primary instruments of economic policy in the 1980s. The decade saw the first Budget surpluses for a number of years but also saw these surpluses transformed into large deficits by the end of the decade.

Financial deregulation and commodity price variations were seen to contribute to the relative instability of the Australian dollar and the Balance of Payments which, in turn, contributed to the volatility displayed by the economy throughout the decade.

It was within this evolving framework of deregulation and structural change that relatively high growth rates were being recorded despite continuing high unemployment and, at least until 1990-91, high inflation and interest rates.

**Population** Population growth has been encouraged through overseas immigration since the Second World War and has been a consistent feature in the economic and social fabric of Western Australia. Immigration has been widely perceived as a stimulus to economic growth through the provision of an increased and expanded supply of new skilled labour, growth in consumer demand, and the increased demand for housing.

Western Australia's population, in comparison to Australia's, has increased relatively more significantly since the early 1980s. Much of the more recent Western Australian increase can be attributed to interstate as well as overseas immigration. At the June 1981 Population Census date, Western Australia's population was 1,300,056 persons.

By 6 August 1991, the 1991 Population Census date, Western Australia's population had increased by 22.1 per cent to 1,586,825. In the equivalent period, Australia's population increased from 14,923,260 to 16,850,334, an increase of 12.9 per cent. The stronger increase in the Western Australian population growth saw the State's share of Australia's population over the period grow from 8.7 per cent to 9.4 per cent.

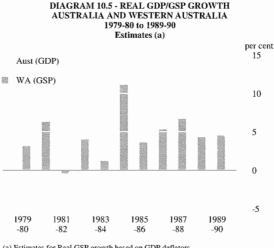
**Economic Growth** The Western Australian economy has experienced strong growth for most of the 1980s decade. The generally accepted method for measuring economic growth is the percentage change in Gross Domestic Product (GDP) for the Australian economy and Gross State Product (GSP) for the State economy. GDP (GSP) is the summary measure of the nation's (State's) economic position provided in the national accounts. It is defined as the income generated by production taking place within Australia's domestic territory. A real growth rate is derived using constant price estimates that eliminate the effects of inflationary change.

#### The Economy

In the early part of the decade, the combination of depressed economic conditions and the drought in eastern Australia led to a negative 1.7 per cent percent growth in GDP during 1982-83.

The breaking of the drought and improved world economic conditions saw a jump in GDP growth to 6.0 per cent for the following year declining to 3.6 per cent by 1989-90 with growth averaging around 4 per cent for the period of the decade.

Looking at the 1980s as a whole, GSP grew in Western Australia in real terms by 57 per cent in comparison to Australian GDP growth of 34 per cent.



<sup>(</sup>a) Estimates for Real GSP growth based on GDP deflators. Source: Catalogues No. 5220.0, 5206.0

During the early and middle part of the decade, economic growth in Western Australia ran countercyclically to the rest of Australia. This reflected, in part, the greater reliance on agricultural and mineral commodities of the Western Australian economy, and, in part, the vagaries of the Australian climate. In the period 1982-83 to 1984-85, agricultural production rose in Western Australia but fell substantially in the rest of Australia due to the drought.

In 1984-85, for example, a Western Australian GSP growth rate in real terms of 11.1 per cent was recorded largely as a result of a rise in agricultural output, increased construction activity, and considerable growth in the services sector. The breaking of the drought and increased agricultural production in the eastern States then coincided with dry conditions and a fall in agricultural production in Western Australia. In Western Australia, the income generated by the agriculture, mining, transport and construction industries, is relatively higher than is the case nationally - an analysis of the contribution to production by selected industries reveals the significance of primary production in Western Australia.

In 1991-92, mining, representing 34 per cent of the total mining output of Australia, contributed 16 per cent of total GSP, whereas for Australia, it comprised 5 per cent of total GDP. On the other hand, Western Australia has a relatively small manufacturing industry and a generally smaller services sector.

Agriculture, forestry, fishing and hunting, despite experiencing a negative real growth rate and a gradual decline in relative importance during the 1980s, still contributed 12.9 per cent of Australian output in this sector.

|                       | WA(\$m) | %GSP | Aust(\$m) | %GDP |
|-----------------------|---------|------|-----------|------|
| Mining                | 5,763   | 16   | 16,911    | 5    |
| Public admin, etc     | 5,476   | 15   | 59,214    | 17   |
| Wholesale/retail      | 4,462   | 13   | 48,690    | 15   |
| Manufacturing         | 4,015   | 11   | 50,366    | 14   |
| Finance, etc          | 3,029   | 9    | 34,636    | 10   |
| Transport, etc        | 2,934   | 8    | 28,231    | 8    |
| Construction          | 2,887   | 8    | 24,656    | 7    |
| Ownership of dwelling | s 2,261 | 6    | 33,070    | 10   |
| Agriculture, etc      | 1,419   | 4    | 10,967    | 3    |
| Recreation            | 1,354   | 4    | 15,761    | 5    |
| Electricity, etc      | 1,170   | 3    | 12,604    | 4    |
| General government    | 729     | 2    | 6,974     | 2    |
| Total                 | 35,499  | 100  | 342,080   | 100  |

Table 10.3 - GSP AND GDP, AT FACTOR COST, BY INDUSTRY, 1991-92

The 1980s were a period of volatility for Australia's Balance of Payments, particularly the Current Account. In contrast to the Australian balance of merchandise trade, Western Australia has consistently shown a trade surplus since the early 1980s.

In current dollars, net trade (foreign and interstate) turned around from a deficit of \$880.1 million in 1982 to a surplus of \$269.1 million in 1983. An annual surplus of over \$600 million was then maintained throughout the remainder of the decade with a surplus of \$2,282.4 being recorded in 1990.

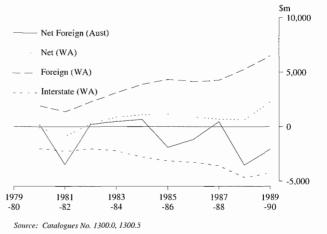
This growth was primarily due to the steady increase in overseas exports, over 50 per cent of which were contributed by the mining and manufacturing industries (notably basic metal products). In 1990-91, Western Australia led the nation in exports, contributing 23.7 per cent of the Australian total.

Trade

In the internal trade component, however, Western Australia remains disadvantaged by a relatively small manufacturing sector and continues to receive more interstate imports than it exports. The absolute size of the deficit in current dollars grew from \$1,702 million in 1980 to \$4,232 million in 1990 with the ratio of the value of imports over exports tending to remain around three to one throughout the decade. Significant components of imports in the 1980s included capital equipment and investment goods such as construction and transport equipment, mining and agricultural plant and machinery, and chemical products.

Trade with Japan continues to dominate the total Western Australian foreign trade component. The level of this trade accelerated during the decade, particularly over the latter part of the decade, with the trade surplus to Japan increasing by 104 per cent, from approximately \$1,500 million in 1988-89 to \$3,100 million in 1990-91.

#### DIAGRAM 10.6 - BALANCE OF MERCHANDISE TRADE AUSTRALIA AND WESTERN AUSTRALIA



In 1990-91, Western Australia had secured long term trade with both the Pacific Rim and ASEAN countries and had, for example, produced 43 per cent of Australian exports to China; 26 per cent to the USA; 26 per cent to Japan; and 24 per cent to Indonesia.

**Investment** Investment is a leading indicator of economic activity and both private and government capital expenditures grew consistently during the 1980s in Western Australia. The growth in investment, particularly in the second half of the decade, reflected a large relative increase in the population of the State and activity resulting from the mining and housing booms.

The combined private and government capital expenditures increased by over 100 per cent during the decade with the total showing a slight fall in 1990-91 reflecting the onset of the recession.

In 1990-91 Western Australian private new capital expenditure declined by 8.6 per cent, second only to Victoria which fell by 19 per cent, while Australian expenditure declined by 8 per cent.

The private Gross Fixed Capital Expenditure increase over the eighties was more marked than the increase in government Gross Fixed Capital Expenditure. While private expenditure increased incrementally over the decade, government expenditures actually fell in nominal terms in 1984-85 and 1986-87.

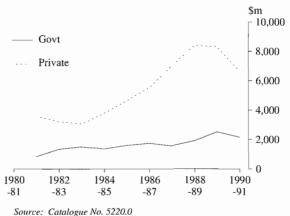


DIAGRAM 10.7 - GROSS FIXED CAPITAL EXPENDITURE

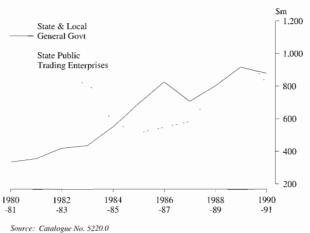
Western Australian State government organisations, comprising departments, authorities and trading and financial enterprises, experienced rapid periods of growth during the 1980s with peaks occurring in 1983-84 and 1989-90.

In 1983-84, expenditure by the State Energy Commission was the primary contributor to investment growth with significant outlays on major public works projects such as the Dampier to Perth natural gas pipeline (\$435.5 million) and the expansion of Muja power station.

Two main factors contributed to these respective movements in government and private Gross Fixed Capital Expenditure. The first is deregulation of the financial sector which facilitated and subsequently increased private sector borrowings for capital. The second is the general drive for government budget surpluses in the mid 1980s, reflected in the decreased government capital investment expenditures in the late eighties.

#### The Economy

The increase in expenditure experienced from 1987-88 to 1989-90 was attributed to a more even spread of growth in spending among the State trading enterprises, notably the State Energy Commission, the Water Authority of Western Australia, and Homeswest (State Housing Commission).



#### DIAGRAM 10.8 - GROSS FIXED CAPITAL EXPENDITURE STATE GOVERNMENT

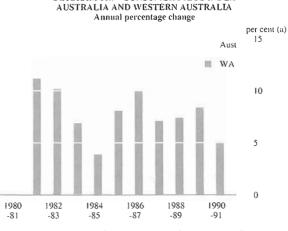
#### Inflation and Unemployment

Western Australia's inflation rate differed only marginally from Australia's during the 1980s decade. Coming into the 1990s, for example, the change in the Consumer Price Index (CPI) for Perth was 5.1 per cent in 1991 compared to 5.3 per cent for Australia as a whole (the weighted average of the eight capital cities).

This was markedly lower than the inflationary heights of the early 1980s where, in 1982, the change in CPI for Perth was 11.2 per cent and 10.4 per cent for Australia. Although there was a downward trend in Perth's inflation to 3.9 per cent in 1985, this was shortlived, with inflation returning to 9.9 per cent in 1987.

For much of the decade, high inflation was accompanied by high unemployment with national unemployment levels varying between 5.6 and 9.9 per cent. Again, the level of unemployment in Western Australia reflected the general Australian situation. In 1981 the unemployment rate for Western Australia was 6.2 per cent compared with the national rate of 5.6 per cent.

The rates moved upwards as the recession affected general economic conditions with unemployment peaking in 1983 at 9.5 per cent for Western Australia and 9.9 per cent for Australia. As conditions improved the unemployment rates fell in 1989 to decade lows of 5.4 per cent for Western Australia and 5.7 per cent for Australia.



**DIAGRAM 10.9 - CONSUMER PRICE INDEX** 

(a) Measures percentage change in index number in June of each year. Australian figure is weighted average of 8 capital cities. *Source: Catalogue No. 6401.0* 

The middle and latter parts of the decade were highlighted by a sustained period of economic growth and speculative activity, particularly in commercial property and share-trading. A tight monetary and fiscal policy mix was implemented in the late 1980s to curb spending and inflation and stem the flow of imports in order to improve the Balance of Payments deficit.



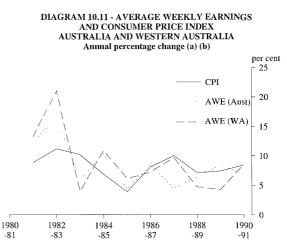
The high interest rates experienced in the period 1989 to 1991, accompanied as they were by reduced government expenditure, acted to reduce domestic consumer and investment spending but did not significantly slow the flow of imports.

From 1989 onwards, the economy slowed dramatically and Australia moved into a recessionary period ahead of many of its international trading partners. As a result of decreased economic activity and the liquidation of many debt-ridden companies, (the result of two major stockmarket falls in 1987 and 1989), inflation gradually declined but unemployment climbed in Western Australia to a post-war high of 10.8 per cent in 1991.

Average Weekly Earnings During the decade, average weekly earnings, in nominal terms, increased steadily and comparably for Western Australia and Australia. Much of the volatility evident in wage rates during the previous decade abated and it is generally agreed that the Accord as well as the recessionary conditions were contributing factors.

Western Australian average weekly earnings in June 1982 were \$271.70, slightly below the Australian average of \$274.60. By August 1990 the Western Australian average had increased to \$465.10 (an increase of 71.2 per cent) while the Australian average had increased to 474.80 (an increase of 72.9).

In this period, the Consumer Price Index for Perth increased by 81.4 per cent which suggests that real incomes for Western Australians, in this context, declined slightly during the decade.



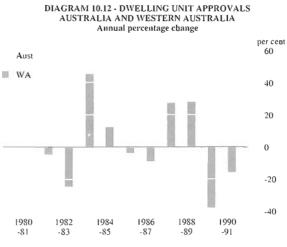
(a) Average weekly earnings (All Males category) and CPI as of September. (b) CPI for Perth. Source: Catalogues No. 6302.0, 6401.0

# **Housing** Prevailing economic conditions have a large impact on both the prices of houses and the number of new dwellings approved and built each year. The high inflation and high interest rates experienced in the 1980s impacted heavily on the housing industry with considerable volatility being shown in the housing sector.

House prices both in Western Australia and Australia underwent a major increase between 1987 and 1989. This boom was largely influenced by a general increase in speculative activity as a result of the switching of investment from plant and equipment to property assets, and an upsurge in demand caused by an increase in overseas and interstate immigration.

A lower rate of interest also contributed to the housing boom with owner-occupied housing loans being offered at 13.5 per cent in June 1988 compared to the 15.5 per cent generally available in the previous two years. Both established and project home prices rose dramatically in 1988-89, with increases of 36 and 22 per cent being registered respectively.

Dwelling unit approvals over the 1980s and 1990s followed a 3 to 4 year cycle of peak and trough. The two troughs were experienced in 1982-83 when the total number of dwelling units approved in Western Australia fell to 11,842 (116,369 for Australia) and in 1990-91 when the numbers again fell to 14,446 (126,046 for Australia). The peaks occurred in 1984-85 when the total number of dwelling units approved in Western Australia rose to 19,279 (160,459 for Australia) and in 1988-89 when the numbers rose to 27,597 (186,358 for Australia).



Source: Catalogues No. 1300.5, 8731.0

The percentage changes in dwelling unit approvals from year to year confirm the considerable degree of volatility in the residential housing industry throughout the 1980s. In 1983-84, for example, approvals in Western Australia rose by 45.2 per cent over the previous year while, in 1989-90, approvals declined by 37.8 per cent over the previous year.

**Tourism** Tourism is a major service sector of the Australian economy and it has experienced strong growth in recent years. In 1986, there were 321,100 overseas visitors to Western Australia. By 1991, this figure had increased to 452,800 an increase of 41 per cent.

For Australia as a whole, one of the most significant trends has been the increase in numbers of visitors from particular countries. For example, over the decade since 1982, there has been a 500 per cent increase in the number of visitors from Japan. The increase reflects the increasing strength of the Japanese Yen, relative to the Australian Dollar, and the growing amount of disposable income being spent on leisure activities by the Japanese. A similar trend is becoming evident in a range of other countries, particularly Asian countries such as Singapore.

Interstate travel has also been a significant contributor to tourism in Western Australia. The deregulation of the domestic air market has resulted in cheaper fares and a record number of people flying interstate, particularly during the later part of the decade. The number of internal air passenger movements through Perth Airport increased by over 50 per cent in the decade 1980 to 1990 while, for 1991-92, the number of visitors to Western Australia from interstate, travelling by air, increased by 42 per cent over the previous year.

Summary Western Australia has maintained its early strength in the mining industry and more recently has built up a stronger service sector. During the 1980s and 1990s Australia and its major trading partners experienced two major recessions. Despite the recession of the early eighties and the subsequent high inflation and unemployment rates, both Western Australia and Australia sustained strong real growth until the end of the decade. It is ironic that the recovery from the 1982-83 recession was largely influenced by a major increase in debt which, in turn, contributed to the depth of the subsequent recession in 1991-92.

While the recession of the 1990s is different in nature to the earlier recession in that it has been accompanied by very low levels of inflation, the problem of high unemployment has been a consistent feature of both recessions. Despite these problems, real growth has occurred in Gross Domestic Product and in a number of key economic sectors over the decade. In reviewing the economy's performance over the decade as a whole, tourism (overseas and interstate), population growth, housing, retail trade and mining have maintained an upward trend.

|                    | Western Australia, although affected by the depressed economic<br>conditions, has had, in comparison to Australia: higher real Gross<br>State Product growth; higher Gross State Product per capita; and,<br>more recently, a lower rate of inflation. These factors, combined<br>with continued growth in most sectors of the Western Australian<br>economy, particularly in mining, have proven Western Australia<br>to be a strong and important contributor to the Australian<br>economy. |
|--------------------|---|
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|                    | Australian National Accounts: National Income and Expenditure<br>(5206.0)   |
|                    | Australian National Accounts: State Accounts (5220.0)   |
|                    | Average Weekly Earnings (6350.0)  |
|                    | Average Weekly Earnings, States and Australia (6302.0)  |
|                    | Balance of Payments, Australia (5303.0)   |
|                    | Building Approvals, Australia (8731.0)  |
|                    | Building Approvals, Western Australia (8731.5)  |
|                    | Consumer Price Index (6401.0)   |
|                    | Interstate and Foreign Trade, Western Australia (8502.5)  |
|                    | The Labour Force, Australia (6203.0)  |
|                    | Mining, Western Australia (8404.5)  |
|                    | Overseas Arrivals and Departures, Australia (3402.0)  |
|                    | State Estimates of Private New Capital Expenditure (5646.0)   |
|                    | Tourist Accommodation, Australia (8635.0)   |
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|                    | Year Book Australia (1300.0)  |
| Other Publications | Appleyard, R.T. (ed) <i>WA into the Twenty First Century: Economic Perspectives.</i> St. George Books, Perth, 1991.   |
|                    | Firkins, Peter (ed), <i>A History of Commerce and Industry in Western Australia</i> . University of Western Australia Press, Nedlands, 1979.  |
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## AGRICULTURE

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## Chapter 11

# AGRICULTURE, FORESTRY AND FISHING

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## Chapter 11

## AGRICULTURE, FORESTRY AND FISHING

## Agriculture

Integrated Agricultural Statistics The principal source of statistics relating to the agricultural sector is the Integrated Agricultural Commodity Census, which is conducted annually by the ABS. Units (establishments) included in the census are defined and classified in accordance with the Australian Standard Industrial Classification (ASIC).

While no financial data is collected in the census, an 'estimated value of agricultural operations' (EVAO) is calculated for each establishment by applying unit values to reported production and/or stock data. This procedure enables establishments in the census to be classified according to industry (ASIC) and also according to size of operations.

Since 1976-77, small establishments have been excluded from the census, to reduce ABS processing costs and minimise respondent burden. From 1976-77 to 1980-81, an EVAO cut-off of \$1,500 was used. The cut-off was raised to \$2,500 in 1981-82; raised to \$20,000 in 1986-87 and further raised to \$22,500 in 1990-91.

The effect of the pre-1986-87 cut-offs on statistics, other than counts of establishments, is minimal. The effect of the 1990-91 cutoff is also minimal. The \$20,000 cut-off applying from 1986-87 does have a significant effect on some items, and estimates of the under coverage are available from the ABS.

Statistics on the financial performance of the agricultural sector are obtained from the Agricultural Finance Survey which has been conducted periodically by the ABS. This survey, which provides estimates of turnover, expenditure, cash operating surplus, capital expenditure and indebtedness, was recommenced on an annual basis from 1986-87. Detailed definitions and explanatory notes about the survey were published in the bulletin *Agricultural Industries, Financial Statistics, Australia 1986-87* (Catalogue No. 7507.0).

# TABLE 11.1 – NUMBER OF ESTABLISHMENTS WITH AGRICULTURAL ACTIVITYBY INDUSTRY AND ESTIMATED VALUE OF AGRICULTURAL OPERATIONS, 1991-92 (a)Reference: Catalogue No. 7102.0

| Indust | ry of establishment            | Estimated value of agricultural operations (\$'000) |          |       |          |       |         |        |
|--------|--------------------------------|---|----------|-------|----------|-------|---------|--------|
| ASIC   |                                | Less  | 20-      | 50-   | 100-     | 200-  | 500 and |        |
| code   | Description                    | than 20   | 49       | 99    | 199      | 499   | over    | Total  |
| 0124   | Poultry for meat               | _   | 1        | 4     | 5        | 33    | 6       | 49     |
| 0125   | Poultry for eggs               | 4   | 5        | 10    | 11       | 37    | 26      | 93     |
| 0134   | Grapes                         | 13  | 75       | 34    | 13       | 5     | 2       | 142    |
| 0135   | Plantation fruit               |   | 2        | 16    | 56       | 49    | 2       | 125    |
| 0136   | Orchard and other fruit        | 19  | 106      | 99    | 96       | 44    | 15      | 379    |
| 0143   | Potatoes                       | 1   | 10       | 20    | 41       | 46    | 9       | 127    |
| 0144   | Vegetables (except potatoes)   | 16  | 82       | 117   | 83       | 62    | 44      | 404    |
| 0181   | Cereal grain (incl. oil seeds) | 8   | 29       | 95    | 239      | 697   | 303     | 1,371  |
| 0182   | Sheep - cereal grains          | 8   | 134      | 561   | 1,646    | 1,957 | 390     | 4,696  |
| 0183   | Meat cattle - cereal grains    | 1   | 2        | 4     | 11       | 7     | 1       | 26     |
| 0184   | Sheep - meat cattle            | 29  | 173      | 201   | 142      | 88    | 23      | 656    |
| 0185   | Sheep                          | 132   | 446      | 610   | 765      | 453   | 49      | 2,455  |
| 0186   | Meat cattle                    | 94  | 432      | 264   | 140      | 97    | 52      | 1,079  |
| 0187   | Milk cattle                    |   | 13       | 44    | 204      | 214   | 22      | 497    |
| 0188   | Pigs                           | 5   | 18       | 25    | 43       | 55    | 22      | 168    |
| 0192   | Peanuts                        |   | <u> </u> | 1     | <u> </u> | _     | —       | 1      |
| 0195   | Nurseries                      | 9   | 25       | 56    | 47       | 40    | 32      | 209    |
| 0196   | Agriculture n.e.c.             | 18  | 88       | 61    | 37       | 23    | 5       | 232    |
| 01     | Total agriculture              | 357   | 1,641    | 2,222 | 3,579    | 3,907 | 1,003   | 12,709 |
|        | Other industries               | 12  | 43       | 26    | 22       | 20    | 3       | 125    |
| ••     | Total all industries           | 369   | 1,684    | 2,248 | 3,601    | 3,927 | 1,006   | 12,835 |

(a) Due to a variety of reasons a number of establishments neither grew crops nor grazed livestock during the year ended 31 March 1992.

#### TABLE 11.2 – NUMBER OF ESTABLISHMENTS WITH AGRICULTURAL ACTIVITY BY INDUSTRY AND AREA OF ESTABLISHMENT, 1991-92 (a) Reference: Catalogue No. 7102.0

|   |   |       |             | Area of e     | establishm          | ent (hectari      | 2S)                   |        |
|---|---|-------|-------------|---------------|---------------------|-------------------|-----------------------|--------|
| Industry of establishment<br>ASIC<br>code Description |   | 0-49  | 50-<br>499  | 500-<br>2,999 | <br>3,000-<br>9,999 | 10,000-<br>49,999 | 50,000<br>and<br>over | Total  |
| )124  | Poultry for meat  | 44    | 5           |               |                     |                   |                       | 49     |
| )125  | Poultry for eggs  | 79    | 12          | 2             | _                   |                   |                       | 93     |
| 134   | Grapes  | 105   | 35          | 2             | _                   | _                 |                       | 142    |
| 135   | Plantation fruit  | 120   | 4           | 1             | _                   |                   |                       | 125    |
| 136   | Orchard and other fruit   | 254   | $11\bar{9}$ | 6             | _                   | _                 |                       | 379    |
| 143   | Potatoes  | 25    | 89          | 13            | _                   |                   | _                     | 127    |
| 144   | Vegetables (except potatoes)                                      | 304   | 90          | 9             | 1                   | _                 | _                     | 404    |
| 181   | Vegetables (except potatoes)<br>Cereal grains (incl oilseeds nec) |       | 60          | 816           | 478                 | 17                | _                     | 1,371  |
| 182   | Sheep – cereal grains   | 1     | 205         | 3,547         | 907                 | 33                | 3                     | 4,696  |
| 183   | Meat cattle – cereal grains                                       |       | 2           | 22            | 2                   | _                 |                       | 26     |
| 184   | Sheep – meat cattle   | 9     | 302         | 285           | 31                  | 2                 | 27                    | 656    |
| 185   | Sheep   | 16    | 647         | 1,431         | 111                 | 16                | 234                   | 2,455  |
| 186   | Meat cattle   | 23    | 697         | 184           | 17                  | 4                 | 154                   | 1,079  |
| 187   | Milk cattle   | 8     | 420         | 69            | —                   |                   | —                     | 497    |
| 188   | Pigs  | 28    | 74          | 62            | 3                   | 1                 | _                     | 168    |
| 192   | Peanuts   |       | 1           | —             | —                   |                   | _                     | 1      |
| 195   | Nurseries   | 175   | 21          | 12            | —                   |                   | 1                     | 209    |
| 196   | Agriculture n.e.c.  | 89    | 119         | 20            | 2                   | 1                 | 1                     | 232    |
| 1   | Total agriculture   | 1,280 | 2,902       | 6,481         | 1,552               | 74                | 420                   | 12,709 |
|   | Other industries  | 40    | 48          | 28            | 4                   | 1                 | 5                     | 126    |
|   | Total all industries  | 1,320 | 2,950       | 6,509         | 1,556               | 75                | 425                   | 12,835 |

(a) Due to a variety of reasons a number of establishments neither grew crops nor grazed livestock during the year ended 31 March 1992.

Value Of Agricultural Commodities Produced For agricultural production, the *gross value* is based on the wholesale price realised in the market place. Where commodities are consumed at the place of production or where they become raw material for secondary industry within the State, these points of consumption are taken as the *market places*.

#### TABLE 11.3 – FINANCIAL STATISTICS, AGRICULTURAL ENTERPRISES (\$ million)

Reference: Catalogue No. 7507.0

|                                 | 1988-89 | 1989-90 | 1990-91 |
|---------------------------------|---------|---------|---------|
| Sales of crops                  | 1,140.5 | 1,167.8 | 1,096.3 |
| Sales of livestock              | 504.9   | 485.8   | 360.5   |
| Sales of livestock products     | 1,237.4 | 1,299.3 | 1,023.8 |
| Turnover                        | 3,043.9 | 3,099.4 | 2,630.5 |
| Purchases and selected expenses | 1,603.5 | 1,682.2 | 1,538.3 |
| Value added                     | 1,609.7 | 1,198.7 | 927.1   |
| Adjusted value added            | 1,442.4 | 1,016.7 | 747.6   |
| Gross operating surplus         | 1,252.0 | 804.3   | 561.1   |
| Total interest paid             | 202.4   | 278.5   | 268.9   |
| Cash operating surplus          | 959.7   | 846.8   | 519.2   |
| Total net capital expenditure   | 293.6   | 331.5   | 167.0   |
| Gross indebtedness              | 1,630.8 | 2,144.6 | 1,984.0 |
| Number of enterprises           | 11,614  | 12,003  | 11,179  |

### TABLE 11.4 – GROSS VALUES, MARKETING COSTS AND LOCAL VALUES OF AGRICULTURAL COMMODITIES

(\$ million) Reference: Catalogue No. 7503.5

|   | 1989-90  | 1990-91 | 1991-92 |
|---|----------|---------|---------|
| Crops and pastures—                             |          |         |         |
| Gross value of production                       | 1,545.0  | 1,346.4 | 1,463.0 |
| Marketing costs                                 | 225.3    | 244.2   | 196.9   |
| Local value of production                       | 1,319.7  | 1,102.2 | 1,266.1 |
| Livestock slaughterings<br>and other disposals— |          |         |         |
| Gross value of production                       | r454.1   | 388.6   | 423.9   |
| Marketing costs                                 | 47.4     | 47.3    | 45.3    |
| Local value of production                       | 406.7    | 341.4   | 378.6   |
| Livestock products—                             |          |         |         |
| Gross value of production                       | 1,370.0  | 1,001.4 | 745.5   |
| Marketing costs                                 | 42.6     | 32.7    | 33.0    |
| Local value of production                       | 1,327.4  | 968.7   | 712.5   |
| Total agriculture                               |          |         |         |
| Gross value of production                       | 3,369.1  | 2,736.4 | 2,632.4 |
| Marketing costs                                 | 315.3    | 324.2   | 275.2   |
| Local value of production                       | r3,053.8 | 2,412.2 | 2,357.2 |

The *local value* is the value at the place of production and is obtained by deducting marketing costs from the gross value. *Marketing costs* comprise freight, cost of containers, commission, and other charges incurred in marketing. Gross values provide a reliable measure of the value of production of any particular commodity or group but when comparing or combining values for agricultural industries with those for secondary industries, the value added series of financial statistics from the Agricultural Finance Survey should be used.

Wheat was the most important item in 1991-92 with a gross value of \$881.9 million, followed by wool with \$608.2 million.

Land Use On<br/>AgriculturalIn 1991-92, there were 12,906 agricultural establishments with an<br/>estimated value of agricultural operations over \$22,500. They<br/>comprised 115.7 million hectares of land, or about 46 per cent of<br/>the total area of Western Australia.

Of the total area of these establishments, 5.2 million hectares were used for crops and 8.4 million hectares were under sown pasture. The balance consisted mainly of uncleared land (most of which is pastoral leases held by sheep and cattle stations) but it also included cleared land which was used for grazing or which was resting during the season, fallowed areas and newly cleared land.

Table 11.5 gives details of rural land use according to statistical division for 1991-92. Maps showing the boundaries of the statistical divisions and their component statistical local areas are located in the Appendix.

| Statistical division |  | Land us              | se during the s<br>('000 hectares |                    | Total                                     |
|----------------------|--|----------------------|-----------------------------------|--------------------|---|
|                      | Agricultural<br>establishments<br>(number) | Used<br>for<br>crops | Under<br>Sown<br>pastures         | Lucerne<br>(all es | area of<br>stablishments<br>000 hectares) |
| Perth                | 1,020                                      | 6.5                  | 32.0                              | 0.3                | 73.1                                      |
| South-West           | 2,163                                      | 31.4                 | 526.1                             | 1.9                | 763.7                                     |
| Lower Great Southern | 2,289                                      | 542.8                | 1,798.5                           | 1.2                | 2,802.4                                   |
| Upper Great Southern | 1,919                                      | 1,009.1              | 1,839.6                           | _                  | 3,407.1                                   |
| Midlands             | 3,114                                      | 2,301.6              | 2,116.6                           | 0.6                | 7,065.3                                   |
| South-Eastern        | 757  | 363.6                | 1,073.7                           | 1.3                | 17,071.4                                  |
| Central              | 1,429                                      | 956.2                | 1,014.1                           | 2.9                | 42,814.1                                  |
| Pilbara              | 64   | _                    | <i>′</i>                          | _                  | 15,409.1                                  |
| Kimberley            | 151  | 4.6                  | 1.1                               | _                  | 26,262.8                                  |
| Total                | 12,906                                     | 5,215.8              | 8,401.8                           | 8.2                | 115,669.0                                 |

 TABLE 11.5 – LAND USE IN EACH STATISTICAL DIVISION, 1991-92

 Reference: Catalogue No. 7330.5

## Agriculture

Wheat Although wheat has been grown from the earliest years of settlement, cultivation was confined to limited areas as late as 1890 when an area of approximately 14,000 hectares was grown. Wheat plantings in 1991-92 were 3,230,000 hectares, a decrease of 11.1 per cent over the previous year. This was the fifth consecutive crop of under 4 million hectares following crops in excess of 4 million hectares for each year between 1979 and 1986. The state total harvest for 1991-92 of 4,736,000 was 13.1 per cent less than in the previous year. The latest harvest represented a state yield of 1.47 tonnes per hectare, still well above the 20 year average yield of 1.16 tonnes per hectare.

Bulk Handling of Wheat The rapid increase in the production and export of wheat between 1910 and 1920 caused problems of transport and storage, and proposals for the bulk handling of the grain led to the formation of a company for this purpose in 1920. This original undertaking did not commence operations, owing to technical difficulties and problematical savings in handling costs. Constant attempts were made during the 1920s to find cheaper methods of storage and transportation of wheat.

A series of experiments in the 1930s led to the development of an economical bulk handling system and the grower cooperative company, Co-operative Bulk Handling Limited, was set up in 1933 to operate the system.

- Wheat Marketing The Australian Wheat Board is a national and international grain marketer, financing and marketing wheat and other grains for growers. Until 30 June 1989, the Australian Wheat Board was the sole marketing authority for wheat, operating under the authority of the Wheat Marketing Act 1984. From 1 July 1989, marketing of wheat for use within Australia was deregulated, and producers are now free to make their own marketing arrangements for wheat for domestic use. The Australian Wheat Board retains sole authority for export of wheat. The main function of the Australian Wheat Board has always been marketing wheat but, since 1989, they have become actively involved in marketing other grains, mostly in Australia. As part of the rapidly expanding food industry, the Australian Wheat Board aims to maximise real returns to growers. This is being achieved in many ways, not only through the marketing of wheat and other grains, but also through closer structural links with service providers and end-users.
- Wheat Export Most of the State's wheat is exported as grain. Overseas export of wheat has fluctuated in the last three financial years. In 1989-90 overseas exports were 4,252,000 tonnes; in 1990-91 the figure was 5,013,000 tonnes and in 1991-92 overseas exports have declined to 4,480,000 tonnes. Flour exports, which had been as high as 160,000 tonnes in the mid 1950s, now account for a minimal proportion of the State's wheat crop.

Oats

Although oats have been grown in Western Australia since the early development of wheat farming, cultivation was somewhat limited until stimulated by the introduction of large-scale sheep raising in the agricultural areas, when their high nutritional worth as stockfeed made them a very valuable crop.

Plantings of oats for grain in 1991-92 covered 367,000 hectares, an increase of 13.6 per cent on the previous year. State production was up 23.8 per cent to 614,000 tonnes. The total harvest was the second highest on record and the state average yield of 1.67 tonnes per hectare was the highest on record since 1.59 tonnes per hectare was achieved in 1988-89.

Barley

Barley grows well over a wide range of climatic and soil conditions and generally yields better than other cereals. It is more successful on saline soils where other crops may not do well, and as a first crop on newly developed land. Part of the crop is retained on farms for stockfeed, while the balance is sold locally and overseas for malting or stockfeed manufacture.

#### TABLE 11.6 – CEREAL CROPS FOR GRAIN AREA AND PRODUCTION Reference: Catalogue No. 7330.5, 7503.5

|             | Unit    | 1989-90 | 1990-91        | 1991-92          |
|-------------|---------|---------|----------------|------------------|
| Wheat       |         |         |                |                  |
| Area        | '000 ha | 3,476   | 3 <i>,</i> 632 | 3,230            |
| Production— |         |         |                |                  |
| Total       | '000 t  | 4,800   | 5,448          | 4,736            |
| Per hectare | tonnes  | 1.38    | 1.50           | 1.47             |
| Gross value | \$'000  | 951,537 | 744,797        | 950 <i>,</i> 333 |
| Oats        |         |         |                |                  |
| Area        | '000 ha | 340     | 323            | 367              |
| Production— |         |         |                |                  |
| Total       | '000 t  | 529     | 494            | 614              |
| Per hectare | tonnes  | 1.56    | 1.54           | 1.67             |
| Gross value | \$'000  | 50,714  | 41,888         | 60,864           |
| Barley      |         |         |                |                  |
| Area        | '000 ha | 421     | 498            | 554              |
| Production- |         |         |                |                  |
| Total       | '000 t  | 628     | 742            | 900              |
| Per hectare | tonnes  | 1.49    | 1.49           | 1.62             |
| Gross value | \$'000  | 108,740 | 104,571        | 133,146          |
| Lupins      |         |         |                |                  |
| Area        | '000 ha | 676     | 664            | 787              |
| Production— |         |         |                |                  |
| Total       | ′000 t  | 619     | 624            | 874              |
| Per hectare | tonnes  | 0.92    | 0.93           | 1.11             |
| Gross value | \$'000  | 104,031 | 99,639         | 148,166          |

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In 1991-92 barley plantings increased by 11.5 per cent over the previous year to reach 554,000 hectares. This was the third largest area planted since the 965,000 hectare crop of 1984-85. Production increased 21.2 per cent to 900,000 tonnes representing a state average yield of 1.62 tonnes per hectare, greater than the previous record of 1.49 in 1989-90.

Lupins The large-scale growing of lupins has been undertaken in Western Australia since the early 1970s. Apart from the drought affected 1985-86 season, area sown has increased significantly each year from 1980-81 to 1987-88. In 1988-89, total lupin plantings fell as sheep numbers remained high. In 1991-92, lupin plantings increased to 787,000 hectares, an 18.4 per cent increase on the previous year. This was the second highest area on record.

Other Grains and Oilseeds There was considerable interest in the production of rapeseed (canola) in the early 1970s, and plantings reached 42,000 hectares in 1972-73. Subsequent problems with disease saw plantings reach a low of 200 hectares in 1982-83. Since then, area sown has expanded and reached 4,800 hectares in 1986-87. Plantings fell back to 576 hectares in 1989-90 and rose to 16,702 hectares in 1991-92.

Triticale, a wheat/rye cross, was first recorded in the Agricultural Census in 1978-79, and since then plantings increased each year to 1984-85 when 39,000 hectares were sown. Area planted in the 1991-92 season was 18,102 hectares.

Field peas is another crop with significant increases in planting over the past decade. Total recorded plantings reached 1,000 hectares in the 1982-83 season, 4,100 hectares in 1985-86, and had expanded to 47,100 hectares by 1988-89. In 1991-92, plantings rose to 45,093 hectares. Grain sorghum, linseed, rye, vetches, safflower and sunflower are also grown in small quantities.

Large quantities of pasture hay are cut from clover and grass pastures, production in 1991-92 being 423,000 tonnes from 116,000 hectares. The principal cereal hay crop is oats and 416,200 tonnes of oaten hay were cut in 1991-92 from 105,700 hectares.

Hay

|                                    | Unit              | 1989-90            | r1990-91   | 1991-92    |
|------------------------------------|-------------------|--------------------|------------|------------|
| Pasture (a)—<br>Area<br>Production | ′000 ha<br>′000 t | 10 <b>7</b><br>380 | 108<br>390 | 116<br>423 |
| Crop (b)—<br>Area<br>Production    | ′000 ha<br>′000 t | 122<br>430         | 111<br>382 | 123<br>478 |

 
 TABLE 11.7 – HAY: AREA AND PRODUCTION Reference: Catalogue No. 7330.5

. (a) Includes lucerne. (b) Principally from oats and wheat.

Pastures Of the 8.4 million hectares of improved pastures in the south-west region, the majority are sown to the legume subterranean clover. Other species used include medic, rose clover, serradella, lucerne and a variety of grasses, principally Wimmera ryegrass.

The use of perennial grasses such as perennial ryegrass, kikuyu, phalaris and cocksfoot is restricted to a small area having a long growing season along the south coast.

Dominant legume pastures are initially easily established, following the clearing of the native vegetation. As most of the soils are infertile, a range of fertilisers must be used. Phosphorus, as superphosphate, is usually applied annually while minor elements such as copper, zinc and sometimes molybdenum, have to be applied at least once.

Over time, other elements may also need to be applied for good pasture growth to be maintained. Potassium in particular can become deficient in the sandy soils of high rainfall areas.

While pastures are green for only four to nine months of the year, sufficient feed is produced for sheep and cattle to be maintained on the paddocks all year. Supplementary feeding of breeding stock is sometimes required, particularly if the autumn break to the season comes late. At such times, the dry paddock feed is almost exhausted and the regenerating pasture is growing slowly.

An active legume breeding and selection program, centred at Perth, has produced many cultivars. From the cultivars now available, it is possible to select one or more that are suited to environments ranging in annual rainfall from 350 to 1,200 millimetres and in soil type from acid to alkaline. Cultivars have been selected that are persistent, tolerant of a range of diseases and insect pests, and that are low in fertility-reducing oestrogenic compounds.

|                | Unit    | r1989-90 | r1990-91 | 1991-92 |
|----------------|---------|----------|----------|---------|
| Area harvested | ′000 ha | 21.4     | 15.7     | 10.3    |
| Production     | tonnes  | 3,807    | 2,704    | 1,828   |

TABLE 11.8 – PASTURE SEED HARVESTEDReference: Catalogue No. 7330.5

Vegetables

The State's vegetable production is aimed principally at providing for the local fresh market. Market gardens for fresh produce are concentrated in the outer suburbs of the Perth Statistical Division, although some of these areas are now becoming urbanised. Growing of vegetables for processing was restricted to peas and beans for a long time. More recently, there has been a significant increase in both the volume and variety of vegetables grown for processing, with potatoes forming a major proportion of this market. Exports of vegetables have also assumed greater importance in recent years, with some growing operations being set up either wholly or principally for supplying the export market.

Potatoes are the major and most valuable vegetable crop, accounting for over a quarter of the State's vegetable area. Production is concentrated in the higher rainfall areas of the south-west, principal growing centres being Manjimup, Busselton, Donnybrook and Albany. Compared with the total State crop, the Perth Statistical Division is relatively unimportant as a potato producer.

Apart from potatoes, a wide variety of other vegetables are grown in the State. Among these, carrots rank as the second most valuable crop, with cauliflowers the third most valuable. Over half the State's carrot production is grown in the Perth Statistical Division, while the main cauliflower growing area is the Manjimup district in the far south-west of the State.

# TABLE 11.9 - PRINCIPAL VEGETABLESAREA, PRODUCTION AND GROSS VALUEReference: Catalogue No. 7330.5, 7503.5

|                 | Unit     | 1989-90 | r1990-91 | 1991-92         |
|-----------------|----------|---------|----------|-----------------|
| Carrots—        |          |         |          |                 |
| Area            | hectares | 790     | 682      | 706             |
| Production      | tonnes   | 30,942  | 29,841   | 31,040          |
| Gross value     | \$'000   | 12,814  | 12,883   | 15,144          |
| Cauliflowers—   |          |         |          |                 |
| Area            | hectares | 724     | 801      | 773             |
| Production      | tonnes   | 17,438  | 17,152   | 15,204          |
| Gross value     | \$'000   | 13,530  | 10,682   | 14,354          |
| Lettuce—        |          |         |          |                 |
| Area            | hectares | 403     | 417      | 389             |
| Production      | tonnes   | 13,898  | 14,354   | 17 <i>,</i> 971 |
| Gross value     | \$'000   | 5,463   | 6,227    | 8,346           |
| Onions—         |          |         |          |                 |
| Area            | hectares | 471     | 490      | 436             |
| Production      | tonnes   | 25,399  | 27,524   | 22,299          |
| Gross value     | \$'000   | 7,594   | 8,668    | 6,655           |
| Potatoes—       |          |         |          |                 |
| Area            | hectares | 2,497   | 2,877    | 2,614           |
| Production      | tonnes   | 98,705  | 110,095  | 97,817          |
| Gross value     | \$'000   | 31,865  | 37,514 . | 33,170          |
| Tomatoes—       |          |         |          |                 |
| Area            | hectares | 250     | 236      | 219             |
| Production      | tonnes   | 7,070   | 8,178    | 7,587           |
| Gross value     | \$'000   | 7,448   | 7,429    | 8,426           |
| All vegetables— |          |         |          |                 |
| Area            | hectares | 9,127   | 10,049   | 9,248           |
| Gross value     | \$'000   | 109,706 | 126,276  | 131,137         |

A significant proportion of the State's tomato production is grown at Carnarvon, on the State's upper west coast. Because of the warmer winter climate, Carnarvon growers are able to produce 'out of season' crops of tomatoes and other vegetables for the Perth market. Similar factors are assisting the development of vegetable production at Kununurra in the far north of the State, where significant quantities of melons and pumpkins are being grown.

In 1991-92 total vegetable plantings decreased by 8.0 per cent over the previous year to reach 9,248 hectares. This reversed the trend of successive increases in area planted since 1985-86. Potato plantings accounted for 28.2 per cent of the vegetable area, covering 2,614 hectares — a decrease of 9.2 per cent over the previous year. Carrot production increased 4 per cent on the previous year to 31,040 tonnes. Cauliflower production decreased from 17,152 tonnes in 1990-91 to 15,204 tonnes in 1991-92.

Fruit production is largely confined to the temperate regions between Gingin to the north of Perth and Albany on the south coast. The cool, wet winters and warm, dry summers of this area permit the successful cultivation of a wide variety of fruits. In the southern and south-western sections, apples, pears and stone fruits are grown extensively, and grapes are of increasing importance, while in the districts around Perth the principal crops are apples, stone fruits, citrus fruits and grapes. Outside this main fruit-growing area, banana plantations have been established at Carnarvon in the north-west and at Kununurra in the north.

|                      | Unit           | 1989-90 | r1990-91 | 1991-92 |
|----------------------|----------------|---------|----------|---------|
| Area—                |                |         |          |         |
| Orchard fruit        | ha             | 5,150   | 4,801    | 5,110   |
| Plantation and       |                |         |          |         |
| berry fruit          |                | 529     | 536      | 515     |
| Grapes               | 11             | 2,039   | 1,947    | 2,199   |
| Total                | 11             | 7,718   | 7,025    | 7,824   |
| Gross value of produ | ction—         |         |          |         |
| Orchard fruit        | <b>\$'</b> 000 | 34,603  | 34,427   | 44,984  |
| Plantation and       |                |         | ,        |         |
| berry fruit          |                | 17,113  | 25,060   | 34,731  |
| Grapes               | ,,             | 10,926  | 10,960   | 11,919  |
| Total                | *1             | 62,643  | 70,287   | 91,634  |

#### TABLE 11.10 – FRUIT: AREA AND GROSS VALUE OF PRODUCTION Reference: Catalogue No. 7322.5

Fruit

Apples and pears

Apples, which are the principal fruit crop, account for more than half of the total orchard area. Donnybrook, Manjimup and the hills area near Perth are the most important centres but other districts in the south-west still produce significant quantities. In 1991-92, the number of apple trees recorded in the Census was 778,122. Granny Smiths accounted for 63 per cent of the 37,418 tonnes produced. Pears are usually grown in conjunction with apples, and although apples are still considerably more important, pear tree numbers have increased by over 50 per cent in the last ten years. Exports of both apples and pears are significant, mainly to South East Asian countries.

| TABLE 11.11 – ORCHARD FRUIT: TREES, PRODUCTION AND |
|--|
| GROSS VALUE  |
| References Catalague Nag. 7222 F. 7502 F.          |

|                   | Unit         | 1989-90 | 1990-91 | 1991-92 |
|-------------------|--------------|---------|---------|---------|
| Apples—           |              |         |         |         |
| Ťrees             | <i>'</i> 000 | 687     | 726     | 778     |
| Production        | tonnes       | 44,835  | 36,156  | 37,418  |
| Gross value       | \$′000       | 18,671  | 16,104  | 19,497  |
| Pears—            |              |         |         |         |
| Trees             | <i>'</i> 000 | 169     | 180     | 175     |
| Production        | tonnes       | 7,192   | 7,254   | 8,399   |
| Gross value       | \$'000       | 3,015   | 3,679   | 4,886   |
| Lemons and limes— |              |         |         |         |
| Trees             | <i>'</i> 000 | 18      | 18      | 18      |
| Production        | tonnes       | 1,105   | 1,106   | 1,125   |
| Gross value       | \$'000       | 701     | 931     | 738     |
| Mandarins—        |              |         |         |         |
| Trees             | 2000         | 48      | 52      | 55      |
| Production        | tonnes       | 1,004   | 1,158   | 1,315   |
| Gross value       | \$'000       | r907    | 993     | 1,830   |
| Oranges—          |              |         |         |         |
| Trees             | <i>'</i> 000 | 187     | 173     | 183     |
| Production        | tonnes       | 4,503   | 5,128   | 5,304   |
| Gross value       | \$'000       | 1,616   | 1,592   | 1,830   |
| Nectarines—       |              |         |         |         |
| Trees             | <i>'</i> 000 | 116     | 114     | 147     |
| Production        | tonnes       | 1,425   | 1,732   | 2,333   |
| Gross value       | \$'000       | r1,554  | 1,836   | 2,333   |
| Peaches—          |              |         |         |         |
| Trees             | <i>'</i> 000 | 114     | 117     | 126     |
| Production        | tonnes       | 2,157   | 2,355   | 2,507   |
| Gross value       | \$′000       | r2,200  | 2,920   | 4,070   |
| Plums and prunes- |              |         |         |         |
| Trees             | <i>'</i> 000 | 146     | 193     | 190     |
| Production        | tonnes       | 2,712   | 3,051   | 3,494   |
| Gross value       | \$'000       | 3,276   | 3,450   | 4,392   |

References: Catalogue Nos. 7322.5, 7503.5

*Citrus fruit* The Shire of Chittering, north of Perth, is a major citrus fruit producer, while other important areas are the Shires of Kalamunda and Swan and the City of Armadale, all near Perth, and the Shires of Harvey and Capel in the south-west.

Although oranges are by far the most important crop, substantial quantities of lemons and mandarins, and lesser quantities of grapefruit are also produced. Production is largely for local consumption but there is some export trade, especially in lemons.

Orange production in 1991-92 increased by 3.4 per cent to 5,304 tonnes, reversing the general downward trend in production evident since the late 1960s. Production of lemons continued to increase with a 1.7 per cent increase to 1,125 tonnes. The large number of mandarin trees reaching maturity was reflected in a healthy increase in production with 1,315 tonnes produced. Grapefruit production was also up from 623 tonnes to a new record of 763 tonnes in 1991-92.

Stone fruits Stone fruits are grown mainly in the hills districts in the Darling Ranges near Perth, and in the Shires of Manjimup and Donnybrook-Balingup in the south-west of the State; however some stone fruits are grown in many other districts of the south-west.

Total volume of stone fruit production continued to rise in 1991-92 with all types of stone fruit recording increase. The production of avocados rose 39.5 per cent, mainly due to extensive plantings in recent years now coming into bearing. The general trend of steadily increasing nectarine production over recent years also continued in 1991-92 with a 34.7 per cent rise in production to 2,333 tonnes. The increase in plum and prune production in 1990-91 continued in 1991-92 with a 14.5 per cent increase to 3,494 tonnes. Apricot and peach production also increased during 1991-92. Mango production rose 105 per cent, mainly due to a 26.2 per cent increase in tree numbers.

Vineyards Historically, the 'Swan Valley' region in the Shire of Swan has dominated the State's viticulture industry. In the early 1970s, this region accounted for some 70 per cent of the State's vineyard area. Since then, pressures of urban growth in the Swan Valley have reduced the area under vines there, and new vineyards have been developed elsewhere in the State; principally at Margaret River/Busselton, Mount Barker/Frankland and Bindoon/Gingin. As a result, the Swan Valley now accounts for just over 30 per cent of the State's vineyard area. The Margaret River/Busselton, and Mount Barker/Frankland grape production is almost entirely used for winemaking; in other areas table and drying grapes are also significant. In 1991-92 the total area of plantings for grapes were 2,199 hectares, an increase of 12.9 per cent on the previous year's, plantings of 1,948 hectares. The area of red grapes planted was 1,082 hectares producing 5,612 tonnes. White grapes produced 6,954 tonnes from 1,117 hectares.

|                                       | Unit   | 1989-90 | r1990-91 | 1991-92 |
|---------------------------------------|--------|---------|----------|---------|
| Area of vines—                        |        |         |          |         |
| Bearing                               | ha     | 1,701   | 1,688    | 1,919   |
| Not yet bearing                       |        | 338     | 260      | 280     |
| Grapes for wine mak<br>and table use— | ing    |         |          |         |
| Quantity                              | tonnes | 10,769  | 9,734    | 9,763   |
| Gross value                           | \$′000 | 10,303  | 10,025   | 11,196  |
| Dried vine fruits—                    |        |         |          |         |
| Quantity                              | tonnes | 359     | 374      | 286     |
| Gross value                           | \$'000 | 624     | 934      | 722     |

#### TABLE 11.12 – GRAPES: AREA AND PRODUCTION Reference: Catalogue No. 7322.5

Other fruit

Production of bananas is mainly confined to a narrow strip of land along the Gascoyne River at Carnarvon, with small, but increasing areas at Kununurra on the Ord River. The Carnarvon plantations are dependent on water pumped from bores which tap a subterranean flow in the sands of the usually dry river bed. As a surface flow in the river channel results only from heavy rains, which do not occur every year, a problem is presented in the falling-off of water supplies and in the increase in the salt content of the underground water during long dry periods. These conditions and also periodic damage from cyclones, cause fluctuations in the area cropped and in production, as occurred in the 1988-89 season.

Apart from such weather-caused interruptions, production has consistently increased over the last twenty years. The crop is transported by road to Perth and sold locally in competition with bananas imported from other Australian States. Banana production continued to increase during 1991-92, with a 29.8 per cent rise in production to 16,236 tonnes.

Strawberry production continued its recovery after the big fall in 1987-88, showing a large increase over the previous year to 2,257.1 tonnes. The previous record was set in 1986-87 with 1,247.8 tonnes. Nearly 90 per cent of the area planted is within the Perth Statistical Division.

Nurseries The main concentration of commercial nurseries lies within the Perth Statistical Division in the areas of Wanneroo, Armadale and Cockburn.

Most nurseries produce ornamental shrubs and trees; some specialise in the production of bedding plants while others concentrate on cut-flower production. Fruit trees, mainly citrus, are produced by specialist nurseries in the Perth Statistical Division while pome and stone fruit trees are mostly produced in the South-West Statistical Division at Manjimup and Donnybrook.

The cultivation of native plants, generally on a less extensive scale than is the case with exotic plants, is also now of increasing importance.

The gross value of nurseries and cultivated turf decreased 15 per cent to \$45 million in 1991-92, this was associated with a 12 per cent decrease in area to 1,541 hectares.

TABLE 11.13 – NURSERIES (a)AREA AND GROSS VALUEReference: Catalogue Nos. 7330.5, 7503.5

|             | Unit     | 1989-90 | r1990-91 | 1991-92 |
|-------------|----------|---------|----------|---------|
| Area        | hectares | 1,871   | 1,724    | 1,541   |
| Gross value | \$'000   | 46,969  | 53,220   | 45,001  |

(a) Including cultivated turf.

Artificial fertiliser

Soils in Western Australia are acutely deficient in phosphate and regular applications of phosphatic fertiliser are required for crop and pasture growth. Newly cleared land in particular requires heavy applications of superphosphate for satisfactory yields. Nitrogen deficiencies are also common. Legume pastures and lupins have assisted greatly in increasing nitrogen supplies. Potassium deficiency is primarily a problem on sandy soils in high rainfall areas.

TABLE 11.14 – ARTIFICIAL FERTILISER USED ON RURAL HOLDINGS

|   |                           | 0               |                |              |
|---|---------------------------|-----------------|----------------|--------------|
|   | Unit                      | 1989-90         | r1990-91       | 1991-92      |
| Artificial fertiliser u<br>Area fertilised<br>Quantity used | sed—<br>′000 ha<br>′000 t | 10,426<br>1,274 | 9,129<br>1,010 | 7,284<br>767 |
| Soil conditioners—<br>Area treated<br>Quantity used         | '000 ha<br>'000 t         | (a)<br>(a)      | 161<br>199     | 262<br>(a)   |

Reference: Catalogue No. 7330.5

(a) Not collected

Many Western Australian soils and particularly sandy soils, are also deficient in trace elements. The use of fertilisers is therefore a significant factor in the State's farming activity. Fertiliser usage dropped from 1,010 tonnes in 1990-91 to 767 tonnes during 1991-92. The area treated by soil conditioners increased by 63 per cent to 262,000 hectares.

**Production Regions** Throughout this section, where mention is made of the 'pastoral areas', the portion of the State referred to comprises the Kimberley and Pilbara Statistical Divisions and the Sub-divisions of Lefroy, Gascoyne and Carnegie. The balance of the State, referred to as the 'agricultural areas', comprises the Perth, South-West, Upper Great Southern, Lower Great Southern and Midlands Statistical Divisions and the Sub-divisions of Johnston and Greenough River.

## TABLE 11.15 – LIVESTOCK NUMBERS AT 31 MARCH ('000)

| Referer                    | nce : Catalogue No | . 7221.5 |          |
|----------------------------|--------------------|----------|----------|
|                            | 1990               | 1991     | 1992     |
| Meat cattle<br>Milk cattle | 1,561.9            | 1,457.3  | 1,536.3  |
| (excludes house cows)      | 110.2              | 108.7    | 112.8    |
| Sheep                      | 38,422.1           | 36,390.0 | 34,060.5 |
| Pigs                       | 272.5              | 270.4    | 317.8    |
| Poultry                    | 5,422.5            | 5,365.6  | 5,140.7  |

#### Livestock

Sheep

From the end of the Second World War, the State's sheep numbers increased almost continuously until the mid 1970s, to peak at 34.8 million in 1976. Since then, numbers have fluctuated, reflecting variations in seasonal conditions and in the prices for wool and meat relative to grain prices. Since 1984, sheep numbers have risen significantly, owing to a strong wool market and relatively low wheat prices. The previous peak sheep population of 1976 was exceeded for the first time in 1989 and subsequently in 1990 when the flock numbered 38.4 million. However, with the collapse of prices for medium to coarse grade wool and removal of the floor prices in February 1991, sheep numbers have been on the decline. The national flock reduction scheme also contributed to this decrease. Sheep numbers continued to decrease during 1991-92 by 6.4 per cent to a total of 34.1 million at the end of March 1992. This followed a 5.1 per cent decrease in the previous year.

In the agricultural areas, sheep farming is usually carried out in conjunction with grain growing, while in the pastoral areas, sheep are generally grazed on large specialist 'sheep stations'. As a result, large flocks predominate in the pastoral areas. In 1992, the average flock size in agricultural areas was 3,388; in pastoral areas 8,832.

|        | In agricultural<br>areas |                                      | ,            | vastoral<br>reas                     |                |  |
|--------|--------------------------|--------------------------------------|--------------|--------------------------------------|----------------|--|
| Year   | Number                   | Propor-<br>tion of<br>State<br>total | Number       | Propor-<br>tion of<br>State<br>total | State<br>total |  |
|        | <b>′</b> 000             | per cent                             | <i>'</i> 000 | per cent                             | <b>′</b> 000   |  |
| 1960   | 13,396                   | 81.6                                 | 3,016        | 18.4                                 | 16,412         |  |
| 1970   | 29,844                   | 88.7                                 | 3,790        | 11.3                                 | 33,634         |  |
| 1980   | 28,730                   | 94.4                                 | 1,701        | 5.6                                  | 30,431         |  |
| 1990   | 35,924                   | 93.5                                 | 2,498        | 6.5                                  | 38,422         |  |
| 1991 r | 33,934                   | 93.2                                 | 2,456        | 6.7                                  | 36,390         |  |
| 1992   | 31,782                   | 93.3                                 | 2,279        | 6.7                                  | 34,060         |  |

#### TABLE 11.16 – SHEEP NUMBERS AND DISTRIBUTION AT 31 MARCH Reference: Catalogue No. 7221.5

Marketing of lamb All lamb produced for slaughter south of the twenty-sixth parallel in Western Australia is marketed through the Western Australian Lamb Marketing Board. The Board was established by the Marketing of Lamb Act 1971 for both the domestic and international market and began operations in December 1972 as a result of pressure from, and following a referendum of, the State's lamb producers, who looked to the Board to improve the stability of their industry and increase returns.

> The major aims of the Board are to administer an orderly method of marketing and encourage producer participation in lamb marketing, to operate an advance price schedule and a weight and grade system, and to rationalise procedures throughout the industry. Slaughterings to June 1992 decreased 28 per cent over the previous year. The number of sheep slaughtered declined to 3,016,700 and lambs declined to 1,238,300.

Wool In 1991-92, Australian woolgrowers faced an uncertain market following the removal of the Reserve Price Scheme. The estimated 1991-92 wool clip of 185,920 tonnes represents a 16.3 per cent decrease from the previous year. The 1990-91 clip of 222,252 tonnes is still the second highest on record. Numbers of sheep and lambs shorn also decreased to 39,107,000, 9.4 per cent less than in 1990-91. The latest average wool clip was 6.2 per cent lower than the previous season, having decreased to 4.6 kilograms per animal shorn.

> A major development in the administration of the wool industry was the passing of the *Wool Industry Act 1972*, which brought into existence the Australian Wool Corporation on 1 January 1973. In the aftermath of dramatic reversals in the wool market since 1989 and the consequent collapse of the wool industry's Reserve Price Scheme that had been the centrepiece of wool marketing since

1970. To replace the old Australian Wool Corporation the Government installed three new bodies, each with particular functions to accommodate the needs of an industry encountering a "free" market for wool after two decades of price protection. These bodies are the new Australian Wool Corporation responsible for Australian and international wool promotion, marketing improvement and quality assurance; the Wool Research and Development Corporation responsible for selection, monitoring and evaluation of wool research and development; and the Australian Wool Realisation Commission responsible for the disposal of the wool stockpile and discharge of the associated debts.

|  | Unit      | 1989-90          | 1990-91                | 1991-92                |
|--|-----------|------------------|------------------------|------------------------|
| Sheep shorn<br>Lambs shorn                               | ′000<br>" | 36,471           | 35,530                 | 33,459                 |
| Total  | "         | 10,111<br>46,583 | 7,636<br><b>43,165</b> | 5,648<br><b>39,107</b> |
|  |           | 40,505           | 43,105                 | 39,107                 |
| Average weight<br>of wool shorn                          | kg        | 4.97             | 4.97                   | 4.65                   |
| Wool production (greasy)<br>Shorn<br>Dead, fellmongered, |           | 232              | 215                    | 182                    |
| exported on skins  | ,,        | 4                | 8                      | 4                      |
| Total  |           | 236              | 222                    | 186                    |
| Gross value  |           |                  |                        |                        |
| Shorn wool<br>Dead wool and                              | \$′000    | 1,244,908        | 865,302                | 602,582                |
| fellmongered wool  |           | 817              | 351                    | (a)                    |
| Wool exported on skins                                   | ,,        | 7,912            | 8,707                  | 5,656                  |
| Total  | "         | 1,253,637        | 874,360                | 608,237                |

 TABLE 11.17 - SHEEP SHORN AND WOOL PRODUCTION Reference: Catalogue No. 7221.5

Cattle

Cattle statistics are classified according to the two broad categories of 'meat production' and 'milk production', regardless of breed. At 31 March 1992, meat cattle comprised over 93 per cent of the State's cattle herd. Just under 50 per cent of the State's meat cattle are located in the pastoral areas of the State, where extensive grazing on very large cattle stations is carried out.

In 1992, the average meat cattle herd size in the pastoral areas, was 3,088 compared to 200 in the agricultural areas. Meat cattle numbers rose during 1991-92. The March meat cattle count of 1,536,000 was 5.4 per cent more than in March 1991. After reaching a peak of 2,500,000 head in 1976, meat cattle numbers declined by 35 per cent over the ensuing nine years but since 1985 have been fairly stable at about 1,500,000.

Slaughtering Beef from cattle slaughtered at Broome, in the Kimberley Statistical Division, is principally for export. The local market for meat is supplied mainly from abattoirs at Fremantle, Waroona, Harvey, Bunbury, Albany, Woorooloo, Geraldton and Katanning. Most of these establishments also slaughter for the export trade. Small establishments operating in country towns also contribute to total production, and most stations and many farms slaughter sufficient for all or part of their own requirements. Over half of all exports are destined for the United States of America.

While the agricultural areas account for 50 per cent of the State's cattle numbers, higher productivity and turnoff than in the pastoral areas enables the agricultural areas to account for about 75 per cent of the State's beef production. Slaughterings in the year to June 1992 continued to decline dropping by 3.8 per cent. This followed an 11.3 per cent decrease the previous year.

#### TABLE 11.18 – LIVESTOCK SLAUGHTERED AND MEAT PRODUCED Reference: Catalogue Nos. 7221.5, 7503.5

|                       | Unit         | 1989-90 | 1990-91 | 1991-92 |
|-----------------------|--------------|---------|---------|---------|
| Livestock slaughtered | (a)—         |         |         |         |
| Sheep                 | <i>'000</i>  | 3,815   | 4,188   | 3,017   |
| Gross value (b)       | \$'000       | 19,607  | 19,682  | 24,617  |
| Lambs                 | <i>'</i> 000 | 1,470   | 1,582   | 1,238   |
| Gross value (b)       | \$'000       | 31,918  | 27,822  | 28,909  |
| Cattle and calves     | <i>'</i> 000 | 506     | 449     | 431     |
| Gross value (b)       | \$'000       | 216,813 | 171,016 | 156,522 |
| Pigs                  | <i>'</i> 000 | 461     | 466     | 526     |
| Gross value (b)       | \$'000       | 63,293  | 58,870  | 61,923  |
| Meat produced (c)—    |              |         |         |         |
| Mutton and lamb       | tonnes       | 95,651  | 107,880 | 79,970  |
| Beef and veal         |              | 106,542 | 95,637  | 91,804  |
| Pigmeat produced (    | c)(d) "      | 26,883  | 26,993  | 30,967  |
| Bacon and ham pro     |              | 9,937   | 10,674  | 9,974   |

(a) Mainly slaughterings for human consumption but also includes quantities condemned and small numbers of livestock slaughtered for boiling down. (b) Value on hoof at principal market. (c) Dressed carcass weight; excludes condemned carcasses and offal. (d) Includes quantities used to produce ham.

Dairying

Compared with the wheat, wool and meat producing industries, dairying as a major well-organised rural activity is of fairly recent origin. Its growth was retarded initially by the difficulty of clearing heavily-timbered country in the south-west and the need for special methods of pasture establishment. As these problems were progressively overcome, dairying became a significant feature of primary production. After a period of intense rationalisation in the 1970s, the industry has been concentrating on the production of milk for the local liquid milk and fresh dairy products markets.

|             | Unit      | 1989-90 | r1990-91 | 1991-92 |
|-------------|-----------|---------|----------|---------|
| Quantity    | million L | 267     | 283      | 302     |
| Gross value | \$'000    | 80,321  | 93,876   | 104,067 |

## TABLE 11.19 – WHOLE MILK PRODUCTION (a) Reference: Catalogue No. 7221.5

(a) Includes milk used for processing.

The bulk of the State's dairy cattle are concentrated in the high rainfall, near-coastal strip from Pinjarra to Augusta, with lesser numbers being found further east to Albany. Irrigation of pastures during the drier summer months plays an important role in the industry.

The milk cattle herd at March 1992 numbered 112,800, a 3.8 per cent increase over the previous year. Milk production for 1991-92 rose 7 per cent on the previous year. This is the third year milk production has increased resulting in a 23 per cent rise in production since 1989. With a small increase in cattle numbers this larger increase in milk production indicated a continuation in the trend of much higher output per cow which has been evident in recent years.

Pig raisingThe principal pig raising districts are the grain growing areas of<br/>the Midlands and the Upper and Lower Great Southern Statistical<br/>Divisions. At 31 March 1992, 67 per cent of pigs were within these<br/>divisions. Although the greater proportion of production is<br/>consumed locally, there is some export trade.

Intensive piggeries have assumed greater importance in recent years, and there has been a reduction in the number of pigs being raised in small or 'mixed farm' operations. The State's pig population in March 1992 stood at 317,800, up 17.5 per cent on the previous year. The current population is the largest since 1974. Slaughterings rose 12.9 per cent in the year to June 1992 but the gross value of these slaughterings rose only 5.9 per cent, reflecting the lower market prices. The number of pig herds rose slightly to 969, an increase of 7.0 per cent on the 906 of the previous year.

*Poultry farming* Poultry farming in Western Australia is a specialised industry located almost entirely within the Perth Statistical Division. A few commercial egg farms are established in the more populous of the country areas.

Almost all the egg production and a large proportion of the chicken meat production is on holdings which specialise in the production of either eggs or poultry meat. A few laying birds are kept for commercial production on orchards, dairy farms and wheat farms throughout the agricultural areas.

The Western Australian Egg Marketing Board, constituted under the *Marketing of Eggs Act* 1945, is the statutory authority controlling the commercial production of eggs. Two other Acts, the *Poultry Industry Levy Act* 1965 and the *Chicken Meat Industry Act* 1977, are used to regulate and control poultry farming.

Poultry numbers have remained fairly steady over the past few years with a total number of 5,140,800 for 1991-92. The number of turkeys showed a substantial increase of 322 percent, increasing from 7,700 in 1990-91 to 24,800 in 1991-92. Egg production decreased slightly with 18,059 dozen eggs produced during 1991-92. Poultry slaughtered tonnage increased by 11 per cent to 37,526 tonnes.

|                    | Unit              | 1989-90 | 1990-91 | 1991-92 |
|--------------------|-------------------|---------|---------|---------|
| Egg production—    |                   |         |         |         |
| Quantity (a)       | '000 dozen        | 18,768  | 18,578  | 18,059  |
| Gross value        | \$'000            | 32,690  | 30,591  | 30,304  |
| Poultry slaughtere | ed for table purp | oses—   |         |         |
| Dressed weight     | tonnes            | 36,950  | 35,299  | 37,526  |
| Gross value        | \$'000            | 60,345  | 57,724  | 61,025  |

#### TABLE 11.20 – EGG PRODUCTION AND POULTRY SLAUGHTERED FOR TABLE PURPOSES YEAR ENDED 30 JUNE Reference : Catalogue No. 7221.5

(a) Source: Western Australian Egg Marketing Board.

Beekeeping Commercial producers of honey in Western Australia may be divided into three categories. There are a comparatively small number of specialist apiarists, engaged solely or mainly in honey production, who operate on a large scale and transport their hives from district to district. There are also some substantial producers who are engaged in agricultural activities and use their farms as a central site from which they may transport their hives to other areas as necessary. Finally there are the many farmers and orchardists who keep a few hives and produce honey as a minor supplementary activity. The number of productive hives increased from 20,000 in 1990-91 to 22,000 in 1991-92. Honey production rose to 2,264 tonnes an increase of 151 per cent.

| TABLE 11.21 – BEEHIVES AND PRODUCTION OF HONEY AND |
|--|
| BEESWAX  |
| Reference: Catalogue No. 7221.5                    |

|                    | Unit         | 1989-90 | 1990-91 | 1991-92 |
|--------------------|--------------|---------|---------|---------|
| Beehives—          |              |         |         |         |
| Productive         | <i>'</i> 000 | 27      | 20      | 22      |
| Unproductive       |              | 7       | 6       | 6       |
| Honey production   | tonnes       | 2,330   | 1,490   | 2,264   |
| Beeswax production | "            | 41      | 28      | 38      |
|                    |              |         |         |         |

**The Department Of Agriculture** A Bureau of Agriculture was formed in 1894 and became the Department of Agriculture in 1898. Since then the Department of Agriculture has expanded progressively and undertakes as its major functions the investigation and development of new products and handling or processing techniques; conducts applied research to develop existing and new technology which will help rural industries to maintain economic viability; provides essential diagnostic services; and develops and promotes sustainable land use systems which maintain or improve the basic soil, vegetative and animal resources. The Department also provides advisory services which encourage the adoption and effective use of innovation, new technology, and financial management and control.

> The Department of Agriculture maintains and progressively develops, in consultation with industry and the community, the legislative and regulatory framework within which the rural and allied industries function. To this end it administers Acts and liaises with industry through representation or association with a number of statutory boards or committees.

> The Head Office at South Perth houses the main administrative, research, specialist and diagnostic staff and there are district offices and research stations located around the state. Most research stations are for the wheat and sheep, beef, and dairying industries but specific stations cater for fruit, vegetables, poultry, pigs, viticulture and tropical agriculture. These regional and district offices also provide a number on non-regulatory services to rural industry. These include animal disease diagnostic services; merino sheep fertility breeding programs; land resource information service; and animal feedstuffs quality testing services.

AgricultureThe Agriculture Protection Board is the body responsible for<br/>ensuring that the State's agriculture resources are protected from<br/>the sometimes devastating effects of plant and animal pests.

The Board administers the *Agriculture and Related Resources Protection Act* which replaced the *Noxious Weed Act* and the *Vermin Act* in 1976. Plants and animals can be declared by the Board to be 'declared animals' for the purposes of the Act.

The Agriculture Protection Board's role is to coordinate the control effort and see that declared plants and declared animals are dealt with according to its policies. In addition to coordinating overall agriculture protection policies, the Board advises on methods of control, maintains services to prevent pest animals and plants entering the State, and conducts research into the biology and control of vertebrate pests.

Advisory Committees Responsibility for advising the Minister for Agriculture on various aspects of agricultural activity is vested in a number of advisory committees, whose members are drawn from government departments and authorities, industry organisations and marketing and storage organisations.

> These committees include the State Wheat Advisory Committee, the State Coarse Grains and Seeds Advisory Committee, the State Soil Conservation Advisory Committee, Drought Consultative Committee and the Ord Project Co-ordinating Committee.

## Forestry

| Forests For Wood,<br>Water And Wildlife | Most of Western Australia's native hardwood forests grow in the<br>south-west of the State, between Walpole and Perth. From these<br>forests are drawn a wide variety of essential resources, both  |
|---|---|
|   | tangible and intangible: the beauty and durability of their timbers<br>is renowned world-wide, and generates a considerable income for<br>Western Australia each year; the forests also provide an  |
|   | increasingly popular environment for recreation, within easy<br>reach of major cities and towns. Catchment areas, which supply<br>high quality water for domestic and agricultural use to the most  |
|   | populated areas of the State, occur throughout the forests; and<br>conservation areas for native wildlife and plants ensure the<br>long-term survival of many species, as well as providing an<br>invaluable scientific and educational resource. |
|   |   |

At present 1,750,357 hectares have been permanently dedicated as State forest, 144,399 hectares are held as timber reserves, and 32,518 hectares of freehold land is vested mainly for pine production.

The PrimeJarrah (Eucalyptus marginata) is the State's principal timber and theIndigenous Forestsprime forest covers almost 1.4 million hectares. Karri (E.diversicolor) is next in importance and is distributed over some126,000 hectares. Wandoo (E. wandoo) accounts for a smallerportion of the dedicated area (106,000 hectares) and Tuart (E.

*gomphocephala*), another valuable timber, has a restricted area of about 1,000 hectares. Blackbutt (*E. patens*) occurs in patches throughout the jarrah and karri forests and is an important milling timber with properties and uses similar to jarrah. Marri (*E. calophylla*), the most widespread of the commercial eucalypts, is used to a limited extent as building scantling, pole timber and as the principal material for an export woodchip industry based in the Manjimup region.

Other eucalypts and many trees of different genera occur within the prime forest belt but they are not of major economic importance. The main distribution of the prime forests, is practically confined to the south-western portion of the State.

**The Inland Forests** East of the area of prime forest is an inland woodland, within which are a number of eucalypts (both tree and mallee form), as well as several types of Acacia, such as the wattles and mulgas, tea tree (*Melaleuca spp.*) and casuarinas. Sandalwood (*Santalum spicatum*), indigenous to the wheat belt and semi-arid areas of the State, is exported to Asian countries for use in the manufacture of incense.

The major emphasis of forestry activities in the goldfields area is the conservation of woodlands. During recent years, soil conservation in the regions of low rainfall has received increasing attention and the importance of controlling clearing, grazing and firewood cutting has been recognised. The Department of Conservation and Land Management maintains a staff to exercise these controls and to advise on tree planting. Work is proceeding with demarcation of areas representing important inland ecotypes for which long-term conservation proposals have been prepared.

Forestry Forests in Western Australia are managed by the Department of Conservation and Land Management, within a General Working Plan of multiple use management and regulation of an allowable hardwood sawlog cut. Major uses include wood production, water production, forest and catchment protection, recreation, flora, fauna and landscape conservation, scientific study and education, public utility and mining.

Timber harvesting in both natural forests and plantations is tightly controlled and closely monitored to meet environmental protection and disease management requirements, and to achieve the most efficient use of the resource.

To supplement native forest production, pine forests have been established throughout the south-west. There are over 68,000 hectares of State owned plantations and an increasing amount of forests planted on private land. *Pinus radiata* and *Pinus pinaster* are the principal species.

| Туре                    | Crown<br>Land | Private<br>Property | Total     |
|-------------------------|---------------|---------------------|-----------|
| Sawlog Timber (a)—      |               |                     |           |
| Hardwood—               |               |                     |           |
| Jarrah                  | 399,033       | 5,253               | 404,286   |
| Karri                   | 179,337       | 10,210              | 189,547   |
| Marri                   | 55,132        | 7,796               | 62,928    |
| Blackbutt               | 1,534         | 33                  | 1,567     |
| Wandoo                  | 266           | 508                 | 774       |
| Sheoak                  | 590           |                     | 590       |
| Other                   | 481           | 122                 | 603       |
| Total Hardwood          | 636,373       | 23,922              | 660,295   |
| Pine                    | 101,125       | 9,364               | 110,489   |
| Total Sawlogs           | 737,498       | 33,286              | 770,784   |
| Other log material (b)— |               |                     |           |
| Hardwood                | 611,354       | 96,634              | 707,988   |
| Softwood                | 262,296       | 76,047              | 338,343   |
| TOTAL LOG TIMBER        | 1,611,148     | 205,967             | 1,817,115 |

# TABLE 11.22 - LOG PRODUCTION FROM CROWN LAND<br/>AND PRIVATE PROPERTY<br/>1991-92

(cubic metres)

(a) Sawlog timber from all sources, including veneer, but excluding chiplogs, firewood, piles and poles. Includes sawlogs and logs used in the production of plywood veneer. (b) Includes chiplogs, pine particle board material, pine rounds and pine industrial (MDF) material.

Source: CALM Annual Report 1991-92

Other major forest-related roles of the department include reduction of forest diseases, particularly jarrah dieback (*Phytophthora cinnamomi*), fire surveillance and control measures and the granting of sawmilling permits and forest produce licences.

**Forest Production** Sawn timber from jarrah and karri is the principal form of forest wood production, but there will be a gradual increase in the use of pine in the future. Karri and locally grown pine logs together with imported logs, are used for plywood. During recent years, there has been a greater use of local logs for plywood manufacture. Small sized logs, from thinning pine plantations and manufacturing residues, are used for the production of particleboard. Hardwood mill wastes and bush residues of marri and karri, form the basis of an important export woodchip industry located in the southern forests.

In addition to these major wood products, the State's forest wealth includes sandalwood for export, firewood for general purposes, and various seeds and plants for propagation both in Australia and abroad. The karri, wandoo, marri and some inland scrub species are important nectar producers for apiarists, who inove their bees to various forest sites to follow the nectar flow.

## Fisheries

General Fisheries Rock lobsters are the most important item of production of the Western Australian fishing industry. The value of the 1991-92 catch was \$252.1 million, which was 67 per cent of the total value of the state's fish catch. The most important commercial species of rock lobster in Western Australian waters is the Western Rock Lobster, which is fished off the south-west coast between Murchison River and Bunbury. The principal localities around which rock lobsters are caught are the Abrolhos Islands, Geraldton, Dongara, Green Head, Jurien Bay, Cervantes, Lancelin, Ledge Point and Fremantle. The industry is protected from overfishing by numerous measures and the catch is processed at shore stations licensed under the *Fisheries Act 1905* as processing establishments.

The catches of Australian salmon, the 1991-92 catch being 1,306 tonnes, yield a significant proportion of the production of inshore and beach fishing and are used almost exclusively for canning. The remainder of the catch from this type of fishing comprises chiefly Australian herring, western sand whiting and sea mullet sold mainly as wet fish on the local market, and pilchard and scaly mackerel, sold as bait and for pet food. There is an important fishery for southern bluefin tuna on the south coast of the State and investigations are being conducted on the commercial potential of tuna stocks in northern waters.

The coastal waters northward from the mouth of the Murchison River to North West Cape and Exmouth Gulf, are the source of several species of commercial importance. Snapper are caught between the Murchison River and North West Cape during the northern schooling season from May to August. Cod and Spanish mackerel, though in smaller quantities, are also caught between the Murchison River and North West Cape.

Prawn fisheries have been established at Shark Bay and Exmouth Gulf, with the catch processed at Carnarvon and Learmonth respectively. The major species caught are western king prawns and brown tiger prawns, as well as quantities of banana and endeavour prawns. In these areas and the smaller fisheries at Nickol Bay and Onslow, the number of boats licensed to fish for prawns is restricted as a conservation measure. The key prawn fisheries in Western Australia generally open about February and close in October. The total prawn catch for 1991-92 was 3,085 tonnes with a value of \$25.1 million.

Important catches of scallops are taken in Shark Bay with smaller catches occurring at the Abrolhos Islands. In 1991-92, the value of the scallop catch was 20,539 tonnes, valued at \$57.5 million. This was an all time record catch.

Shark fishing off the south and lower west coast continued at a high level, with 1,542 tonnes caught in 1991-92. Stock assessments undertaken suggest that such catches may not be sustainable in the longer term and industry has supported moves to reduce fishing pressure.

Abalone are taken by licensed divers in the southern half of the State, with most production coming from the south coast. Species taken are greenlip, blacklip, brownlip and Roe's abalone. The 1991-92 catch was 309 tonnes with a value of almost \$8.2 million.

|                              |              | Ŭ             |         |                 |                    |           |  |  |
|------------------------------|--------------|---------------|---------|-----------------|--------------------|-----------|--|--|
|                              |              | ntity (a) (to |         |                 | Value (b) (\$'000) |           |  |  |
| Species-Common name          | 1989-90      | 1990-91       | 1991-92 | 1989-90         | 1990-91            | 1991-92   |  |  |
| Fish—                        |              |               |         |                 |                    |           |  |  |
| Barramundi (Giant perch)     | 57           | 62            | 60      | 330.8           | 382.2              | 365.9     |  |  |
| Cobbler                      | 92           | 65            | 88      | 305.8           | 257.3              | 408.0     |  |  |
| Emperor (North-west snapper) | 433          | 413           | 381     | 1060.1          | 1,161.8            | 931.2     |  |  |
| Herring, Australian          | 1,206        | 1,518         | 1,298   | 1236.1          | 607.6              | 579.5     |  |  |
| Jewfish, Westralian          | 229          | 219           | 183     | 1941.8          | 1,492.6            | 1,173.7   |  |  |
| Mackerel, Spanish            | 212          | 265           | 389     | 710.2           | 1,040.0            | 1,421.9   |  |  |
| Mullet, sea                  | 473          | 427           | 485     | 532.3           | 515.1              | 710.4     |  |  |
| Mullet, yellow-eye           | 221          | n.a.          | 229     | 115.0           | n.a.               | 182.7     |  |  |
| Pilchard                     | 8,138        | 9,106         | 7,327   | 4,522.4         | 4,184.6            | 3,944.7   |  |  |
| Salmon, Australian           | 1,711        | 2,119         | 1,306   | 642.1           | 774.1              | 500.3     |  |  |
| Scaly mackerel               | 418          | 142           | 287     | 375.9           | 91.1               | 186.6     |  |  |
| Shark, bronze whaler         | 486          | 451           | 442     | 1,338.9         | 1,455.5            | 1,283.5   |  |  |
| Shark, whiskery              | 332          | 427           | 374     | 767.1           | 1,038.8            | 951.6     |  |  |
| Shark, other                 | 1,104        | 583           | 726     | 1,973.6         | 739.5              | 1,000.7   |  |  |
| Snapper                      | 948          | 791           | 716     | 3,059.1         | 2,396.5            | 2,399.4   |  |  |
| Tuna, southern bluefin       | 289          | 242           | 136     | 369.9           | 384.7              | 186.8     |  |  |
| Whiting, western sand        | 164<br>2,457 | 164           | 153     | 538.6<br>5654.6 | 489.1              | 577.9     |  |  |
| Other species                |              | 3,183         | 4,194   |                 | 7,147.8            | 11,977.8  |  |  |
| Total fish                   | 18,969       | 20,179        | 18,774  | 25,474.3        | 24,158.3           | 28,782.6  |  |  |
| Crustaceans—                 |              | <b>.</b>      |         |                 |                    |           |  |  |
| Crabs                        | 290          | 315           | 270     | 1,094.0         | 1,737.6            | 1190.7    |  |  |
| Prawns—                      |              |               |         |                 |                    |           |  |  |
| Banana                       | 338          | 295           | 322     | 1,536.6         | 1,857.0            | 1,977.4   |  |  |
| Brown tiger                  | 766          | 865           | 715     | 7,480.5         | 8,069.2            | 7,040.7   |  |  |
| Endeavour                    | 274          | 231           | 238     | 1,501.3         | 1,398.7            | 1,626.6   |  |  |
| Western king                 | 1,308        | 1,526         | 1,620   | 11,770.6        | 12,500.2           | 12,866.8  |  |  |
| Other species                | 302          | 234           | 190     | 1020.6          | 1,893.8            | 1,637.5   |  |  |
| Total prawns                 | 2,988        | 3,152         | 3,085   | 23,309.6        | 25,718.8           | 25,149.0  |  |  |
| Rock lobsters                | 9,949        | 8,921         | 12,202  | 116,908.2       | 187,543.5          | 252,149.5 |  |  |
| Total crustaceans            | 13,227       | 12,397        | 15,565  | 191,311.8       | 215,046.7          | 278,538.6 |  |  |
| Molluscs—                    |              |               |         |                 |                    |           |  |  |
| Abalone                      | 300          | 302           | 309     | 6,499.9         | 7,359.2            | 8,199.1   |  |  |
| Scallops                     | 1,869        | 6,264         | 20,539  | 7,390.2         | 17,164.4           | 57,509.6  |  |  |
| Other molluscs               | 486          | 329           | 297     | 1,001.1         | 756.1              | 786.6     |  |  |
| Total molluscs               | 2,654        | 6,895         | 21,145  | 14,891.1        | 25,279.7           | 66,495.2  |  |  |
| TOTAL WESTERN AUSTRALIA      | 34,850       | 39,471        |         |                 | 264,484.7          | -         |  |  |
|                              |              | •             | •       |                 | -                  | -         |  |  |

## TABLE 11.23 – FISH, CRUSTACEANS AND MOLLUSCS: CATCH AND VALUE Reference: Catalogue No. 7601.5

(a) Live (whole) weight. (b) Gross value paid to fishermen.

The first fishing grounds to be exploited were the estuaries and rivers and, although they are not now as important as other grounds, they still provide substantial quantities of fish of a fairly wide variety. The principal species are cobbler and yellow-eye mullet, sea mullet and Perth herring, most of which are caught in the Swan and Harvey Estuaries and the Peel and Leschenault Inlets. Other species taken include sand whiting, King George whiting, tailor, garfish and pilchard. Crabs, school prawns and Western King Prawns are also caught commercially in these waters.

Fisheries The Western Australian Fisheries Department conducts research Administration The Western Australian Fisheries Department conducts research on a wide range of commercially important fish species such as rock lobsters, prawns, snapper, Australian salmon, pearl oysters and tuna. The Department is also involved in research on recreational fisheries, estuaries, freshwaters and environmental matters relating to fisheries. Much of this research is carried out in association with the Commonwealth Scientific and Industrial Research Organization, other State and Commonwealth bodies and tertiary education institutions.

> Research is carried out chiefly at two centres. The marine research centre at Waterman, was built for the Fisheries Department and incorporates several separate laboratories and a large aquarium with circulating water, for experiments and studies on a wide range of species. A second centre, the Commonwealth Scientific and Industrial Research Organization marine research centre is located at Marmion.

Aquaculture And Inland Fishing The commercial aquaculture industry involves the culture of a wide range of species including trout and goldfish farming; pond culture of crayfish (yabbies, koonacs and marron); the hatchery production and growout of scallops, edible oysters and giant clams; and the cultivation of mussels and pearl oysters.

> The yabbie industry is still a relatively new industry and is expected to rapidly expand. Marron production for the food market has shown an increase to the detriment of marron for stocking purposes. Mussel cultivation is also a relatively new industry with the first significant production not occuring until 1989-90. The mussels cultivated are used to supply the WA market as well as international markets. There was a continuation of the stocking of farm dams with rainbow trout in the south-west to provide angling for tourists.

**Pearl-shell Fishing** And Pearl Culture Pearl and pearl-shell fishing has been a valuable part of the Australian fishing/aquaculture industry for many years, the main centre being Broome. The natural pearls obtained were once an important feature of production but the success of the industry now depends almost entirely on the shell produced and the price obtainable for it, and cultured pearl production from licensed farms. Pearl oyster fishing, in terms of value, is second only to the rock lobster catch.

Australian Fishing Zone The Australian Fishing Zone (A.F.Z.) covering waters within 200 nautical miles of Australia, was declared on 1 November 1979. Under licence from the Commonwealth Government, foreign fishing vessels are permitted to fish within the Zone. A number of joint-venture feasibility studies and test fishing programs have been conducted in the Zone since its declaration.

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## MINING

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## Chapter 12

# MINING

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## Chapter 12

## MINING

# Mining in Western Western Australia is a world-scale producer of a range of minerals. The export-orientated mining industry is one of the most significant contributors to the State economy.

Gold mining was the mainstay of the State's mining industry from the 1890s through to the 1960s, when iron ore, nickel, bauxite and oil assumed prominence. Since the late 1970s, however, high gold prices and technological advances in processing methods have led to renewed growth in the industry. Production has increased significantly every year since 1981-82. Major goldmine developments and expansions have occurred, not only in the traditional areas around Kalgoorlie and other Eastern Goldfields centres, but also in the Pilbara and at Boddington in the South-West.

Other significant mineral projects in Western Australia are the giant iron ore mines in the Pilbara, nickel in the Eastern Goldfields, bauxite on the Darling Scarp, mineral sands principally at Capel and Eneabba, and diamonds in the Kimberley. Coal and solar salt production are also commercially important. Copper and zinc mining recommenced in 1988 and production of both is expected to reach significant levels.

The North-West Shelf Project, which supplies liquefied natural gas (LNG) for export, gas for industrial and domestic purposes and condensate, is the most important project in the State's oil and gas sector. Over \$12 billion is expected to be spent on the development of this project, which will generate annual exports worth over \$2 billion. Several significant oil projects have also been developed in shallow waters near the existing Barrow Island field.

Apart from the 1989 commissioning of the LNG plant, other 'value-added' developments in the mining industry include synthetic rutile production from ilmenite, and the extraction of liquefied petroleum gas (LPG) at Kwinana from gas piped from the north-west.

**Department Of Minerals and Energy** In Western Australia the development of minerals occurs under a variety of statutes, notably the Mining Act administered by the Department of Minerals and Energy. The primary role of the Department is to facilitate the orderly exploration and development of minerals and petroleum in Western Australia for the benefit of the community, now and in the future. It also provides scientific and technical advice to Government agencies and the public on geo-technical and mining related matters, provides chemical consultancy services, regulates and records the ownership of mining tenements and regulates for public safety in matters concerning explosives and dangerous goods.

The Department is responsible for the collection of royalties for minerals owned by the Crown. Royalties for the State Government in 1990-91 amounted to \$324 million.

Department of Commerce and Trade and Resources Development The Department of Commerce and Trade and Resources Development The Department of Commerce and Trade and Resources Development projects in recognition of the special approach required to effectively support projects of the magnitude undertaken in this State. By presenting a single point of contact with the Government, the Department facilitates development projects by coordinating the activities of government agencies in relation to a particular project and resolves issues between agencies and the developer or between agencies themselves.

### Mining Statistics

*Australian Standard Industrial Classification* (*ASIC*) ASIC classifies all economic activities into four hierarchic levels. At the broadest level of the classification, economic activities are grouped into 'industry divisions'. Each industry division is further divided into industry sub-divisions, groups and classes.

**Census of Mining Establishments** The annual Mining Census covers the ASIC classes for metallic minerals, coal, oil and gas. On a triennial basis, the most recent being 1989-90, data was collected for construction materials and other non-metallic minerals. As a consequence it is not possible to relate overall Census totals between years.

In 1990-91 Western Australia continued to be the leading state in Australia in terms of turnover, and value added for mining with 35.7 per cent and 35.5 per cent respectively.

#### TABLE 12.1 – MINING ESTABLISHMENTS – SUMMARY OF OPERATIONS BY INDUSTRY SUB-DIVISION

| Reference | : | Catalogue | No. | 8401.5 |  |
|-----------|---|-----------|-----|--------|--|
|-----------|---|-----------|-----|--------|--|

| Industry sub-division |         | lumber of<br>ments (a) | Persons<br>employed<br>(a) (b) | Wages and<br>salaries | Turnover | Value<br>added | Capital<br>expenditure |
|-----------------------|---------|------------------------|--------------------------------|-----------------------|----------|----------------|------------------------|
|                       |         |                        | 1990-91                        | l                     |          |                |                        |
| Metallic minerals     |         | 162                    | 18,804                         | 907.5                 | 7,646.0  | 4,817.1        | 1,207.9                |
| Coal, oil and gas     |         | 40                     | 3,638                          | 186.4                 | 2,670.4  | 2,382.9        | 831.0                  |
| Total mining (d)      | 1990-91 | 202                    | 22,442                         | 1,093.9               | 10,316.4 | 7,200.0        | 2,038.9                |
|                       | 1989-90 | 240                    | 23,312                         | 972.5                 | 7,660.7  | 4,827.0        | 1,641.3                |
|                       | 1988-89 | 128                    | 20,613                         | 792.4                 | 6,491.7  | 4,083.8        | 2,308.9                |

(a) At 30 June. (b) Includes working proprietors. (c) Excludes drawings of working proprietors. (d) Excludes Construction materials and Other non-metallic minerals.

Mining

Western Australia's share of employment in the Australian mining industry remained at 34 per cent although employment in the Metallic minerals, coal, oil and gas industries showed a decrease of 3.7 per cent.

#### TABLE 12.2 – MINING ESTABLISHMENTS – PERSONS EMPLOYED, VALUE ADDED AND CAPITAL EXPENDITURE BY INDUSTRY SUB-DIVISION WESTERN AUSTRALIA AND AUSTRALIA: 1990-91

| Persons employed (a)     |                      |              |                               | Value adde           | ed        | Capital expenditure           |                      |           |                               |
|--------------------------|----------------------|--------------|-------------------------------|----------------------|-----------|-------------------------------|----------------------|-----------|-------------------------------|
|                          |                      |              | Western<br>Australia<br>as a  |                      |           | Western<br>Australia<br>as a  |                      |           | Western<br>Australia<br>as a  |
| Industry<br>sub-division | Western<br>Australia |              | percentage<br>of<br>Australia | Western<br>Australia | Australia | percentage<br>of<br>Australia | Western<br>Australia | Australia | percentage<br>of<br>Australia |
|                          | <b>′</b> 000         | <i>'</i> 000 | %                             | \$m                  | \$m       | %                             | \$m                  | \$m       | %                             |
| Metallic minerals        | 18.8                 | 31.7         | 59                            | 4,817.1              | 7,454.3   | 65                            | 1,207.9              | 1,856.7   | 65                            |
| Coal, oil and gas        | 3.6                  | 34.1         | 11                            | 2,382.9              | 12,835.0  | 19                            | 831.0                | 2,157.6   |                               |
| Total mining (b)         | 22.4                 | 65.8         | 34                            | 7,200.0              | 20,289.3  | 35                            | 2,038.9              | 4,014.3   | 51                            |

(a) At 30 June. Includes working proprietors. (b) Excludes Construction materials and Other non-metallic minerals.

**Mineral Production** In 1991-92, the value of iron ore produced overtook the value of gold produced (see table 12.3). Iron ore recorded a 3.2 per cent increase in production to 111,065,000 tonnes, and an 11.1 per cent increase in value. The value of gold produced in 1991-92 decreased by 7.2 per cent, despite an increase of 0.5 per cent in the quantity produced. In the last three financial years, the combined value of gold bullion and iron ore has increased as a proportion of the total value of all minerals produced - in 1989-90, this proportion was 44.3 per cent; in 1990-91, 45.2 per cent; and in 1991-92, 46.9 per cent.

Other minerals which provide strong contributions to the State's value of mineral production in 1991-92 are bauxite, coal, ilmenite, crude oil (including condensate), liquefied natural gas, diamonds, natural gas and nickel concentrate.

# Private Mineral<br/>Exploration (Other<br/>than for petroleum)Mineral exploration (other than for petroleum) is carried out over<br/>a large portion of the State. In recent years private exploration has<br/>concentrated on gold (see table 12.4), but 1991-92 saw an increase<br/>in expenditure on exploration for iron ore by \$23.9 million (or<br/>191.2 per cent).

Total expenditure on private mineral exploration increased by 1.1 per cent in 1991-92 - from \$325.5 million to \$329.1 million. Expenditure on base metals exploration decreased by 31.1 per cent.

Despite this, Western Australia continued to be the dominant state for exploration, in total and for most individual minerals.

### Mining

|                                  |                            | 1                 | 989-90             | 1990-91          |                   | 1991-92          |                  |
|----------------------------------|----------------------------|-------------------|--------------------|------------------|-------------------|------------------|------------------|
| Mineral                          |                            | Quantity          | Value              | Quantity         | Value             | Quantity         | Value            |
|                                  |                            |                   | \$'000             |                  | \$'000            |                  | \$'000           |
| Metallic minerals—               |                            |                   |                    |                  |                   |                  |                  |
| Bauxite/Alumina (a)              | '000 tonnes                | 6,651             | 2,335,697          | 6,800            | 2,099,126         | 7,129            | 1,758,15         |
| Copper concentrate               | '000 tonnes                | 32.9              | 12,451             | 36.9             | 13,885            | 28.5             | 11,43            |
| Copper ore<br>Gold bullion       | tonnes<br>kilograms        | 22,484<br>148,420 | 6,922<br>2,371,726 | 181,165          | 2,900,129         | 182,043          | 2,689,92         |
| Iron ore                         | '000 tonnes                | 106,272           | 2,246,028          | 107,673          | 2,648,687         | 111,065          | 2,941,51         |
| Manganese                        | '000 tonnes                | 273               | 1,200              | 138              | 21,967            | 395              | 71,85            |
| Mineral sands concentrates       | s—                         |                   |                    |                  |                   |                  |                  |
| Ilmenite                         | '000 tonnes                | 1,356             | 220,714            | 1,229            | 217,193           | 1,280            | 236,27           |
| Leucoxene                        | '000 tonnes                | 15.0              | 7,903              | 23.8             | 13,260            | 11.8             | 6,51             |
| Monazite                         | '000 tonnes                | 13.4              | 9,731              | 6.9              | 5,114             | 7.4              | 2,13             |
| Rutile<br>Zircon                 | '000 tonnes<br>'000 tonnes | 82.2<br>300.3     | 58,542<br>175,191  | 65.4<br>208.4    | 49,598<br>100,802 | 47.5<br>226.9    | 26,879<br>61,114 |
|                                  |                            |                   |                    |                  | 2                 |                  |                  |
| Nickel concentrate<br>Nickel ore | tonnes<br>tonnes           | 446,453<br>37,084 | 565,370<br>20,598  | 510,320<br>8,666 | 591,303<br>4,575  | 475,528<br>5,210 | 486,56<br>3,13   |
| Tantalite                        | tonnes                     | 439               | 16,170             | 703              | 22,767            | 873              | 25,00            |
| Tin concentrate                  | tonnes                     | 237               | 1,298              | 262              | 1,229             | 273              | 1,280            |
| Zinc                             | tonnes                     | 92,822            | 59,755             | 121,979          | 60,462            | 312,042          | 125,57           |
| Other                            |                            |                   | 27,519             |                  | 22,827            |                  | 52,15            |
| Total value                      |                            |                   |                    |                  |                   |                  |                  |
| metallic minerals                |                            |                   | 8,136,814          |                  | 8,772,923         |                  | 8,499,50         |
| Coal, oil and gas—               |                            |                   |                    |                  |                   |                  |                  |
| Coal                             | '000 tonnes                | 4,161             | 183,698            | 5,218            | 232,916           | 5,491            | 243,54           |
| Crude oil<br>(incl. condensate)  | megalitres                 | 5,564             | 837,125            | 7,004            | 1,425,022         | 7,429            | 1,280,204        |
| Liquefied natural gas            | Gigajoules                 | 104,167           | 336,091            | 184,931          | 836,401           | 219,701          | 846.33           |
| Natural gas                      | gigalitres                 | 3,848             | 356,847            | 3,614            | 379,229           | 3,769            | 349,25           |
| Total value                      | 00                         |                   |                    |                  |                   |                  |                  |
| coal, oil and gas                |                            |                   | 1,713,762          |                  | 2,873,568         |                  | 2,719,34         |
| Construction materials—          |                            |                   |                    |                  |                   |                  |                  |
| Aggregate                        | '000 tonnes                | 150.8             | 755                | 102.9            | 435               | 121.3            | 73               |
| Gravel                           | '000 tonnes                | 45.0              | 213                | 31.0             | 152               | 120.7            | 62               |
| Rock<br>Sand                     | '000 tonnes<br>'000 tonnes | 108.2<br>729.9    | 801                | 43.1<br>548.7    | 455<br>2,327      | 144.6<br>1,031.6 | 53<br>5,75       |
|                                  |                            |                   | 2,694              |                  |                   |                  | -                |
| Dimension stone                  | tonnes                     | 4,572             | 1,981              | 794              | 105               | 6,358            | 1,97             |
| Total value construction         |                            |                   |                    |                  |                   |                  |                  |
| materials and<br>dimension stone | '000 tonnes                | 1,038.4           | 6,443              | 726.5            | 3,475             | 1,424.6          | 9,62             |
| Other non-metallic miner         |                            | 1,000.4           | 0,415              | 720.0            | 0,110             | 1,121.0          | 7,02             |
| Clays                            | '000 tonnes                | 369.7             | 5,351              | 192.8            | 5,743             | 61.8             | 6,47             |
| Diamonds                         | '000 carats                | 33,855            | 413,584            | 29,964           | 435,725           | 47,485           | 564,76           |
| Gypsum                           | tonnes                     | 154,809           | 995                | 82,520           | 613               | 101,822          | 1,04             |
| Limestone                        | '000 tonnes                | 1,699             | 7,876              | 1,738            | 9,854             | 2,054            | 12,14            |
| Salt                             | '000 tonnes                | 5,925             | 124,110            | 6,413            | 136,973           | 6,927            | 153,14           |
| Silica<br>Spodumene              | '000 tonnes<br>tonnes      | 478.4<br>47,428   | 3,987<br>8,305     | 861.7<br>40,376  | 7,597<br>7,079    | 654.6<br>42,516  | 6,23<br>8,89     |
| Talc                             | tonnes                     | 220,263           | 5,223              | 161,560          | 11.692            | 168,891          | 11.82            |
| Other                            |                            |                   | 1,747              |                  | 3,781             |                  | 5,02             |
| Total value other                |                            |                   |                    |                  |                   |                  |                  |
| non-metallic minerals            |                            |                   | 571,179            |                  | 619,057           |                  | 769,55           |
| non-metanic minerals             |                            |                   |                    |                  |                   |                  | ,                |

#### TABLE 12.3 – MINERAL PRODUCTION

(a) Bauxite production quantities and values are not available from the Department of Minerals and Energy. Production figures and values for Alumina are provided to give and indication of the size of this industry in Western Australia.

Source: Department of Minerals and Energy

| Type of                | Total private exploration |             |         |  |  |
|------------------------|---------------------------|-------------|---------|--|--|
| mineral sought         | 1989-90                   | 1990-91     | 1991-92 |  |  |
| Base Metals (a)        | 36.8                      | 63.7        | 43.9    |  |  |
| Coal                   | 2.4                       | 1.1         | 1.2     |  |  |
| Construction materials | 1.6                       | n.p         | n.p.    |  |  |
| Diamonds               | 25.0                      | n.p<br>26.7 | 25.1    |  |  |
| Gold                   | 214.4                     | 200.9       | 208.5   |  |  |
| Iron ore               | 10.7                      | 12.5        | 36.4    |  |  |
| Mineral sands          | 7.1                       | 8.3         | 7.0     |  |  |
| Tin/tungsten           | 0.1                       | n.p         | n.p.    |  |  |
| Uranium                | 7.0                       | 7.4         | 4.3     |  |  |
| Other                  | 10.3                      | 3.8         | n.p.    |  |  |
| Total                  | 315.4                     | 325.5       | 329.1   |  |  |

#### TABLE 12.4 – PRIVATE MINERAL EXPLORATION (OTHER THAN FOR PETROLEUM) EXPENDITURE BY TYPE OF MINERAL SOUGHT (\$m)

Reference: Catalogue No. 8412.0

(a) Copper, lead, zinc, silver, cobalt and nickel.

Petroleum In the past few years petroleum exploration in Western Australia has been centred on the Carnarvon Basin, with lesser activity taking place in the onshore Canning and Perth basins and the offshore Bonaparte Basin.

> As at 30 June 1992, there were 170 current petroleum titles in Western Australia - 114 exploration permits, 26 production licenses, 25 pipeline licenses and five retention leases. The 114 exploration permits (58 offshore and 56 onshore) cover an area of about 400,000 square kilometres out of a total of 2.1 million kilometres of Phanerozoic sedimentary rocks on land and continental shelf areas. The average size of permits is now 3,500 square kilometres.

> During 1991-92, 38 exploration wells (27 offshore and 11 onshore) and six development wells were drilled (four onshore and two offshore) for a total penetration of 135,302 metres. In 1990-91, 32 exploration wells and 43 development wells were drilled and achieved a total penetration of 76,582 metres. There was much less development drilling in 1991-92 compared to 1990-91.

> Most of the drilling was concentrated in the Carnarvon basin where 31 out of the total of 43 exploration and development wells were drilled. Nine onshore wells were commenced in the basin.

> Activity in other basins consisted of one offshore and three onshore wells in Perth, five offshore wells in Bonaparte, one offshore well in Browse and only two offshore wells drilled in the Canning Basin compared with the 19 that were drilled there in the previous year. All of the wells drilled in these other basins during the 1991-92 financial year were either unsuccessful or plugged and abandoned.

# Mining \_\_\_\_\_

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|                    | Mineral Production, Australia (8405.0)   |
|                    | Mining, Western Australia (8401.5)   |
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|                    | Statistical Digest of Mineral Production 1991-92, Department of Minerals and Energy, Western Australia |

# HOUSING AND CONSTRUCTION

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### Chapter 13

# HOUSING AND CONSTRUCTION

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# HOUSING AND CONSTRUCTION

### Housing and Construction in 1992

by Gavan J. Forster, B Comm (Hons), MA (Econs), Dip Ed, Director, Economics and Housing, Master Builders' Association of WA.

#### **Residential Building**

Housing

The housing industry experienced a recovery in 1992. Dwelling starts improved as buyers took advantage of:

- lower interest rates and improved affordability
- competitive pricing by builders, and
- ample finance availability for new housing.

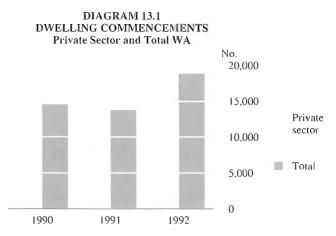
Variable housing interest rates fell from around 12.5 per cent to 10 per cent through the year, although first home buyers could obtain low start and fixed term loans at significantly lower rates. At the same time, builders were discounting their prices or including extra features in an attempt to attract buyers. This practice became less common as demand strengthened later in the year.

Banks were also willing to lend funds to the more stable and less risky housing sector rather than non-residential sector which has been in a period of substantial decline in terms of activity and asset values.

| Variable<br>housing rate | Per cent |
|--------------------------|----------|
| October 1990             | 16.0     |
| October 1991             | 12.5     |
| October 1992             | 10.0     |

All these factors combined to improve housing affordability and increase economic activity in the private sector.

The State government embarked on a record public housing construction programme in an effort to generate employment and economic recovery. However, low levels of consumer confidence and a generally recessed wider economy continued to stifle the pace of housing recovery.



Throughout the year housing recovery spread from the lower end of the market to second and third home buyers. Many buyers who had adopted a 'wait and see' approach decided to enter home purchase arrangements.

As seen in diagram 13.1, in 1992 there were 18,866 dwelling commencements compared to 13,760 in 1991, an increase of 37.1 per cent. Such large fluctuations in economic activity are not uncommon in this industry and annual construction levels can be extremely volatile. Private sector activity showed a similar upturn with 75.1 per cent of dwelling starts being located in the Perth metropolitan area.

| Dwelling Commencements:<br>Top Ranked LGA's in 1992     |   |  |  |  |
|---|---|--|--|--|
| LGA   | Number                                    |  |  |  |
| METRO   | OPOLITAN                                  |  |  |  |
| Wanneroo<br>Stirling<br>Rockingham<br>Swan<br>Melville  | 3,351<br>1,619<br>1,496<br>1,300<br>1,028 |  |  |  |
| CO  | UNTRY                                     |  |  |  |
| Mandurah<br>Busselton<br>Harvey<br>Bunbury<br>Geraldton | 1,026<br>289<br>240<br>241<br>226         |  |  |  |

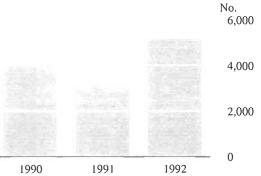
This focus on the Perth metropolitan area has been concentrated in local authority areas like Wanneroo, Swan, Stirling and Rockingham and has remained fairly constant in recent years. These authorities contain suburbs on the urban fringe where housing development has been concentrated. There has also been a great deal of activity in Mandurah.

Unit Construction Unit construction and other dwelling construction also improved beyond expectations during 1992. Investor interest may have been sparked as lower interest rates drew investors out of interest bearing securities or a poorly performing stock market into residential property investment. The gradual phasing in of 'urban housing' and inner-city infill may also have contributed to this higher construction level.

The role in the public housing sector taken by Homeswest in providing leadership in the construction of inner-city housing is notable.

Suburbs like Belmont, Rivervale and East Perth are undergoing extensive redevelopment which will resurrect communities in those areas as well as provide quality and affordable accommodation to residents. Diagram 13.2 shows 5,161 dwelling starts in this category compared to 3,068 in 1991, an increase of 68.2 per cent.





Alterations and Additions

An important yet often underestimated part of residential building activity is the alterations/additions sector. Renovation activity has stabilised at a higher level in recent years. Lower interest rates and lower building costs have encouraged buyers to

### Housing and Construction

### Real Estate in 1992

by Lino Iacomella, Public Affairs Officer, Real Estate Institute of Western Australia

The year 1992 was a year of mixed fortunes for the Western Australian real estate industry. The property market was in its third year of recession. This was most evident in the commercial property market where a significant over supply of properties and absence of buyers existed. The residential market was less depressed and there was evidence emerging that a sustained recovery was under way.

Sales of both new and established homes increased significantly in 1992. In both categories sales were 30 per cent greater in 1992 compared to the previous year, while prices remained relatively stable. There was, however, a slight increase in established house prices apparent late in the year. The median Perth house price as at December 1992 was \$99,300. Twelve months earlier the median house price in Perth was \$96,200.

The State Government was very active during the year in stimulating the housing market by substantially boosting funding for its public housing construction program.

The commercial property market generally was depressed during the year with the only signs of a recovery occuring in the retail and some parts of the industrial sectors. A substantial over supply of commercial office space in the city with the office vacancy rate in Perth's central business district reaching 30 per cent during the year. The over supply in the city was brought about by over optimistic projections of demand for office space in the 1980's and the resulting overbuilding of office towers. Perth's tallest and biggest building was completed in 1992. The 51 level Central Park tower in St. George's Terrace stands at 249 metres and comprises 67,000 sq metres of office space.

A number of major housing and related real estate initiatives were either begun or substantially developed during 1992. These included the consolidation of the Joondalup regional centre in the northern suburbs, incentives to increase inner-city housing in Perth, the East Perth Re-development Authority, and the Perth foreshore development project.



Photograph: Williams Gale

The northern suburbs fast rail line, linking Perth's central city to the new Joondalup centre was completed in 1992. The new rail link, along with the extensions to the Mitchell freeway, are the major transport lines for the fast growing northern suburbs.



Joondalup Railway Station on the new Northern Suburbs line. Photo: D. Forlani-Brennan.

Attempts to attract more people to live in Perth's inner city were focused in 1992 with the government announcement to re-develop the East Perth area for housing and tertiary commercial usage. The East Perth Re-development Authority was set up to carry out this project.

Another government initiative to stimulate inner city housing in Perth was the release of the report of the Perth Inner City Housing Taskforce. The report, which was welcomed by the real estate industry and the community in general, aimed at revitalising Perth's central city area by establishing six housing/village precincts in the central city area. The government called for substantial private sector involvement in the project and announced incentives to attract housing in the central city area such as significant land tax concessions. Plans to develop the Perth city foreshore were again prominent during the year with announcements of winners of a competition for the best foreshore plan.

Environmental issues were also very important during the year. Perth's continuing urban expansion met with a number of isolated yet significant groups of resistance from environmentalists and existing semi-rural communities. This was typified most by the controversy over the Hepburn Heights sub-division in Perth's foothills on the city's eastern fringe.

Nineteen ninety two was also a year of reflection for the industry which was continuing to grapple with the aftermath of the extraordinary asset price explosion of the late 1980's. This was most evident in the commercial property market where considerable declines in capital values and relatively few property sales made it difficult to apply realistic valuations. This was further compounded by the emergence of big rental incentives offered by landlords to attract tenants, particularly in Perth's over supplied commercial office market.

renovate as well as construct a new home. Official building approval figures show that major (\$10,000 and over) renovations activity totalled \$124.3 million in 1992. However this figure is likely to represent a substantial understatement of actual activity levels due to:

- exclusion of renovations valued at less than \$10,000
- understatement of value on building licence by applicants
- substantial 'do it yourself' market.

Actual activity levels in this sector could have actually reached \$400 million per annum in 1992, around three times the official estimate.

#### TABLE 13.1 – VALUE OF BUILDING COMPLETED BY CLASS OF BUILDING (\$ million)

| keterence: Catalogue No. 8752.5                        |         |         |         |  |  |
|--|---------|---------|---------|--|--|
| Class of building                                      | 1990    | 1991    | 1992    |  |  |
| New residential building                               | 1,400.7 | 1,080.6 | 1,184.3 |  |  |
| Alterations and additions to residential buildings (a) | 149.5   | 144.2   | 124.3   |  |  |
| Non-residential building                               | 1,080.8 | 865.4   | 881.3   |  |  |
| Total building   | 2,631.0 | 2,090.2 | 2,189.9 |  |  |

(a) Valued at \$10,000 and over.

#### Non-residential Building

Commercial Building Activity Activity in this sector was subdued in 1992, although there were some tentative signs of recovery towards the end of the year. As existing projects were completed there were fewer new projects coming on stream to replace them, due mainly to:

- low levels of business confidence
- subdued world and local economic conditions
- tardiness of bank lending for commercial property
- overgeared corporate balance sheets and a reluctance to invest in property
- falling property values and ample existing property available.

This sector includes activity in the construction of offices, hotels, educational premises, shopping centres, health centres, factories and the like. Each sector operates at a different phase of the business cycle and when one is buoyant another may be subdued.

This was the case in 1992. While office construction levels fell sharply there was an improvement in retail construction activity as major shopping centre extensions/renovations began. Many new projects were small in size and located in the suburbs rather than in the central Perth area. At the height of the construction boom in 1989-90, there were 38 projects under construction in the Perth and West Perth areas. By the end of 1992 the completion of the Central Park project and the City Train Station meant that this number had dropped to near zero. Vacancy rates for office accommodation approached 30 per cent indicating the extent of over supply in this sector.

In overall terms, the value of work approved in non-residential building in WA was lower than in previous years, although 1992 did see some turnaround with \$655.1 million worth of non-residential building activity approved, compared to \$486.7 million in 1991, an increase of 34.6 per cent.

Public sector construction activity was affected by the fiscal constraints on government expenditure, although towards the end of the year there were signs of an increase in outlays. The increase in activity was focused in the suburbs (Department of Land Administration Building in Midland, on-going construction projects in Joondalup, and a number of institutional and retail developments). In general, 1992 was a year of recovery in the housing sector. Commercial building activity remained in a downturn phase but by the end of the year some recovery in the tender market indicated better prospects in 1993.

- Completed Building Activity Building Activity The value of new residential building completed during 1992 rose by 9.6 per cent compared with the previous year. Alterations and additions to residential buildings commenced during 1992 decreased by 13.8 per cent when compared with 1991. The value of non-residential building commenced during 1992 rose by 1.8 per cent compared with 1991.
- Housing and the Census The typical dwelling in Western Australia is single, detached, of double brick construction on its own block of land. It has three bedrooms and is owned or being purchased by the occupier. Information from the 1991 Census of Population and Housing indicates that throughout the State, 80.1 per cent of the 456,515 private households lived in single detached houses. Only 7,016 (1.5 per cent) private households occupied multi-storey high rise flats (three or more storeys). The remainder were accommodated in duplexes, row or terrace houses or similar medium density housing. Between the censuses of 1986 and 1991, the number of private occupied dwellings in the State increased by 18.1 per cent.

#### TABLE 13.2 – DWELLINGS AND PERSONS ENUMERATED CENSUSES, 1986 and 1991 References Catalogue No. 245.0 and 2720.5

|                                  | 1986    | 1991    |
|----------------------------------|---------|---------|
| Occupied private dwellings (a)   | 456.5   | 539.0   |
| Persons in private dwellings (a) | 1,322.6 | 1,502.6 |

Reference: Catalogue No. 2465.0 and 2730.5

(a) Excludes caravans and persons in caravan park.

**Engineering** This survey measures engineering construction activity in **Construction Activity** Australia by public and private sector organisations. The data are compiled from the Engineering Construction Survey (ECS).

#### TABLE 13.3 – VALUE OF ENGINEERING CONSTRUCTION WORK DONE WESTERN AUSTRALIA, 1992 (\$ MILLION)

Reference: Catalogue No. 8762.0

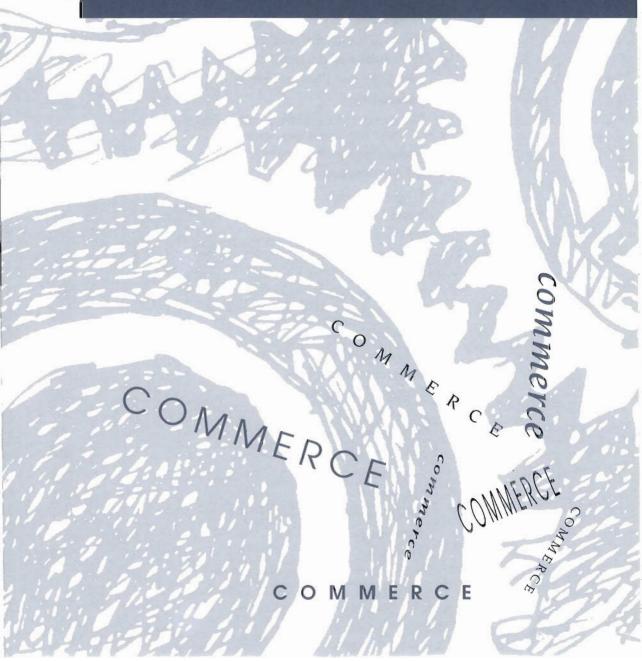
| Type of work done                                   | Amount |
|---|--------|
| Roads, highways, bridges & railways                 | 150.0  |
| Harbours  | 140.1  |
| Electricity generation, transmission & distribution | 30.0   |
| Pipelines   | 80.0   |
| Heavy Industry                                      | 417.3  |
| Other   | 65.0   |
| Total   | 882.4  |

#### References

ABS publications:Building Activity, Western Australia. (8752.5)Building Approvals, Western Australia. (8731.5)Census Counts for Small Areas, Western Australia. (2730.5)Dwelling Unit Commencements, Western Australia. (8741.5)Engineering Construction Activity, Australia. (8762.0)Estimated Stocks of Dwellings, Western Australia. (8705.5)Housing Finance for Owner Occupation, Australia. (5609.0)Persons and Dwellings in Legal Local Government Areas, Statistical<br/>Local Areas and Urban Centres/(Rural) Localities. (2465.0)

# COMMERCE

14



# Chapter 14

# COMMERCE

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### Chapter 14

### COMMERCE

### Small Business

#### Contribution by the Small Business Development Corporation

Western Australia boasts a robust small business sector with major indicators that the sector will continue to grow and increase its overall contribution to the State's economy. Overall, the small business sector has continued to dominate commercial activity, contributing to the bulk of employment, innovation and general economic activity.

The number of people establishing and working in the small business sector continues to grow, comprising the bulk of the State's enterprises and over half of the private sector workforce. While the overall contribution of the small business sector to the Western Australian labour force continues to grow, industry variations are evident. In particular, a concentration of growth has occurred in the services sector — specifically business, recreation and tourism services.

| Small<br>firms | Total<br>firms  | Per cent<br>small firms                                |
|----------------|---|--|
| 15.8           | 16.2  | 97.5   |
| 0.4            | 0.5   | 80.0   |
| 5.5            | 5.6   | 98.2   |
| 13.2           | 13.4  | 98.5   |
| 4.5            | 4.9   | 91.8   |
| 13.2           | 13.6  | 97.0   |
| 4.5            | 4.7   | 95.7   |
| 13.7           | 14.1  | 97.2   |
| 5.8            | 6.1   | 95.1   |
| 6.4            | 6.7   | 95.5   |
| 83.0           | 85.8  | 96.7   |
|                | firms<br>15.8<br>0.4<br>5.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.2<br>4.5<br>13.7<br>5.8<br>6.4 | $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ |

#### TABLE 14.1 – NUMBER AND PROPORTION OF SMALL FIRMS IN WESTERN AUSTRALIA BY INDUSTRY 1989-90

('000 firms)

Reference: Catalogue No. 1321.0

(a) Estimated proportion derived from Catalogue No. 7321.5.

There is evidence to support the fact that the number of people establishing their own business continues to rise. This is most likely the result of such factors as the rising number of unemployed in the workforce, and the steady flow of migrants into the State. The industries which tend to attract the bulk of the self-employed are those involving business and personal services. Manufacturing has also experienced a rise in the number of self employed since 1988-89. By contrast, retail, wholesale and construction sectors are witnessing a decline.

The Perth region accounts for the majority of small businesses within the State. The south-west of the State, which covers the statistical divisions of Dale, Preston, Vasse and Blackwood, has the highest concentration of small business enterprises outside of Perth.

# TABLE 14.2 – SMALL BUSINESS EMPLOYMENT WESTERN AUSTRALIA1989-90

|                        | Self-<br>employed (a) | Employed | Total<br>small | Total<br>employed | Per cent<br>small |
|------------------------|-----------------------|----------|----------------|-------------------|-------------------|
|                        | (′000)                | (′000)   | (′000)         | (′000)            | (%)               |
| Agriculture            | na                    | na       | na             | na                | na                |
| Mining                 | 0.4                   | 0.9      | 1.3            | 24.1              | 5.4               |
| Manufacturing          | 7.6                   | 15.2     | 21.8           | 76.7              | 29.7              |
| Construction           | 24.6                  | 8.7      | 33.3           | 50.6              | 65.8              |
| Wholesale trade        | 4.5                   | 12.9     | 17.4           | 37.4              | 46.5              |
| Retail trade           | 23.7                  | 27.7     | 51.4           | 100.8             | 51.0              |
| Transport & storage    | 7.2                   | 4.7      | 11.9           | 23.7              | 50.2              |
| Finance, property      |                       |          |                |                   |                   |
| and business services  | 15.1                  | 19.3     | 34.4           | 65.4              | 52.6              |
| Community services     | 6.2                   | 13.1     | 19.3           | 45.6              | 42.3              |
| Recreational, personal |                       |          |                |                   |                   |
| and other services (b) | 10.7                  | 15.0     | 25.7           | 45.3              | 56.7              |
| Total (c)              | 65.9                  | 117.5    | 217.5          | 423.7             | 51.3              |

Reference: Catalogue No. 1321.0

(a) Includes self-employed and employers. (b) Excludes private households employing staff. (c) Includes the Electricity, gas and water and Communications industries.

**Franchising** Franchising is an area of small business which is gaining recognition as a growth industry. According to the Federal Department of Industry, Technology and Commerce, Western Australia has experienced a 12 per cent increase in franchise outlets over the period from June 1989 to June 1991, and in June 1991, constituted 11 per cent of all franchise outlets in Australia.

There is every indication that the pattern of gradual growth in franchise outlets will continue or, quite possibly, accelerate.

Special Characteristics of Small Business Small business is now acknowledged as a vital and significant sector of the Australian economy, and this recognition has resulted in increased attention being given to the practices and requirements of small firms; but who is covered within the classification term of small business?

Small businesses are independently owned and managed, and closely controlled by the owner/managers who also contribute most of the operating capital. They have a relatively small share of the market in which they compete, and are not a subsidiary and do not form part of a larger business.

Typically, small businesses in the non-manufacturing sector employ fewer than 20 people and in the manufacturing sector, less than 100. However, this is not necessarily a strict definition — it is used purely as a cut-off point for statistical analysis.

A term which is becoming increasingly popular in describing this smaller business sector is "small to medium sized enterprises" (SMEs). This relatively new term is preferred by many simply because it allows for a clearer qualification of who we are talking about.

SMEs encompass the very small, or "micro" businesses with less than five employees (including self-employed), traditional "small businesses" up to twenty employees, and medium sized businesses (approximately fifty employees). The reason for the gradual shift to the term SME is the recognition that the twenty year old definitions of less than 20 and less than 100 for manufacturers may no longer be accurate and that many medium sized businesses also fit within the qualitative definition as described above.

For the sake of definition, there are also a number of characteristics that distinguish small to medium sized businesses from their larger counterparts. Outlined below are a few of the more generally excepted ones, based on research and anecdotal evidence.

*Limited Management Expertise* Given that there are often only one or two individuals responsible for the whole gamut of business decisions required, (including planning, marketing and personnel related decisions), proprietors must either aim to have a broad knowledge of all areas of management or draw upon external expertise. SME owner/managers must strive to obtain dual goals, to ply their trade and manage the business.

> Given that larger businesses often have in-house specialist staff to manage the various business functions, it is not surprising that the main reasons given for small business failure in Australia is management inexperience and incompetence.

Retaining

Quality Staff

| Independent<br>Enterprise        | The SME person is often driven by a desire to be economically<br>independent. A study by the Small Business Development<br>Corporation (SBDC) in June 1990, found that most small business<br>proprietors felt that the main advantages of operating a small<br>business were personal factors such as: freedom, independence,<br>flexibility and job satisfaction. SMEs provide the vehicle for<br>entrepreneurial spirit, which is manifested through the drive,<br>energy and motivation of their owner-managers. |
|----------------------------------|--|
| Innovative Nature                | Although SMEs face considerable barriers in introducing new<br>products to markets, they are often on the cutting edge of<br>innovation, able to fill niches untouched by larger businesses. The<br>ability of SMEs to respond quickly to changing markets and the<br>introduction of new technology, can often offset the disadvantage<br>that they lack the economies of scale available to larger firms.  |
| Difficulties in<br>Obtaining and | The inability of SMEs to offer career paths, and the high salaries often available from large firms, reportedly discourages skilled  |

The inability of SMEs to offer career paths, and the high salaries often available from large firms, reportedly discourages skilled labour from working for a smaller business. Minimum wages and award conditions, based on the circumstances existing in large firms, also make it difficult for smaller firms to employ staff.

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|   |
| TABLE 14.3 – SMALL BUSINESS EMPLOYMENT: AVERAGE         ANNUAL RATE OF CHANGE 1983-84 to 1989-90 (per cent) |
| Reference: Catalogue No. 1321.0   |

|  | Self-employed | Employers | Employees |
|--|---------------|-----------|-----------|
| Mining                                       | 11.0          | 14.6      | -0.1      |
| Manufacturing                                | 8.9           | 6.7       | 2.6       |
| Construction                                 | 13.6          | 8.3       | 3.5       |
| Wholesale trade                              | 3.6           | -1.7      | 1.7       |
| Retail trade                                 | 0.6           | 3.0       | 0.6       |
| Transport and storage<br>Finance, property   | 7.5           | 0.7       | 3.5       |
| and business services                        | 9.5           | 4.9       | 5.2       |
| Community services<br>Recreational, personal | 16.8          | 1.4       | 2.6       |
| and other services (a)                       | 6.7           | 10.1      | 2.6       |
| Total (b)                                    | 8.0           | 4.6       | 2.5       |

(a) Excludes private households employing staff. (b) Includes the Electricity, gas and water and Communication industries.

Access to Capital Access to finance under appropriate terms and conditions continues to be a significant barrier for many SMEs, despite the recent focus which has been given to the banking industry and capital availability. The smaller equity, insecure future, and lack of credit history can work to restrict the borrowing power of many smaller firms. Consequently, SMEs tend to take a short term view of investment which restricts their long term planning and growth. SME proprietors also frequently lack knowledge of the appropriate sources of development finance and working capital, and are generally unskilled in presenting a financial case to potential lenders and investors.

Limited Resources for Research, Advertising etc The severe resource constraints that SMEs experience, including modest marketing budgets and an inability to access economies of scale, often prevent them from undertaking activities such as market research, planning and effective marketing research. A major study by the SBDC into small firm marketing knowledge and practices found that small firms are usually of the opinion that such exercises are either too time consuming, too expensive, of little benefit, or less importance relative to other business activities.

- *Instability Inherent in Small Size* SMEs are often more susceptible to changing economic conditions, with tight cash flow and little room for error. Fortunately, their inherent flexibility often allows them to react quickly to restore equilibrium.
- Business RunSMEowner/managersgenerallyconducttheirbusinessIntuitivelypragmatically in preference to using formal plans. To support this<br/>contention, the Small Business Opinion Survey has consistently<br/>found that only a minority of small WA firms have developed<br/>either marketing or business plans.
- Differing Industrial Relations Practices Small firms are less likely to be unionised, have lower levels of staff turnover, lower rates of absenteeism, slightly higher rates of dismissal, less industrial action and have less formal employee-management relations. These points are not meant to be a complete assessment of how all SMEs behave. Rather, there is a stronger argument for the contention that no two SMEs are alike. The list does help to identify the many ways in which SMEs and their owner/managers differ from large organisations and their managers.

The above points also help to illustrate the need for small businesses to be given special attention by policy makers, business leaders and the wider community, dispelling old beliefs that SMEs are merely smaller versions of big business. This need for special attention has been increasingly recognised over the past decade, as those outside of this sector understand the vital role SMEs play in the Australian economy.

Performance of the<br/>Small BusinessRegarded by many as the "engine of the economy", research has<br/>indicated that the small business sector is the major generator of<br/>jobs. This capability is particularly important in times of economic<br/>downturn and high unemployment.

The resilience of small business employment over the recession is evidenced through findings from the Small Business Opinion Survey, which found that almost three quarters of the WA small business operators surveyed had either maintained or increased their staff numbers over the six months to November 1992. Additionally, 13 per cent of the sample had increased their staff by more than one employee.

### Survey of Small Business Opinion

(Reproduced by permission from The Institute for Small Business Research)

The Institute for Small Business Research is a cooperative of the Small Business Development Corporation, the four main tertiary bodies, the Western Australian branch of the Market Research Society of Australia, and the small business sector. Every six months, for the past three years, the Institute has undertaken a survey of small business opinion. Employing the skills of the Western Australian Labour Market Research Centre, the Institute has established a valuable assessment tool for monitoring small business concerns, achievements and opinions. The latest survey also saw the addition of questions pertaining to labour relation concerns and business research activities. The following represents a summary of some of the key findings of the November 1992 survey.

#### Main Findings of the November 1992 Survey

The results of this latest survey related to 452 valid responses received, representing a response rate of 21.9 per cent. Of these 452 respondents, the vast majority (87 per cent) were owner-managers of small business operations. Most were located in the Perth metropolitan area (76.5 per cent), and 11 per cent of responses were from country locations. Given 75.2 per cent of all small firms are located in the metropolitan area (Australian Bureau of Statistics (ABS) Business Register, February 1992), it is considered that the sample is representative in terms of geographic location. Most responses came from the retail trade, building and construction, and manufacturing sectors.

Based on ABS data, the sample represents a slight over-representation of manufacturers, and an under-representation of individuals within the transport and storage, and business services industries. While these variances are not significant in the context of an opinion survey, the information is offered as a guide to readers.

#### Hours Worked

The majority of those surveyed (89.7 per cent) worked in excess of 40 hours per week with 36.7 per cent indicating they work between 40 and 50 hours, and an additional 30.5 per cent claiming their business takes up between 51 and 60 hours of their time weekly. Over one in five respondents (22.5 per cent) indicated they work in excess of 61 hours week.

#### **Promotion and Planning**

The survey found that around one in five businesses reported having a fully documented business plan, while less than one in seven (15 per cent) maintain a comprehensive marketing plan. Two thirds (66 per cent) of respondents spend less than 5 per cent of their budget on promotion, while over one quarter (26 per cent) spend between 5 and 10 per cent.

#### **Employee Statistics and Training**

Most of those surveyed (64 per cent) employ fewer than five people, while a further 22 per cent employ between 6 and 10 people. These figures compare with ABS statistics, which indicate that around 62.2 per cent of Australian small firms employ five or fewer people.

Employment figures in the six months preceding the latest survey were stable when viewed in total, with over half (56 per cent) of the respondents indicating no change to employment levels, 24 per cent indicating an increase, and 20 per cent reporting a decrease.

#### **Utilisation of Business Research**

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Around one in five respondents (19.5 per cent) indicated they had undertaken a form of business research in the six months prior to November 1992. The most common form of research undertaken by these respondents, was done by the owner-managers themselves (72 per cent), while 9 per cent employed the services of a professional research firms, and one in five (20.5 per cent) indicated they used a combination of professional and their own research.

#### Labour Relations Issues

The survey findings indicated that the most pressing labour relations concern for respondents was finding the "right" staff. Labour costs were the next most prominent concern cited, followed by (in descending order) occupational health and safety, unions, staff discipline and dismissal, and the availability of relevant training.

#### **Business Strengths**

Respondents were asked to indicate the factors which they consider to be most important for success and efficiency within their business. The most popular responses given (in descending order) were:

the need for good customer relations; high quality goods and services; effective financial management; the need for experience, good management and specialisation; effective business planning (including market research and effective advertising); access to finance; and good staff and good industrial/employee relations.

Respondents were also asked to indicate which factors where likely to limit their volume of business activity. The most common response was the cost of labour, followed by finding new markets, present level of orders, government regulations, the lack of political influence, and dealing with government bodies. These results closely resemble the findings of the previous surveys indicating the constraints are consistent and enduring among members of the small business community.

#### Expectations

The expectations held by respondents for the six months to May 1993 are reasonably positive, suggesting a degree of optimism among small firms concerning future trends in business conditions.

#### Conclusions

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The results of the sixth Small Business Opinion Survey add to the growing data base of knowledge being collected by the Institute, which allows for the development of an accurate trend analysis of the state of small business in Western Australia.

# Manufacturing

The manufacturing industry in Western Australia is heavily concentrated in the South-West of the State. The production of food and beverages and the processing of mineral products are the most valuable industries.

Historically, manufacturing in Western Australia was centred around processing of local raw materials to produce meat, milk, seafood, wood, clay and cement products for both local consumption and export.

While these industries still remain important, the development in recent decades of the State's enormous mineral wealth and the availability of cheap, plentiful energy in the form of natural gas have seen the emphasis switch to value-added processing of minerals such as alumina and nickel for export. More recent mineral-related developments include expansion of gold and alumina refining capacities, the establishment of a silicon smelter and several projects related to downstream processing of mineral sands.

Concurrent with these developments and the strong growth in the mining industry (particularly in the gold and oil and gas sectors) has been the growth of manufacturing industries involved in the construction and servicing of new resource projects, especially in the fabrication and machinery and equipment sectors. Industrial chemicals for the resource industry, such as sodium cyanide, caustic soda, chlorine and ammonium nitrate are also now being produced locally.

Manufacturing activity is largely centred in the Perth metropolitan area. Heavy industry is chiefly located at Kwinana, with other important industrial areas in Canning Vale, Osborne Park, Balcatta, Kewdale, Welshpool and O'Connor. Increased decentralisation of industry to areas like Kemerton, near Bunbury, is being encouraged.

Department of The Western Australian Government body now responsible for encouraging the establishment of new industries, is the Department of Commerce Trade and and Resources Development, was established in 1993, and replaced the Department of State Development.

The Department aims to:

foster an environment for sustainable development within the State by providing policy advice to Government and by strategic planning of economic progress

Commerce and Trade and Resources Development

- assist Western Australian industry to improve its competitiveness and productivity at the enterprise level and the broader sector level
- secure development projects of economic significance to the State through negotiations with developers. It coordinates the public decision-making processes and prepares and monitors agreements, and
- coordinates the provision of government services to regions.

ManufacturingThe 1988-89 Census of Manufacturing Establishments shows that<br/>the Perth Statistical Division had about eighty-two per cent of all<br/>manufacturing establishments, eighty-five per cent of<br/>manufacturing employment and eighty-two per cent of turnover.<br/>The South-West Statistical Division, where several of the State's<br/>larger mineral and timber processing establishments are located,<br/>was the only other region with a significant proportion of<br/>manufacturing activity.

Factories employing fewer than twenty persons accounted for over seventy-eight per cent of establishments. However, the large establishments employing more than 100 persons, which comprised only three per cent of establishments, contributed forty-two per cent of employment, forty-nine per cent of wages and salaries and fifty-one per cent of turnover.

Despite the recent growth in Western Australia's manufacturing sector, the State's contribution to Australian manufacturing statistics was relatively small. The Non-metallic mineral products industry and the Fabricated metal products industry achieved the highest growth in turnover, increasing by 18.7 per cent and 16.5 per cent respectively, compared with the previous year. The Western Australian industries that made the smallest contribution at the national level, were the Clothing and footwear, Textiles and Transport equipment industries.

At the ASIC sub-division level, Food, beverages and tobacco and Basic metal products made the largest contributions to turnover in 1988-89. Industries with the largest turnover per person employed in 1988-89 were recorded in the Basic metal products and Chemical, petroleum and coal products divisions. A wide range of manufactured commodities is produced in Western Australia, as indicated in Table 14.4. It should be noted that details of quantities produced for many other significant commodities are confidential or not collected, and therefore are not available for release. However, they are included in total Australian production.

In 1988-89, persons employed in Western Australia's manufacturing industry accounted for twelve per cent of the employed labour force.

| Commodity                     | Unit      | 1988-89 | 1989-90  | 1990-91 | 1991-92 |
|-------------------------------|-----------|---------|----------|---------|---------|
| Aerated and carbonated waters | '000 L    | n.p.    | 140,679  | 145,679 | 147,249 |
| Alumina (b)                   | ′000 t    | 6,172   | 6,651    | 6,800   | 7,129   |
| Bacon and ham                 | tonnes    | 9,384   | 9,937    | 10,674  | 9,974   |
| Butter (c)                    |           | 1,139   | 1,339    | 1,477   | 1,989   |
| Cheese (c)                    |           | 3,586   | 4,129    | 5,258   | 5,380   |
| Footwear                      | pairs     | 304,384 | 363,089  | 319,456 | 311,387 |
| Ice cream                     | 'ÓOO L    | n.p.    | n.p.     | 19,412  | 23,295  |
| Inedible tallow               | tonnes    | 30,647  | 38,400   | 38,049  | 29,727  |
| Paints                        | '000 L    | 7,425   | 8,773    | 8,027   | 8,050   |
| Ready-mixed concrete          | ′000 cu m | 1,642   | 1,400    | 1,042   | 999     |
| Rock lobster tails            | tonnes    | 3,545   | r1,994   | 1,098   | 1,515   |
| Scoured wool from             |           |         |          |         |         |
| greasy shorn wool             | "         | 22,921  | 19,475   | 22,815  | 27,320  |
| Stock and poultry foods—      |           |         |          |         |         |
| Meat and bone meal            |           | 35,621  | 45,673   | 44,875  | 39,098  |
| Prepared stock and poultry fo | od "      | 439,763 | r342,643 | 311,719 | 306,851 |
| Solar collectors              | sq m      | 91,787  | 86,244   | n.p.    | n.p.    |
| Terracotta and concrete tiles | ′000 sq m | r4,260  | 4,127    | 2,733   | 2,977   |
| Timber (d)—                   |           |         |          |         |         |
| Local logs sawn               | cu m      | 990,346 | 955,193  | 792,218 | 770,784 |
| Sawn timber produced          | 11        | 342,905 | r354,645 | 263,389 | 259,376 |
| -                             |           |         |          |         |         |

TABLE 14.4 - PRODUCTION OF SELECTED COMMODITIES (a) (Includes quantities produced and used in own establishment) Reference: Catalogue No. 1305.5

(a) Data from ABS sources exclude production by single establishment manufacturing enterprises employing fewer than four persons and establishments predominantly engaged in non-manufacturing activities. (b) *Source*: Department of Mines. (c) *Source*: Australian Dairy Corporation. (d) Derived from data supplied by the Department of Conservation and Land Management.

# Retail and Wholesale Trade

| Wholesale Trade | Wholesale trade is described as the resale of new or used goods<br>to retailers and other business users (including farmers, builders,<br>government and professional bodies).   |
|-----------------|--|
| Retail Trade    | Retail trade is described as the resale of new or used goods to<br>final consumers for personal or household consumption. Detailed<br>information about the retail sector has been collected using<br>Censuses of Retail Establishments, the first of which was taken for<br>the year 1947-48. |
|                 | Eight censuses have been taken since then as part of the ABS program of rotating economic censuses. Results from each census are published for each State and Territory and for Australia as a whole. Survey of rotatil trade, which were introduced from 1956                                 |

whole. Surveys of retail trade, which were introduced from 1956, have enabled the production of estimates of retail trade on a less detailed but more frequent basis.

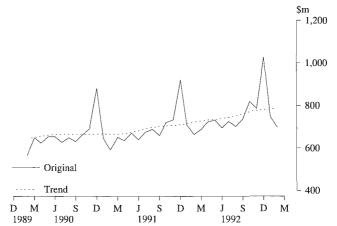
Census of Retail Establishments The most recent census was taken for the year ended 30 June 1986 and included all establishments classified to the Retail Trade subdivision of the Australian Standard Industrial Classification (ASIC), excluding bread and milk vendors, shoe repairers and electrical appliance repairers not elsewhere classified. Builders hardware dealers were included for the first time. The next retail census will be conducted in 1992-93 and will relate to the year ending 30 June 1992.

Survey of RetailSince 1956, intercensal estimates of the value of retail sales have<br/>been produced by means of sample surveys. Surveys were<br/>initially conducted quarterly but are now conducted on a monthly<br/>basis. The surveys are reviewed periodically, generally to account<br/>for changes reflected in the results of each retail census.

The survey conducted since June 1988 is based on the results of the 1985-86 Retail Census and produces estimates of 'turnover' by retail establishments rather than the narrower estimates of 'retail sales'. The surveys are conducted monthly, (quarterly prior to April 1982), and estimates are published in *Retail Trade, Australia* (Catalogue No. 8501.0).

Estimates of turnover, (in original current price terms), by industry group for 1988-89 to 1990-91 are provided in table 14.5. Diagram 14.1, covering the period December 1989 to March 1993, illustrate the seasonal nature of retail turnover, the long term upward trend in retail turnover and the monthly variations that can occur. Data is presented as trend estimates in current price terms.

> DIAGRAM 14.1 RETAIL TURNOVER WESTERN AUSTRALIA



| (\$ million)<br>Reference: Catalogue No. 8501.0 |         |         |         |  |  |
|---|---------|---------|---------|--|--|
| Industry group                                  | 1989-90 | 1990-91 | 1991-92 |  |  |
| Grocers, confectioners,                         |         |         |         |  |  |
| tobacconists                                    | 2,430.0 | 2,643.4 | 2,938.8 |  |  |
| Butchers  | 84.8    | 64.7    | 77.3    |  |  |
| Other food stores                               | 516.7   | 650.6   | 685.2   |  |  |
| Hotels, liquor stores,                          |         |         |         |  |  |
| licensed clubs                                  | 962.8   | 896.6   | 878.9   |  |  |
| Cafes and restaurants                           | 386.6   | 441.4   | 513.5   |  |  |
| Clothing and fabric stores                      | 458.3   | 414.8   | 474.7   |  |  |
| Department and general stores                   | 917.5   | 916.7   | 980.1   |  |  |
| Footwear stores                                 | 89.6    | 84.3    | 92.5    |  |  |
| Domestic hardware stores,                       |         |         |         |  |  |
| jewellers                                       | 202.3   | 201.2   | 245.3   |  |  |
| Electrical goods stores                         | 521.9   | 470.3   | 452.8   |  |  |
| Furniture stores                                | 121.6   | 130.8   | 164.6   |  |  |
| Floor coverings stores                          | 91.7    | 71.1    | 71.6    |  |  |
| Pharmacies                                      | 330.4   | 345.2   | 370.3   |  |  |
| Newsagents                                      | 233.2   | 229.6   | 192.3   |  |  |
| Other   | 397.0   | 412.4   | 459.6   |  |  |
| Total   | 7,745.0 | 7,972.6 | 8,597.2 |  |  |

#### TABLE 14.5 – RETAIL TURNOVER ANNUAL ESTIMATES AT CURRENT PRICES, BY INDUSTRY GROUPS (a) 1989-90 TO 1991-92 (\$ million)

(a) Excludes motor vehicle dealers, petrol and tyre retailers.

Service Industries The 1986-87 Service Industries Survey covered ten personal and travel related industries. Seven of these were also part of the 1979-80 Census of Retail and Selected Services Industries allowing for some comparisons between the two periods. These industries were motion picture theatres, cafes and restaurants, hotels (mainly drinking places), accommodation, licensed clubs, laundries and dry cleaners, and hairdressers and beauty salons. Data for motor vehicle hire, travel agency services, and photography services were collected for the first time.

Service Industry Surveys The 1987-88 Service Industries Survey covered twelve professional and business related industries. These industries were Legal services, Accounting services, Real estate agents, Architectural services, Surveying services, Engineering and technical services, Computing services, Advertising services, Pest control services, Cleaning services, Debt collection and credit reporting services, and Security/Protection and other business services.

> The industries included for the first time in the 1986-87 survey and the industries surveyed in 1987-88 have not previously been studied in this detail by the ABS, so comparisons with earlier statistics are not possible. Detailed statistics for each of the industries covered, plus a number of "sub-industries", are available from the publications listed at the end of this chapter.

| Industry  | Enterprises<br>operating (a)                                     | Persons<br>employed (a)  | Turnover  | Net operating<br>surplus (b)                       |
|---|--|--|---|--|
|   | No.  | No.  | \$m   | \$m  |
|   | 1986-87  |  |   |  |
| Hotels, etc (mainly drinking places)<br>Licensed clubs<br>Cafes and restaurants<br>Accommodation<br>Travel agency services<br>Motor vehicle hire<br>Hairdressers and beauty salons<br>Laundries and dry cleaners<br>Photography services<br>Motion picture theatres | 418<br>346<br>636<br>351<br>209<br>41<br>839<br>128<br>126<br>17 | 8,210<br>2,516<br>7,267<br>4,829<br>1,057<br>324<br>3,756<br>1,151<br>321<br>542 | 469.3<br>109.6<br>226.4<br>171.6<br>34.7<br>(c)34.0<br>70.0<br>36.8<br>13.7<br>25.8 | 40<br>8<br>19<br>n.a.<br>n.a.<br>11<br>5<br>2<br>3 |
|   | 1987-88  |  |   |  |
| Legal services<br>Accounting services<br>Real estate agents (d)<br>Architectural services<br>Surveying services<br>Engineering and technical services<br>Computing services (f)<br>Advertising services<br>Debt collecting and credit                               | 262<br>538<br>678<br>495<br>113<br>696<br>241<br>126             | 3,394<br>4,791<br>3,427<br>1,867<br>978<br>4,548<br>1,262<br>786                 | 202<br>228<br>231<br>120<br>61<br>266<br>76<br>287                                  | 53<br>51<br>35<br>(e)11<br>36<br>(e)4<br>(e)8      |
| reporting services<br>Pest control services<br>Cleaning services<br>Security/protection and other   | 16<br>66<br>405  | 220<br>549<br>3,020  | 11<br>23<br>(e)55   | 1<br>4<br>9  |
| business services   | 54   | 1,404  | 44  | 5  |

#### TABLE 14.6 – SELECTED SERVICES INDUSTRIES: PERSONAL AND TRAVEL RELATED INDUSTRIES: SUMMARY OF OPERATIONS Reference: Catalogue Nos. 8652.0-8660.0 and 8662.0-8673.0

(a) At 30 June. (b) This item is a measure of turnover less business expenses except for non-operating expenses (e.g. interest) and can be considered a basic measure of profit for an industry. (c) State turnover figures are not available for this industry; \$34 million relates to takings from rental cars which accounts for the major portion of total turnover. (d) Persons working solely on commission are excluded from the summary employment statistics for this industry. (e) Subject to sampling variability greater than 25 per cent. (f) Royalties and licence fees have not been included in these summary statistics.

#### Consumer Affairs

The Ministry of Consumer Affairs is the successor to the Bureau of Consumer Affairs which was established under the *Consumer Affairs Act 1981* and became the Department of Consumer Affairs in 1983.

The Ministry has as its corporate mission, the promotion and maintenance of fair trading. The earlier emphasis on consumer protection has developed into a concern for the trading environment as a whole, with services provided for both traders and consumers.

The Ministry structure reflects its changing role. In addition to Executive and Legal services, the Ministry comprises three Divisions: Policy and Corporate Services; Education and Consumer Services; and Industry Standards.

Policy and Corporate

Register of Encumbered

Vehicles

Services

|   | Number o | ints    |         |
|---|----------|---------|---------|
| Product classification                                    | 1989-90  | 1990-91 | 1991-92 |
| Food, beverages, tobacco                                  | 151      | 139     | 93      |
| Clothing, footwear, drapery                               | 221      | 221     | 160     |
| Clothing, footwear, drapery<br>Appliances and furnishings | 1,018    | 944     | 811     |
| Motor vehicles and transport                              |          |         |         |
| equipment   | 1,976    | 1,760   | 1,542   |
| Building and construction                                 | 1,064    | 822     | 721     |
| Miscellaneous products                                    | 498      | 492     | 386     |
| Transport and energy services<br>Insurance and finance    | 405      | 313     | 321     |
| Insurance and finance                                     | 954      | 1,002   | 793     |
| Real estate and accommodation                             | 916      | 992     | 688     |
| Miscellaneous services                                    | 981      | 1,083   | 1,011   |
| Not specified   | 75       | 126     | 119     |
| Total   | 8,259    | 7,894   | 6,645   |

#### TABLE 14.7 – MINISTRY OF CONSUMER AFFAIRS SUMMARY OF PRODUCT COMPLAINTS RECEIVED 1989-90 TO 1991-92

Source: Ministry of Consumer Affairs.

The Policy and Corporate Services Division provides the internal support functions essential for program delivery. It also provides administrative support to the Commercial and Small Claims Tribunals.

A Register of Encumbered Vehicles (REVS) maintains details of financial interests in motor vehicles and unlicensed farm machinery to assist prospective purchasers and financiers.

A policy unit within this Division assesses the need for legislative review and other policy measures such as the development of Codes of Practices designed to promote fair trading.

*Education and Consumer Affairs Division* The Education and Consumer Services Division is responsible for informing and educating both traders and consumers about their respective rights and responsibilities.

> Emphasis is placed on providing consumers with skills to negotiate satisfactory resolutions to problems encountered in the trading environment. Advice and conciliation assistance is offered to individuals unable to resolve particular issues.

*Prices Monitoring* The Prices Monitoring Unit located in this Division, researches and publishes information about the prices of various goods and services.

*Industry Standards* The Industry Standards Division provides support to the Occupational Licensing Boards and the Commercial Tribunal in occupational licensing matters.

*Trade Measurement Unit* The Trade Measurement Unit within the division enforces the use of uniform standards of measurement for goods sold by measure and provides assurance that measuring instruments can be verified to international standards.

Officers of the unit also investigate product safety complaints and recommend the imposition of bans on potentially unsafe goods.

Retail Trading Branch The Retail Trading Branch monitors compliance with trading bound by trading bound by the second by the second bound by the s

### Transport

**Road Transport** The Main Roads Department is the principal road authority in Western Australia. In conjunction with local government authorities, it is responsible for the planning, design, construction and maintenance of the State road network.

The basis of the Western Australian road system is a series of declared highways and main roads which are the responsibility of the Department.

These highways and roads carry traffic to major internal centres and interstate. Other connecting or local roads, declared as secondary or unclassified, are controlled by local councils.

Road statistics at 30 June 1992 were: Highways 8,232 kilometres; Main Roads 7,493 kilometres; Secondary Roads 8,397 kilometres; Unclassified Roads 116,854 kilometres; State sealed road length totalled 43,031 kilometres. Excluded from these statistics are forestry roads, which are the responsibility of the Department of Conservation and Land Management and total 29,222 kilometres.

A comprehensive route numbering system for roads was established in Western Australia during 1986. The system consists of forty-eight State routes in the metropolitan area and twenty-five in the country.

Perth now has 41.8 kilometres of freeway from Forrest Road, Jandakot to Ocean Reef Road, Edgewater. A reserved bus lane was opened on the Kwinana Freeway in December 1989 to improve access for public transport to Perth. Upgrading of the Eyre, Great Northern and North-West Coastal Highways is continuing. Other road developments include the construction of bypass and arterial or perimeter routes in major metropolitan and country areas.

#### **Motor Vehicles**

Registration and Licensing The responsibility for the registration and licensing of vehicles and the licensing of motor vehicle drivers has been delegated to the Commissioner of Police by the Traffic Board of Western Australia.

The Traffic Board is responsible for the collection and analysis of road traffic accident statistics, and research into the causes and prevention of road traffic accidents.

### Transport Deregulation

#### Contributed by the Department of Transport

Every year, trains, trucks, ships and planes carry 1.5 billion tonnes of freight around Australia — equivalent to moving 23,000 gigantic passenger liners the size of the QE2.

Western Australian households spend 14 cents in every dollar on transport. Because of its importance to the economy, transport has been a focus for microeconomic reform policies at both the national and State levels.

These policies have exposed transport services to greater competition and have facilitated change.

One major change during 1992-93 was the abolition of most licence requirements and fees for road transport.

Land transport regulation was originally designed to protect the rail system but, in the past five years, transport reforms and greater rail efficiencies cut more than \$60 million off the State's annual land transport freight bill.

There had been progressive deregulation of land transport since the 1980's resulting in freedom of transport choice for general freight, wool, grain and fertiliser but, until this year, transporters were still required to gain a Commercial Goods Vehicle Licence (CGVL).

With effect from 1 July 1992, the need for transporters to apply for a permit under the CGVL scheme was abolished for all goods except major bulk traffic such as coal, mineral sands, bauxite and nickel.

Savings to the road transport industry of abolishing the permits and their accompanying fees were estimated to total \$3.5 million a year.

|   | 1990                                    | 1991                                    | 1992                                    |
|---|---|---|---|
| NEW MOTOR V<br>Year   | EHICLE RE                               |   |   |
| Motor cars and station wagons<br>Utilities and panel vans<br>Trucks and buses<br>Motor cycles | 42,728<br>7,625<br>6,110<br>2,875       | 36,926<br>6,507<br>4,367<br>2,784       | 41,979<br>7,664<br>1,909<br>1,814       |
| Total   | 59,338                                  | 50,584                                  | 53,366                                  |
|   | .ES ON REG<br>At 30 June                | ISTER                                   |   |
| Motor cars and station wagons<br>Utilities and panel vans<br>Trucks and buses<br>Motor cycles | 746,194<br>146,677<br>107,332<br>37,452 | 764,157<br>149,095<br>110,151<br>38,240 | 781,600<br>150,086<br>112,208<br>37,816 |
| Total   | 1,037,655                               | 1,061,643                               | 1,081,71                                |

### TABLE 14.8 - MOTOR VEHICLE REGISTRATIONS References: Catalogue Nos. 9304.5, 9305.5

#### Surveys of Motor Vehicle Usage

A survey of motor vehicle use is undertaken by the ABS every three years. The latest survey results relate to the twelve months ended 30 September 1991. The survey was based on a sample of approximately 67,000 vehicles across Australia (7,000 vehicles in Western Australia) of which 75 per cent were trucks and other commercial vehicle types.

#### TABLE 14.9 – ANNUAL KILOMETRES TRAVELLED (a) YEAR ENDED 30 SEPTEMBER 1991 (Million kilometres) Reference: Catalogue No. 9208.0

|                    |                                  | Area of travel   |                 |          |  |
|--------------------|----------------------------------|------------------|-----------------|----------|--|
| Vehicle type       | Perth<br>Statistical<br>Division | Rest<br>of State | Inter-<br>state | Total    |  |
| Passenger vehicles | 8,230.3                          | 3,394.4          | 150.1           | 11,774.8 |  |
| Light commercial   |                                  |                  |                 |          |  |
| vehicles           | 1,259.4                          | 1,510.6          | 57.6            | 2,827.6  |  |
| Rigid trucks       | 344.0                            | 337.2            | 2.0             | 683.2    |  |
| Articulated trucks | 73.1                             | 282.7            | 38.0            | 393.8    |  |
| Other truck types  | 7.9                              | 4.9              | _               | 12.8     |  |
| Buses              | 88.5                             | 73.0             | 6.6             | 168.1    |  |
| Motor cycles       | 121.6                            | 78.8             | 8.6             | 209.0    |  |
| Total              | 10,125.0                         | 5,681.7          | 262.9           | 16,069.3 |  |

(a) Vehicles registered in Western Australia

|                           | Fuel con |        | Tonnes    |         |                      |
|---------------------------|----------|--------|-----------|---------|----------------------|
| Vehicle type              | Petrol   | Diesel | Other (b) | Total   | carried<br>(million) |
| Passenger vehicles        | 1,255.7  | 92.2   | 45.9      | 1,393.7 |                      |
| Light commercial vehicles | 260.9    | 106.6  | 17.7      | 385.3   | 18.8                 |
| Rigid trucks              | 23.3     | 162.0  | 2.9       | 188.2   | 65.7                 |
| Articulated trucks        | 0.4      | 216.3  | _         | 216.7   | 49.2                 |
| Other truck types         | 2.3      | 0.8    | 0.3       | 3.3     | _                    |
| Buses                     | 2.5      | 44.6   | 0.0       | 47.1    | _                    |
| Motor cycles              | 11.6     | _      | _         | 11.6    | _                    |
| Total                     | 1,556.7  | 622.5  | 66.8      | 2,245.9 | 133.7                |

#### TABLE 14.10 – FUEL CONSUMPTION AND TONNES CARRIED (a) YEAR ENDED 30 SEPTEMBER 1991 Reference: Catalogue No. 9208.0

(a) Vehicles registered in Western Australia. (b) Including LPG and dual fuelled.

#### Bus and Ferry Services

*Transperth Buses* The Metropolitan (Perth) Passenger Transport Trust (Transperth), has overall responsibility for all of Perth's metropolitan public transport (bus, ferry and train) services. The metropolitan area is designated as being within a fifty kilometre radius of the Perth Town Hall, as well as the area west of the South-West Highway between Perth and Pinjarra.

Busport The new Busport in the City of Perth was opened in November 1991. It services Perth's southern suburbs and connects directly with the bus lane on the Kwinana Freeway. It complements the existing Bus Station in Wellington Street, Perth, which services Perth's northern suburbs.

|  | 1989-90                      | 1990-91                      | 1991-92                      |
|--|------------------------------|------------------------------|------------------------------|
|  | BUSES                        |                              |                              |
| Number (b)<br>Route kilometres<br>Bus kilometres (millions)<br>Passenger boardings (millions)  | 906<br>1,867<br>47.3<br>54.4 | 917<br>1,876<br>48.2<br>53.7 | 923<br>1,911<br>48.7<br>51.2 |
|  | FERRIES                      |                              |                              |
| Number (b)<br>Route kilometres<br>Kilometres run (thousands)<br>Passenger boardings (millions) | $4 \\ 1.3 \\ 46 \\ 0.6$      | $3 \\ 1.3 \\ 44 \\ 0.5$      | $3 \\ 1.3 \\ 42 \\ 0.6$      |

#### TABLE 14.11 – TRANSPERTH BUS AND FERRY SERVICES (a)

(a) Includes private charter and tourist services and, in the case of buses, clipper and school specials. (b) At 30 June.

Source: Metropolitan (Perth) Passenger Transport Trust

# *Transperth Ferries* Transperth operates a regular ferry service on the Swan River between Perth and South Perth, as well as a tour to Tranby House. Buses and ferries are also available for charter from Transperth.

- *Private Ferries* A number of privately owned ferry companies operate tours to the wine growing regions of the Swan River as well as river and harbour cruises around Perth and Fremantle, and trips to Rottnest Island.
- **Country Bus** Road transport of passengers outside the metropolitan area is Services provided by railway road services (see the section 'Rail Services') and privately operated bus services. Railway coach services operate in the southern part of the State (a private company Westrail the Perth-Augusta competes with on and Perth-Pemberton routes) and privately operated bus services cater predominantly for those areas north of Geraldton. Privately operated express bus services operate a restricted service between Perth and Kalgoorlie.

Bus services are provided in a number of the larger country towns by private operators, although in the Kalgoorlie-Kambalda-Boulder region services are undertaken by the Eastern Goldfields Transport Board. In certain country areas, private operators run school bus services under Government contract, taking country children to and from school.

Taxi ServicesThe Taxi Control Board controls the operations of taxis in the<br/>Perth Metropolitan Traffic Area and other designated areas. The<br/>Department of Transport is responsible for taxi operations in<br/>country areas.

In addition to unrestricted taxis, private taxi-cars (luxury type vehicles used mainly for VIP work and tours where a chauffeur driven limousine is required) are licensed to cater for demand for this type of vehicle.

| TABLE 14.12 – L | ICENSED TAXI | <b>CARS: 30</b> | JUNE 1992 |
|-----------------|--------------|-----------------|-----------|
|-----------------|--------------|-----------------|-----------|

|                                      | Number |
|--------------------------------------|--------|
| Metropolitan area—                   |        |
| Metropolitan area—<br>Metered taxis— |        |
| Unrestricted                         | 899    |
| Multi-purpose<br>Area restricted     | 6      |
| Area restricted                      | 7      |
| Private                              | 25     |
| Total                                | 937    |
| Country areas                        | 306    |

Source: Taxi Control Board, (State) Department of Transport

Commerce

To provide for peak demand and 'special event' situations, Temporary and Restricted Hour taxi licences are issued. Restricted Areas licences are issued for areas that would otherwise be poorly serviced. Multi-purpose taxis, for use primarily by disabled people, may also be licensed.

- **Bicycle Services** In the metropolitan area and regional centres of Western Australia, a range of bicycle facilities have been developed to cater for the growing number of pedal cyclists.
- Bikewest Bikewest (comprising the State Bicycle Committee and a Bicycle Management team) was established by the government to develop and implement bike plans with assistance from local groups. It was originally part of the Department of Local Government, however, in recognition of the role of the bicycle as a legitimate and increasingly popular means of transport, Bikewest was transferred to the Department of Transport in September 1990.

### Bicycles in Western Australia

#### Contributed by the Department of Transport

Nearly half of all Western Australians own or ride a bike at least once a week.

These are the sort of statistics which encourage cycling enthusiasts and their supporters to continually press for improved services for cyclists — and their pressure is working.

A total \$1.5 million was allocated in 1992-93 on extending cycleway access to the Perth central district and in new urban developments. In May 1992, a prominent international cycling magazine, "Bicycling", commended Perth for its "fine road system and great bike maps" and listed the city as one of the top eleven cycling cities in the world.

It has been estimated that the number of bicycle trips per day could double from the present 180,000 to 360,000 by the Year 2000 and double again to 660,000 by the Year 2020.

Transport planners argue that, in the future, facilities for cyclists must form continuous routes suitable for regional and local travel; form networks rather than being isolated facilities serving a single purpose, such as travel to the local school; be suitable for cycling at typical adult speeds and be integrated with road and other traffic planning.

The Department of Transport's "Bikewest" agency is currently working on its Plan 21 designed to identify opportunities to significantly improve the availability of safe and quick routes for cyclists between suburbs.

Bikewest services the rapid growth in bicycle use by improving the standard of existing bicycle facilities and assisting in funding, the construction of new facilities. It also conducts encouragement and education programs and produces and/or distributes a range of cycling related brochures, maps and reports.

- *Bicycle Helmets* From 1 July 1992, it has been compulsory for all bicycle riders to wear an Australian Standards approved helmet. Bikewest administers a school based rebate scheme which enables cycle helmets to be purchased at about one third of the normal retail cost.
- Westrail Westrail is the trading name of the Western Australian Government Railway Commission, a statutory authority which competes in the freight, passenger and related transport markets in southern Western Australia. The system is linked with railways in other States at Kalgoorlie where it joins Australian National Railways.

|  | 1989-90        | 1990-91        | 1991-92        |
|--|----------------|----------------|----------------|
| Kilometres of railway (a)—<br>Route kilometres<br>Track kilometres | 5,554          | 5,554          | 5,554          |
|  | 6,962          | 6,961          | 6,952          |
| Kilometres run ('000)—<br>Train<br>Road bus (b)                    | 8,212<br>2,745 | 7,731<br>2,926 | 7,549<br>3,019 |
| Passenger journeys ('000)—<br>Rail<br>Road (b)                     | 336<br>186     | 309<br>193     | 268<br>192     |
| Tonnes carried ('000) (c)  | 24,906         | 24,410         | 25,890         |

#### TABLE 14.13 – WESTRAIL SERVICES

(a) Excludes suburban rail, charter and tourist services. (b) In addition to its rail services, Westrail operates a system of road services for passengers and freight. (c) Paying goods only.

Source: Westrail.

At 30 June 1992, there were 5,554 kilometres of railway owned and operated by Westrail, with a further 655 kilometres of rail in Western Australia owned by the Commonwealth Government and operated by Australian National Railways.

Westrail's passenger services are operated with interstate and country trains and country road services. The Perth metropolitan rail service is owned by Westrail and operated under contract to Transperth.

Electrification of the suburban rail network is currently underway. The first electric service commenced between the city and Armadale in mid 1991, with the Midland and Fremantle routes following in late 1991.

A new line extending northward from Perth to Joondalup was opened in March 1993 to cater for the rapidly expanding northern suburbs.

|                         | Unit | 1989-90 | 1990-91 | 1991-92 |
|-------------------------|------|---------|---------|---------|
| Rail cars and carriages | No.  | 97      | 81      | 46      |
| Route kilometres        | "    | 63      | 63      | 63      |
| Train kilometres        | m    | 2.7     | 2.5     | 2.6     |
| Passenger boardings     | "    | 8.9     | 8.0     | 9.7     |

#### TABLE 14.14 - SUBURBAN RAIL SERVICES

Source: Metropolitan (Perth) Passenger Transport Trust

*Mining Company Railways* The exploitation of extensive inland deposits of iron ore in Western Australia has necessitated the construction of private railways for the transport of ore from the mines to the coast. Conditions applying to the construction and operation of these railways are incorporated in agreements made between the State Government and mining companies.

> Private railways operate from Newman to Port Hedland, Paraburdoo to Dampier, Shay Gap to Port Hedland and Pannawonica to Cape Lambert.

- *Tourist Railways* A number of private organisations operate tourist railways in the *and Tramways* South-West of the State, principally on lines owned and maintained by Westrail. The tourist railways own the steam locomotives used on the tourist services. A tourist tramway operates in the south-west of the State between Pemberton and Northcliffe.
- Air Services An extensive system of regular air services operates in Western Australia for the transport of passengers, freight and mail. Perth has frequent and direct links with major Western Australian regional centres, other Australian capital cities and Alice Springs.

There are also direct overseas links which include Europe, Asia, Africa and New Zealand. Pacific and American connections are made via the Eastern States. Port Hedland, the second international airport in Western Australia, has direct international links with Indonesia.

*Civil Aviation Authority* The Civil Aviation Authority has responsibility for setting safety standards and day to day regulatory control of air services throughout Australia as well as operational responsibility for air traffic control, flight advisory services, communication, navigation and surveillance systems and rescue and fire fighting services at airports.

|   | 1989  | 1990  | 1991   |
|---|---|---|--|
|   | DOMESTIC  |   |  |
| Adelaide<br>Alice Springs<br>Brisbane<br>Cairns<br>Melbourne<br>Sydney              | 180,676<br>23,891<br>168<br>7,979<br>328,228<br>237,944             | 235,864<br>38,518<br>229<br>10,851<br>429,928<br>278,403            | 283,521<br>31,560<br>12,081<br>27,485<br>708,881<br>472,949          |
|   | INTERNATIONA  | L   |  |
| Auckland<br>Bangkok<br>Denpasar<br>Hong Kong<br>Kuala Lumpur<br>London<br>Singapore | 75,498<br>55,751<br>91,685<br>55,267<br>72,135<br>72,732<br>282,337 | 73,830<br>63,079<br>97,451<br>59,807<br>77,425<br>76,839<br>294,189 | 66,894<br>41,954<br>100,262<br>62,163<br>82,389<br>71,732<br>287,241 |

#### TABLE 14.15 — PASSENGER TRAFFIC BETWEEN PERTH AND PRINCIPAL AIRPORTS (a)

(a) Total of embarkations and disembarkations.

*Air Safety* The Bureau of Air Safety Investigations investigates aircraft *Investigations* accidents and incidents involving civil aircraft in Australia.

*Federal Airports Corporation* The Federal Airports Corporation is responsible for the operations at Perth and Jandakot airports, including the Perth International Terminal which is located twelve kilometres from the domestic terminal.

| TABLE 14.16 – PASSENGER | AND AIRCRAFT MOVEMENTS | AT PRINCIPAL AIRPORTS |
|-------------------------|------------------------|-----------------------|
|                         |                        |                       |

|               |           | Passengers (a) |           |        | Aircraft movements (b) |        |  |
|---------------|-----------|----------------|-----------|--------|------------------------|--------|--|
| Airport       | 1989      | 1990           | 1991      | 1989   | 1990                   | 1991   |  |
| Broome        | 48,258    | 63,402         | 65,892    | 2,148  | 2,617                  | 2,565  |  |
| Carnarvon     | 13,077    | 15,097         | 16,737    | 683    | 879                    | 908    |  |
| Derby         | 23,890    | 27,732         | 23,108    | 1,621  | 2,014                  | 1,620  |  |
| Geraldton     | 30,031    | 32,378         | 26,187    | 1,102  | 1,436                  | 1,313  |  |
| Kalgoorlie    | 67,069    | 74,346         | 67,635    | 1,386  | 1,587                  | 1,440  |  |
| Karratha      | 100,450   | 107,830        | 119,356   | 3,089  | 3,283                  | 3,452  |  |
| Kununurra     | 35,390    | 43,772         | 44,502    | 1,681  | 2,048                  | 1,965  |  |
| Learmonth     | 12,654    | 17,214         | 16,803    | 544    | 710                    | 634    |  |
| Newman        | 18,900    | 24,496         | 26,187    | 1,138  | 1,651                  | 1,472  |  |
| Paraburdoo    | 26,803    | 28,665         | 26,962    | 1,111  | 1,318                  | 1,276  |  |
| Perth—        |           |                |           |        |                        |        |  |
| Internal (c)  | 1,140,513 | 1.399.311      | 1,938,958 | 13,965 | 17,636                 | 21,970 |  |
| International | 811,754   | 860,816        | 824,172   | 4,228  | 4,849                  | 5,351  |  |
| Port Hedland— |           |                |           |        |                        |        |  |
| Internal      | 68,330    | 81,618         | 83,927    | 2,761  | 3,344                  | 3,336  |  |
| International | 4,766     | 4,949          | 4,974     | 102    | 104                    | 104    |  |

(a) Total of embarkations and disembarkations. (b) Total of arrivals and departures. (c) Interstate and intrastate. *Source:* Department of Transport and Communications.

The operation of regular passenger air services over the main domestic routes, has been deregulated since 31 October 1990 and is no longer restricted to the two major domestic carriers.

Shipping Western Australia's sea-borne trade is conducted through the Port of Fremantle and a number of outports. Of these, Geraldton, Bunbury, Albany and Esperance are situated in the more highly developed south-western and southern parts of the State. The less closely settled areas of the north-west and the north, are served by ports and other landing points at Useless Loop (Shark Bay), Carnarvon, Cape Cuvier, Exmouth, Barrow Island, Dampier, Port Walcott (Cape Lambert), Port Hedland, Broome, Derby, Yampi and Wyndham.

The importance of mineral developments in the north-west of the State is evident from the amount of cargo loaded at the ports of Dampier, Port Hedland and Port Walcott. They are surpassed only by the Port of Fremantle, the principal port of Western Australia.

#### Waterfront Reform

#### Contributed by the Department of Transport

The Western Australian port system is unique in this country. The isolation of ports along the 12,500kms of State coastline is one factor. The variety of these ports is another - from Fremantle as the third largest general container port in the country, to the Pilbara ports as some of the biggest bulk operations in the world and to the smallest, isolated ports dependent on seasonal, sporadic throughput.

During 1992-93, regional ports achieved significant productivity gains and saved up to 40 per cent in real costs under a series of major reforms. This arose from the introduction of enterprise bargain agreements which saw productivity rise sharply as the workforce declined and operations running more efficiently and effectively.

Gone are the restrictive work practices of the past and in their place has come the introduction of multi-skilled Integrated Port Labour Forces at Bunbury, Esperance, Albany, Geraldton, Broome and Wyndham. It is estimated port communities will experience savings in the cost of operating these ports of 35 per cent or some \$3 million each year, stemming from the reduction of almost half in the labour required and the elimination of idle time.

Port users are achieving operational savings by using fewer and more productive labour resources for stevedoring and are able to offer a better level of service to their clients and a better work environment for their employees. *Cargo Statistics* Cargo statistics are recorded according to value and gross weight tonnes. Gross weight is the total weight of cargo excluding the weight of containers, irrespective of the basis on which freight is charged.

Apart from general cargo, overseas consignments discharged were principally petroleum and petroleum products, rock phosphate, caustic soda, iron, steel and sulphur. Outward cargoes from Fremantle consisted largely of alumina, cereal grains, wool, refined petroleum and sheep. Cargo loaded at Esperance and Albany comprised mainly cereal grains. At Bunbury, the principal cargoes loaded were alumina, mineral sands and woodchips. Cereal grains and mineral sands were the main items loaded at Geraldton. Principal cargoes loaded in the northern part of the State were iron ore from Dampier, Port Hedland and Port Walcott. Salt was loaded at Carnarvon, Dampier and Port Hedland.

*Coastal Shipping* The Western Australian Coastal Shipping Commission was established in 1965 to carry on the services formerly maintained by the State Shipping Service. The Commission's ships operate along the north-west and northern coasts, calling regularly at ports between Fremantle and Darwin (Northern Territory).

> Besides general cargo, the freight discharged at north-west and northern ports consists mainly of refined petroleum products, bulk cement and other building and construction materials, refrigerated cargo, vehicles and drilling equipment.

> Cargoes carried south to Fremantle are mainly primary products (such as meat, grains and prawns) and vehicles. The Commission also maintains a regular link between Fremantle and Bunbury and the Eastern States.

Principal Ports The State Government, through the Marine and Harbours Department, controls the ports at Broome, Carnarvon, Derby, Port Walcott (Cape Lambert) and Wyndham. The ports at Albany, Bunbury, Esperance, Fremantle, Geraldton and Port Hedland are controlled by separately constituted authorities established by an Act of Parliament. Private operators control the ports (or landing points) at Barrow Island, Cape Cuvier, Dampier, Exmouth, Useless Loop and Yampi.

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> Census of Manufacturing Establishments: Selected Items of Data Classified by Industry and Employment Size, Western Australia (8203.5)

Commerce

Manufacturing Commodities: Principal Articles Produced, Australia (8303.0)

Manufacturing Industry, Details of Operations by Industry Class, Australia (8203.0)

Manufacturing Industry, Selected Items of Data Classified by Industry and Employment Size, Australia (8204.0)

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# TOURISM

15

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### Chapter 15

# TOURISM

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### Chapter 15

## TOURISM

#### Western Australian Tourism Commission

At the State level, the Western Australian Tourism Commission (WATC) is responsible for marketing Western Australia as a tourist destination for international, interstate and intrastate visitors.

**Domestic Travel** Tourism is one of the largest growing industries in Western Australia. As the State capital, Perth receives the majority of interstate and international visitors and, has experienced a major share of the development in tourist accommodation (see table 15.1). At 31 December 1992, the Perth Statistical Division contained 45.3 per cent of the State's total Hotels and Motels with facilities. Increasing awareness of the different tourist attractions throughout Western Australia has increased the popularity of country statistical local areas as tourist destinations.

#### TABLE 15.1 - TOURIST ACCOMMODATION (a) 31 December 1992 F

| Re | efei | rence | ; | Catal | logue | No. | 8635.5 |  |
|----|------|-------|---|-------|-------|-----|--------|--|
|----|------|-------|---|-------|-------|-----|--------|--|

|   | Perth<br>Statistical<br>Division      | Rest of<br>State       | Western<br>Australia    |
|---|---------------------------------------|------------------------|-------------------------|
| HOTELS A                                    | ND MOTELS, WITH                       | FACILITIES (b)         |                         |
| Establishments<br>Guest rooms<br>Bed spaces | 88<br>6,723<br>17,079                 | 240<br>7,911<br>20,629 | 328<br>14,634<br>37,708 |
|   | TELS AND GUEST H<br>WITHOUT FACILITIE | '                      |                         |
| Establishments<br>Guest rooms<br>Bed spaces | 7<br>304<br>437                       | 115<br>2,569<br>4,186  | 122<br>2,873<br>4,623   |
|   | CARAVAN PARKS                         | (c)                    |                         |
| Establishments<br>Sites                     | 34<br>3,966                           | 273<br>24,164          | 307<br>28,130           |
| HOLIDA                                      | Y FLATS, UNITS ANI                    | D HOUSES (b)           |                         |
| Letting entities<br>Units<br>Bed spaces     | 30<br>940<br>3,761                    | 67<br>974<br>5,229     | 97<br>1,914<br>8,990    |

(a) Hotels, motels and guest houses must have breakfast available for guests. Caravan parks must provide powered sites and toilet, shower and laundry facilities. Holiday flats etc. are mainly self-contained and do not have breakfast available. (b) Establishments providing predominantly short term accommodation (i.e. periods less than two months). (c) Establishments providing short term or long term accommodation.

### Showing Western Australia to the World Contributed by the Western Australian **Tourism Commission** Raising the awareness of Western Australia as a tourist destination is one of the Western Australian Tourism Commission's (WATC) most important tasks. It is achieved in part by an extensive program conducted with journalists from all over the world. During 1992-93, the WATC hosted 72 local and interstate journalists and media people, and 249 international media representatives to Western Australia as a part of the Commission Media Awareness Program. The Program provides publicity for Western Australian destinations, attractions and tours and builds awareness of the State as an appealing holiday destination. The program generated coverage valued at \$4.8 million in equivalent advertising value in the domestic market, and \$13.2 million in equivalent advertising value in the international market in 1991-92. The WATC operates part of its international program on a cooperative basis with the Australian Tourist Commission's (ATC) Visiting Journalists Program. In 1991-92, 109 media representatives were jointly hosted to Western Australia by the WATC and the ATC. The WATC also hosts visiting travel agents and tour wholesalers under the Trade Awareness Program. A total of 711 international trade representatives and 390 domestic agents were hosted in 1991-92. The program provided trade personnel with first-hand knowledge of Western Australia. It also enabled operators to show their products to influential international wholesalers. The Programs depend upon extensive industry support. More than 200 tourism industry operators provide discounted or free-of-charge services on a cooperative basis to support the media and trade programs. During 1991-92, the industry provided in-kind services to the value of \$2.9 million. The WATC invested \$284,000 and two full-time staff to conduct the program. The Visiting Media and Trade Awareness Programs are the largest cooperative activities undertaken.

| Office       | Address   |
|--------------|---|
| Adelaide     | Cnr King William and Grenfell Streets,<br>Adelaide, South Australia                               |
| Bangkok      | 6th Floor, Asia Building,<br>294-1 Phya Thai Rd,<br>Bangkok 10400, Thailand                       |
| Berlin       | Schloss Strasse 60, 5060 Bergisch,<br>Gladbach 1, Berlin, Germany                                 |
| Brisbane     | 243 Edward Street,<br>Brisbane, Queensland  |
| Darwin       | 79-81 Smith Street,<br>Darwin, Northern Territory   |
| Hobart       | Cnr Murray and Patrick Streets,<br>Hobart, Tasmania   |
| Jakarta      | JL.KH Hasyim Ashari, No.33B,<br>Jakarta, Indonesia  |
| Kowloon      | Suite 702-3 Ocean Centre, Harbour City,<br>Tsimshatsui, Kowloon, Hong Kong                        |
| Kuala Lumpur | 6th Floor UBN Tower,<br>Letterbox 51, 10 Jalan P Ramlee,<br>50250 Kuala Lumpur, Malaysia          |
| London       | Western Australia House, 115 The Strand,<br>London WC2R OAJ, United Kingdom                       |
| Los Angeles  | 2121 Avenue of the Stars, Suite 1210,<br>Los Angeles 90067, California, U.S.A.                    |
| Melbourne    | 35 Elizabeth Street,<br>Melbourne, Victoria   |
| Perth        | Forrest Place, cnr Wellington St,<br>Perth, Western Australia                                     |
| Singapore    | Unit 03-03 Thong Sia Building,<br>30 Bideford Road, Singapore 0922                                |
| Sydney       | Level 6, 135 King Street,<br>Sydney, New South Wales  |
| Taipei       | 3F No. 101 Nanking East Road,<br>Section 2, Taipei, Taiwan  |
| Tokyo        | Landic No. 2, Akasaka Building,<br>5th Floor 10-9 Akasaka 2-Chome,<br>Minato-Ku, Tokyo 107, Japan |

Source: Western Australian Tourism Commission.

Information provided by the WATC shows that, during 1991-92, interstate and intrastate visitors, (persons aged 14 years and over), made 5.1 million trips to or within Western Australia. This represents 10.5 per cent of total domestic trips made within Australia. The Bureau of Tourism Research estimates that takings from tourism (domestic and international) for Western Australia were \$3.4 billion (or 13.0 per cent of total estimated takings for Australia) in 1991-92.

The main purpose of trips to or within the State was 'pleasure or holiday' (38 per cent) followed by 'visiting friends and relatives' (24 per cent). The main destinations for domestic travel were Perth and the South-West. The main tourist destinations, by statistical local area, is shown in table 15.2.

|                 |            | Statistica                            | nl Local A | Area (a)                                  |
|-----------------|------------|---------------------------------------|------------|---|
| Guest arrivals  |            | 1990-91                               |            | 1991-92                                   |
| Over 200,000    | 1.         | Perth(C)                              | 1.         | Perth(C)                                  |
| 150,001-200,000 | 2.         | Busselton                             | 2.<br>3.   | Busselton<br>Geraldton(C)<br>Greenough(S) |
|                 |            |                                       | 4.         | Albany(T & S)                             |
| 100,001-150,000 | 3.         | Albany(T & S)                         | 5.         | Augusta/<br>Margaret Riv                  |
|                 | 4.         | Geraldton(C)<br>Greenough(S)          | 6.         | Carnarvon                                 |
|                 | 5.         | Augusta/<br>Margaret River            | 7.         | Manjimup                                  |
|                 | 6.         | Bunbury(C)                            | 8.         | Bunbury(C)                                |
|                 | 7.         | Carnarvon                             | 9.         | Kalgoorlie/<br>Boulder(C)                 |
|                 | 8.<br>9.   | Manjimup<br>Kalgoorlie/<br>Boulder(C) | 10.        | Belmont                                   |
| 80,001-100,000  | 10.<br>11. | Belmont(C)<br>Dundas                  | 11.<br>12. | Broome<br>Gingin and                      |
|                 |            | Duluas                                |            | Dandaragan                                |
|                 | 12.        | Broome                                | 13.        | Shark Bay                                 |
|                 | 13.        | Shark Bay                             | 14.        | Stirling(C)                               |
| 60,001-80,000   | 14.        | Mandurah(C)                           | 15.        | Wyndham/Eas<br>Kimberley                  |
|                 | 15.        | Wyndham/East<br>Kimberley             | 16.        | Roebourne                                 |
|                 | 16.        | Stirling                              | 17.        | Esperance                                 |
|                 | 17.        | Gingin and<br>Dandaragan              | 18.        | Dundas                                    |
|                 | 18.        | Northampton                           | 19.        | Northampton                               |
|                 | 19.        | Esperance                             |            |   |
|                 | 20.        | Roebourne                             |            |   |

TABLE 15.2 – HOTELS, MOTELS, GUEST HOUSES AND CARAVAN PARKS

(a) Cities, Towns and Shires are marked (C), (T) and (S) respectively

Tourism Activity:Tourism activity, particularly international tourism, hasRecent Trendsexperienced significant growth. Three sets of ABS data that<br/>provide useful indicators of tourism activity are:

- overseas arrivals and departures
- tourist accommodation; and
- balance of payments.

The first and third data sets relate to international tourism activity, whereas the second reflects domestic as well as international tourism.

Overseas Arrivals In calendar year 1992, the number of short-term resident departures of Western Australians was 267,532 — an increase of 10.4 per cent over the 1991 figure of 242,348.

Departures In 1992 the most popular overseas short-term destinations for Western Australian residents were Indonesia (including Bali), 21.6 per cent of total destinations; followed by the United Kingdom, 13.6 per cent; Singapore 11.7 per cent; Malaysia, 8.6 per cent; New Zealand, 8.5 per cent; and the United States of America, 6.6 per cent. With the exception of Singapore (down by 480 compared to 1991), all of the major destinations recorded an increase in the number of Western Australians visiting their shores.

| Country                   | 1991    | 1992    |
|---------------------------|---------|---------|
| Indonesia (includes Bali) | 50,300  | 56,182  |
| United Kingdom            | 32,288  | 36,329  |
| Singapore                 | 31,717  | 31,237  |
| New Zealand               | 21,579  | 22,764  |
| Malayasia                 | 19,768  | 23,054  |
| Hong Kong                 | 13,996  | 14,810  |
| United States             | 15,147  | 17,563  |
| Thailand                  | 10,642  | 10,903  |
| Total                     | 195,437 | 212,842 |
| Total all departures      | 242,348 | 267,532 |

TABLE 15.3 – MAIN SHORT TERM DESTINATIONS Reference: ABS Microfiche PMTR0031

Arrivals

The number of short-term arrivals in 1992 was 210,887 — an increase of 17,575 or 9.1 per cent over the 1991 figure of 193,312. The major source countries for short-term overseas visitors were the United Kingdom, 23.0 per cent of total arrivals; Singapore, 17.2 per cent; New Zealand, 9.7 per cent; Japan, 9.2 per cent; and Malaysia, 9.0 per cent. With the exception of New Zealand, the number of arrivals from each of the above countries increased in 1992 compared to the corresponding figures in 1991. Singapore (6,404) and Malaysia (5,073) recorded the largest increases.

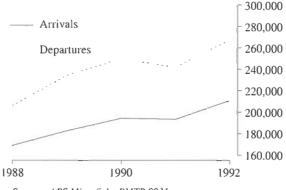
### Tourism

| Country            | 1991    | 1992    |
|--------------------|---------|---------|
| New Zealand        | 20,926  | 20,456  |
| United Kingdom     | 47,022  | 48,570  |
| Malayasia          | 13,920  | 18,993  |
| Singapore          | 29,852  | 36,256  |
| Japan              | 18,064  | 19,469  |
| Total              | 129,784 | 143,744 |
| Total all arrivals | 193,321 | 210,887 |

### TABLE 15.4 – MAIN SHORT TERM ARRIVALS Reference: ABS Microfiche PMTR0031

Diagram 15.1 indicates that, over the last five calendar years, overseas departures have exceeded overseas arrivals. In 1988, the excess of departures over arrivals was 37,250. This leapt dramatically by 14,977 persons in 1989 to 52,227 persons. Since 1989, the excess of departures over arrivals has averaged 53,477 persons per annum. An analysis of the overseas arrivals and departures reveals some interesting changes in trends. In 1988, 9.9 per cent of total resident departures were for business reasons; 48.6 per cent of total overseas arrivals were for holiday reasons; and 31.2 per cent of total overseas arrivals listed "visiting relatives" as the main reason for their visit. In 1992, resident departures for business reasons had risen to 11.3 per cent; overseas arrivals on holiday had risen to 55.6 per cent; and that overseas arrivals, visiting relatives, had declined to 28.1 per cent.





Source: ABS Microfiche PMTR 0031

#### Western Australian Tourist Accommodation

MAIN FEATURES 1992

- Hotels, Motels and Guest Houses
- The Survey of Tourist Accommodation measures the capacity and use of short-term accommodation in Australia. Data are collected for four types of establishments: hotels, motels and guest houses; caravan parks; holiday flats, units and houses; and visitor hostels.
- In calendar year 1992 room nights occupied increased by 1.5 per cent to 3,065,122. The room occupancy rate increased from 47.5 per cent to 47.8 per cent and guest arrivals increased by 31,788 (or 1.6 per cent).
  - In 1992 takings from accommodation rose by 4.7 per cent to \$201.8m with average takings per room night occupied increasing by 1.4 per cent from \$64 to \$65 per night.
- Capacity available in the December quarter 1992; increased by 1.0 per cent to 28,130 powered and unpowered sites and cabins, compared to the same period in 1991.
  - Of the capacity available in the December quarter 1992, 4,705 sites (16.7 per cent) were occupied by long-term residents, 2,150 sites (7.6 per cent) were permanently reserved but only casually occupied by their tenants, and an average 3,147 sites (11.2 per cent) were occupied by other short-term guests.
  - In calendar year 1992 guest arrivals decreased by 3.5 per cent while takings from accommodation rose by 6.7 per cent to \$41.7m.
- Holiday Flats, Units and Houses • Table 15.5 shows that in 1992 availability increased by 0.9 per cent to 1,914, but unit nights occupied fell by 3.9 per cent and unit lettings decreased by 1.9 per cent (from 88,244 to 86,597).
  - Unit occupancy fell by 3.0 per cent to 52.0 per cent and takings from accommodation in 1992 fell by \$237,000 (or 1.2 per cent).

| Year | Units (a) | Unit<br>occupancy<br>rate | Unit<br>lettings | Takings (b) |
|------|-----------|---------------------------|------------------|-------------|
|      | No.       | Per cent                  | <i>'</i> 000     | \$'000      |
| 1990 | 1,763     | 56                        | 79               | 15,931      |
| 1991 | 1,896     | 55                        | 88               | 19,154      |
| 1992 | 1,914     | 52                        | 87               | 18,917      |

 TABLE 15.5 – HOLIDAY FLATS, UNITS AND HOUSES

 Reference: Catalogue No. 8635.5

(a) At 31 December. (b) Takings only from accommodation.

Visitor Hostels There were 3,060 bed spaces available in the December quarter 1992 and 96,040 guest nights were sold. The corresponding figures in 1991 were 2,652 and 88,849 respectively. Bed occupancy fell by 0.3 per cent to 34.1 per cent and accommodation takings were \$1.0m over the same period. Australian Australian expenditure aboard on fares and travel totalled \$7,477 **Expenditure** on million in 1991-92, compared with \$7,659 million for foreign Fares and Travel expenditure on fares and travel in Australia in the same year. In 1981-82, the corresponding amounts were \$2,557 million and \$1,588 million respectively. This represents an average annual growth of 11.3 per cent for Australian expenditure and 17.0 per cent for foreign expenditure. The gap between the two aggregates (which had been in the rest of the world's favour since the start of the series in the mid-1940s), peaked at \$1,689 million in 1984-85, then fell markedly in subsequent years, narrowing to \$183 million in 1987-88. It then rose to \$795 million in 1990-91 before falling again. In 1991-92, the gap between the two aggregates was in Australia's favour for the first time, with Australia's earnings from foreign travellers in Australia being \$182 million more than foreign earnings from Australian travellers. The measures described above do not take account of a number of factors that impinge on the net value of international tourism to Australia; for example, no adjustments are made for the expenses incurred in Australia by foreign airlines flying Australian residents aboard (part of port services credits) nor for the reverse (i.e. resident airlines costs incurred abroad in bringing foreign travellers to Australia). As a consequence, the difference between Australia's earnings from fares and travel overseas and foreign earnings from fares and travel in Australia only partly reflects the cost/contribution to Australia of international tourism. A substantial amount of statistical information on tourism is produced by the ABS and other agencies. Other agencies collecting and disseminating tourism statistics include the Bureau of Tourism Research (BTR), tourism commissions, State government departments, academic institutions and private sector consultants. A Framework for The ABS recently published a Directory of Tourism Statistics (Catalogue No. 1130.0), which provides an overview of tourism **Tourism Statistics** statistics currently available, in particular those available from public sector sources. For each set of data it provides a summary article, detailed descriptions of items and contact names. The ABS has also developed a Framework for the Collection and *Publication of Tourism Statistics* to guide the design and conduct of tourism surveys. The framework provides standardised

definitions and a structure for collecting and presenting data. The framework is based on the approach that tourism statistics should cover all visitors (both domestic and international), not just recreational tourists. The statistics covered by the framework are those which in some way measure the activities of these visitors. The focal point is the transaction in which a visitor obtains a product or service from a supplier. The principal element of the transaction is the consumer. If that consumer meets the definition of a visitor, then the product and consequently the supplier involved in the transaction are within the scope of tourism activity.

The **consumer** is classified as:

- an international visitor either an overnight visitor or a day visitor; or
- a domestic visitor either an overnight visitor or a day visitor.

The **product** is classified into ten broad product/service groups:

- accommodation
- food and drink
- transport
- entertainment/leisure
- sporting activities
- business services
- education/training
- health
- other goods and services; and
- package tours.

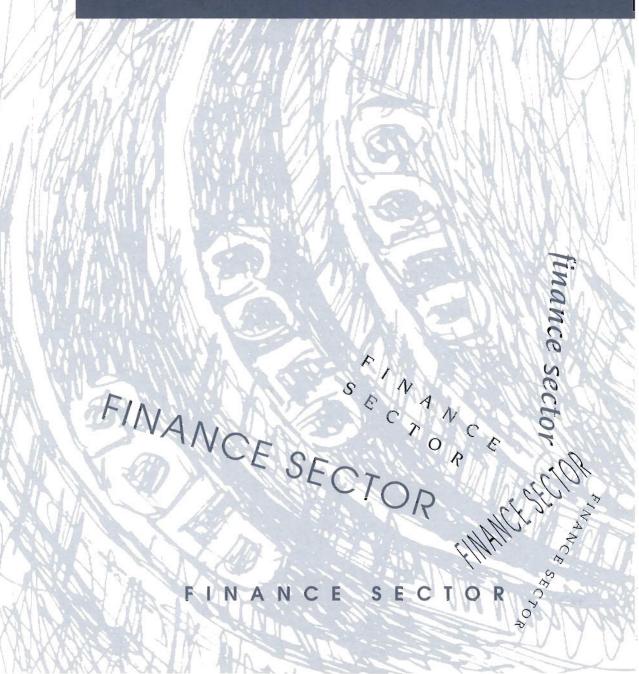
The **supplier** is classified according to the Australian Standard Industrial Classification (ASIC).

#### References

ABS Publications Australian Economic Indicators, Australia (1350.0) Directory of Tourism Statistics, Australia (1130.0) Tourist Accommodation, Western Australia (8635.5) Tourism

# FINANCE SECTOR

16



### Chapter 16

# FINANCE SECTOR

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### Chapter 16

# **FINANCE SECTOR**

## **Public Finance**

|   | Part one of this chapter deals mainly with the financial activities<br>of State and Local Government Authorities in Western Australia.<br>Particular emphasis has been given to Commonwealth-State<br>financial relations, including details of Commonwealth cash<br>benefits to persons in Western Australia.                     |
|---|--|
|   | In 1991-92, total current and capital outlays of State authorities were \$7,345m. Grants received from the Commonwealth totalled \$3,073m, an increase of 5 per cent over the previous year.   |
|   | Total current and capital outlays of Local Authorities were \$582m in 1990-91. Revenue and grants received totalled \$626m.  |
| Commonwealth-State<br>Financial Relations | The major institutions assisting in the management of<br>Commonwealth funding to States and Territories governments<br>are: the Premiers' Conference; the Commonwealth Grants<br>Commission; and the Australian Loan Council.  |
| Premiers' Conference                      | The annual Premiers' Conference determines the total amount of<br>general revenue assistance and the shares of each State and the<br>Northern Territory. Although these payments are at the<br>Commonwealth's discretion, they are subject to negotiation<br>between the Commonwealth and States at the Conference.                |
| Commonwealth Grants<br>Commission         | This Commission was established in 1933 to recommend on<br>applications made by States, under section 96 of the Constitution,<br>for special financial assistance grants. Since 1982, as a result of<br>arrangements agreed at Premiers' Conferences, no State has<br>sought such a grant.   |
|   | Since 1978, under the <i>States (Personal Income Tax Sharing) Act</i> 1976, a special division of the Commission has also been responsible for recommending the per capita relativities to be used for the allocation of general revenue grants among the States.  |
| Australian Loan<br>Council                | The Loan Council was established under the <i>Financial Agreement</i><br><i>Act of 1928</i> with responsibility for determining the annual<br>borrowing programs of the Commonwealth and State<br>Governments, and the terms and conditions of loans to finance<br>these programs. In 1936, the Gentlemen's Agreement extended the |

Loan Council's authority to include approval of semi-government and Local Authorities' borrowings.

By the early 1980s, the Loan Council had begun to exercise increasingly less influence under the Gentlemen's Agreement over total authority borrowings. Greater use of non-conventional financing techniques, such as finance leasing and similar forms of borrowing, were being employed, which were outside the scope of the Agreement. These developments culminated in the Gentlemen's Agreement being suspended at the June 1984 Loan Council meeting, and the Global Approach was adopted on a trial basis in 1984-85. The objective of the Global Approach was to broaden the scope of Loan Council oversight of authority borrowings, by bringing within voluntarily agreed limits, all forms of borrowings by Commonwealth, State and Local Authorities.

*Commonwealth Financial Assistance Sinancial Assistance Commonwealth Source Commonwealth Commonwealth Commonwealth Commonwealth Government payments to the States and Northern Territory Governments may be classified under two major headings: general purpose payments and specific purpose payments. These may be further classified into those provided for recurrent outlays and those provided for capital outlays. Payments are made in the form of grants (non-repayable) or loans (repayable).* 

> General purpose payments provide general budgetary assistance and the States and Northern Territory are free to determine the spending of these monies according to their own budgetary priorities.

| Payments   | Western<br>Australia | Australia           |
|--|----------------------|---------------------|
| General purpose payments—                                      |                      |                     |
| Revenue<br>Capital   | 1,555.9<br>29.9      | 13,704.0<br>371.7   |
| Total  | 1,585.8              | 14,075.7            |
| Specific purpose payments—<br>Revenue<br>Capital               | 1,133.4<br>353.3     | 12,042.3<br>3,286.2 |
| Total  | 1,486.7              | 15,328.5            |
| Total payments   | 3,072.5              | 29,404.2            |
| General and specific purpose payments classified according to— |                      |                     |
| Grants<br>Advances (loans)                                     | 3,072.4<br>0.1       | 29,399.5<br>4.7     |

#### TABLE 16.1 – COMMONWEALTH GENERAL AND SPECIFIC PURPOSE PAYMENTS FOR WESTERN AUSTRALIA AND AUSTRALIA(a), 1991-92 (\$ million)

(a) Excludes direct Commonwealth payments to local authorities

Source: Commonwealth Budget Paper No. 4.

Specific purpose payments are generally a means of meeting the objectives and priorities of Commonwealth Budget programs. They are provided subject to certain conditions, for example, the Commonwealth specifying the purpose for which the funds may be spent; the States being required to contribute some specified amount of their own funds to the program to qualify for the assistance.

General Purpose Revenue Payments

General purpose revenue is paid in the form of grants. The arrangements for determining the level and distribution of these grants among the States and Northern Territory, are set at the Premiers' Conference each year.

|                                     | Year  | Western<br>Australia   | Australia  |
|-------------------------------------|---|--|--|
|                                     | FINA  | NCIAL ASSISTANCE GRANTS  |  |
|                                     | 1989-90<br>1990-91<br>1991-92   | 1,494<br>1,548<br>1,556  | 12,860<br>13,117<br>13,125   |
|                                     | SPE   | CIAL REVENUE ASSISTANCE  |  |
|                                     | 1989-90<br>1990-91<br>1991-92   |  | 45<br>50<br>40   |
|                                     | TOTAL   | GENERAL REVENUE FUNDS (b   | )  |
|                                     | 1989-90<br>1990-91<br>1991-92   | 1,494<br>1,548<br>1,556  | 13,278<br>13,601<br>13,704   |
|                                     | general revenue grants to   | nonwealth payments to local authori<br>o ACT for all years, and for 1991-92<br>e: Commonwealth Budget Paper No. 4  | also Transitional  |
| General Purpose<br>Capital Payments | General Purpose Ca  | n Council approved a borrowi<br>apital Funds for the States<br>f which Western Australia's sh  | and Northern   |
| Specific Purpose<br>Payments        | 1991-92 amounted t<br>schools (\$212m), hig<br>grants (\$337m). Spe<br>Australia in 1991-92 a | current payments to Western<br>o \$1,133m. The major paym<br>her education (\$251m) and ho<br>cific purpose capital paymen<br>amounted to \$353m with the la<br>133m) and public housing (\$72 | ents were for<br>spital funding<br>ts to Western<br>urgest amounts |
| State Government<br>Finance         | the Government of   | 5.5 and 16.6 relate to the finance<br>Western Australia, statutor<br>and corporations, and incorp  | y authorities,   |

(other than financial enterprises) in which the State Government

or its agencies have a controlling interest.

#### TABLE 16.2 – GENERAL PURPOSE REVENUE ASSISTANCE (a) (\$ million)

The revised series is designed to provide, for the public sector, statistics which complement the accounts for individual sectors provided in the Australian National Accounts. These statistics are intended to consolidate the transactions of the various public authorities and present them so that their economic impact may be assessed; to show the purposes that are being served by government expenditures; and to show the roles of the various levels of government in the undertaking and financing of these expenditures.

|  | , ,       |         |         |
|--|-----------|---------|---------|
| Item   | 1989-90   | 1990-91 | 1991-92 |
| CURR   | ent gran  | TS      |         |
| General public services, defence                         | / 11.0    | 11.0    | 10.2    |
| public order and safety                                  | 11.3      | 11.3    | 10.3    |
| Education  | 411.7     | 473.3   | 507.9   |
| Health   | 330.1     | 357.7   | 371.8   |
| Social security and welfare                              | 27.6      | 27.6    | 30.4    |
| Housing and community ameni                              | ties 0.7  | 1.4     | 3.2     |
| Agriculture, forestry,<br>fishing and hunting            | 16.7      | 17.3    | 27.3    |
| Transport and communications                             | 0.9       | 0.8     | 0.6     |
| General purpose inter-<br>government transactions        | 1,559.3   | 1,615.5 | 1,674.9 |
| Other purpose  | 18.0      | 28.7    | 62.8    |
| Total current grants                                     | 2,376.3   | 2,533.7 | 2,689.3 |
| CAPI   | TAL GRAN  | ГS      |         |
| General public service, defence, public order and safety | _         | _       | _       |
| Education  | 57.9      | 70.8    | 76.2    |
| Health   | 5.8       | 5.6     | 3.8     |
| Social security and welfare                              | 6.9       | 5.9     | 5.6     |
| Housing and community ameni                              | ties 89.5 | 92.1    | 95.8    |
| Recreation and culture                                   | 0.6       | 4.2     | 3.0     |
| Agriculture, forestry,<br>fishing and hunting            | 9.9       | 1.0     | 0.6     |
| Transport and communications                             | 180.1     | 178.5   | 168.4   |
| General purpose inter-<br>government transactions        | 22.9      | 22.4    | 29.9    |
| Total capital grants                                     | 373.5     | 380.5   | 383.2   |

#### TABLE 16.3 – COMMONWEALTH GOVERNMENT GRANTS TO WESTERN AUSTRALIA BY GOVERNMENT PURPOSE CLASSIFICATION (\$ million)

Source: Commonwealth Budget Paper No. 4

Basic principles which have been followed in developing the data for the economic accounts for the public sector are that all public authorities should be included; all funds under the control of those authorities should be analysed; and transfers between funds, accounts and authorities should be eliminated to present tables on a consolidated basis.

In this section of the Year Book, the public sector has been taken to comprise general government bodies (excluding local government authorities) and public trading enterprises. Public financial enterprises have been omitted from the consolidated accounts presented here, largely on the ground that combining the income and outlay and capital financing transactions of publicly-owned trading and savings banks, government insurance offices and other public financial institutions with the equivalent transactions of public trading enterprises and general government, seems to provide a less meaningful account of public sector activity.

| TABLE 16.4 – COMMONWEALTH GOVERNMENT ADVANCES TO |
|--|
| WESTERN AUSTRALIA CLASSIFIED BY GOVERNMENT       |
| PURPOSE CLASSIFICATION                           |
| (\$ million)                                     |

| Item  | 1989-90            | 1990-91              | 1991-92              |
|---|--------------------|----------------------|----------------------|
| Net advances (a)—   |                    |                      |                      |
| Defence   | -0.1               | -0.1                 | -0.1                 |
| Housing and community amen<br>Housing<br>Community development                                  | ities—<br>_6.6<br> | -6.9<br>-1.5<br>-1.0 | -7.2<br>-0.4<br>-0.8 |
| Water supply<br>Sanitation and protection<br>of the environment<br>Recreation and culture       | -0.3<br>-0.2       | -0.3                 | -0.3<br>-3.9         |
| Agriculture, forestry,<br>fishing and hunting<br>Transport and communications                   | -1.9<br>-1.3       | -3.8<br>-0.9         | -3.9<br>-0.8         |
| Other purposes—<br>General purpose inter-<br>government transactions<br>Natural disaster relief | -17.6<br>-3.2      | -114.7<br>-1.9       | -237.1<br>-1.6       |
| Total net advances  | -32.4              | -129.5               | -252.3               |

(a) Gross advances less repayments.

Public Trading

Enterprises

Source: Commonwealth Budget Paper No. 4.

*General Government Bodies* General government bodies are government departments, offices, agencies and authorities engaged in providing services free of charge or at prices significantly below their cost of production.

> Public trading enterprises are government undertakings which aim at covering the bulk of their expenses by revenue from sales of goods and services.

- **Government Finance Classifications** Over recent years, a range of new and revised classifications has been developed for use in the compilation and presentation of government finance statistics. For details of the new classifications, refer to the *Classification Manual For Government Finance Statistics* (Catalogue No. 1217.0). Two of the main classifications shown in that publication are the Economic Transactions Framework and the Government Purpose Classification.
- *Economic Transactions* The Economic Transactions Framework, in broad terms, is *Framework* The Economic Transactions between public authorities and the private sector, and between public authorities where sub-sectors of the public sector have been identified, in a way which facilitates a study of the impact of government transactions on the economy.
- *Government Purpose* The Government Purpose Classification Scheme is the medium by *Classification Scheme* The Government Purpose Classification Scheme is the medium by which outlays with similar objectives are brought together to reveal more fully the broad purposes of public sector spending, and to provide a framework for developing means of assessment of the effectiveness of outlays in achieving government policies. With the classification of outlays by economic type, the purpose classification also facilitates the assessment of the economic impact of identified programs of expenditure.

Table 16.5 shows that the main components of the receipts of Western Australian State authorities are taxation, grants and financing transactions.

#### TABLE 16.5 – STATE AUTHORITIES RECEIPTS AND FINANCING TRANSACTIONS CLASSIFIED BY ECONOMIC TRANSACTIONS FRAMEWORK (\$ million) Reference: Catalogue No. 5501.0

| r1989-90 | r1990-91  | p1991-92   |
|----------|---|--|
|          |   |  |
| 1,789    | 1,883   | 1,994  |
|          |   |  |
| 678      | 721   | 769  |
|          |   |  |
|          |   | 1(   |
| 349      | 258   | 243  |
| 490      | 405   | 527  |
|          |   | 3,071  |
|          | ,   |  |
| 6,088    | 6,294   | 6,614  |
|          |   |  |
| -35      | -131  | -254   |
|          |   | 804  |
|          |   | 43   |
|          |   | 323  |
| 183      | -239  | -571   |
| 874      | 997   | 733  |
| 7,051    | 7,306   | 7,347  |
|          | 1,789<br>678<br>39<br>349<br>482<br>2,751<br>6,088<br>-35<br>394<br>26<br>306<br>183<br>874 | $\begin{array}{ccccccc} 1,789 & 1,883 \\ 678 & 721 \\ 39 & 21 \\ 349 & 258 \\ 482 & 495 \\ 2,751 & 2,916 \\ 6,088 & 6,294 \\ \hline & & & & & & & \\ -35 & -131 \\ 394 & 783 \\ 26 & 245 \\ 306 & 340 \\ 183 & -239 \\ 874 & 997 \\ \end{array}$ |

Figures for some items published in the public authority finance series may differ from issue to issue as a consequence of reclassification of items and other improvements made in the course of developing the most appropriate presentation of the financial transactions of public authorities.

*Financing Transactions* Financing transactions are the means by which governments finance their deficits or invest their surpluses, which include transactions in securities of all types, borrowing, trade credit of public trading enterprises, and changes in bank balances. Financing transactions represent the difference between total revenue and grants received and total outlays.

Table 16.6 shows current and capital outlays by Western Australian State authorities classified by Economic Transactions Framework. The principal components, for current outlays, are general government final consumption expenditure and current transfer payments; and for capital outlays, capital expenditure on goods, capital transfer payments, and net advances.

| Item   | r1989-90       | r1990-91       | p1991-92       |
|--|----------------|----------------|----------------|
| Current outlays—   |                |                |                |
| General government final<br>consumption expenditure<br>Total current transfer payments | 3,447<br>1,883 | 3,733<br>2,022 | 3,965<br>1,988 |
| Total current outlays  | 5,331          | 5,755          | 5,955          |
| Capital expenditure  | 1,478          | 1,282          | 1,161          |
| Capital transfer payments  | 174            | 91             | 72             |
| Net advances paid  | -21            | 163            | 157            |
| Total capital outlays  | 1,631          | 1,536          | 1,390          |
| TOTAL OUTLAYS  | 6,962          | 7,291          | 7,345          |

#### TABLE 16.6 – STATE AUTHORITIES – OUTLAYS CLASSIFIED BY ECONOMIC TRANSACTIONS FRAMEWORK (\$ million) Reference: Catalogue No. 5501.0

General Government Final Consumption Expenditure

General government final consumption expenditure refers to expenditure by general government bodies, which does not result in the creation of fixed tangible assets or in the acquisition of land, buildings or secondhand goods. It comprises expenditure on wages, salaries and supplements, and on goods and services other than fixed assets or stock. Fees, charged by general government bodies for goods sold and services rendered, are offset against purchases. Net expenditure overseas by general government bodies and purchases from public enterprises are included. All expenditure on defence is classified as general government final consumption expenditure.

- *Current Transfer Payments Payments* Current transfer payments include such items as interest payments on public loans, personal benefit payments (e.g. age pensions), subsidies paid by general government to public and private enterprises, and grants for non-capital purposes, to local authorities and private non-profit organisations (e.g. charitable organisations).
- *Capital Expenditure* Capital expenditure refers to expenditure on new fixed assets, whether for additions or replacements, including wages and salaries paid in connection with capital works. The acquisition and disposal of secondhand fixed assets, land and intangible assets and changes in the balance of stock accounts are included. Expenditure on new fixed assets for defence purposes is excluded.
- Capital Transfer Capital transfer payments consist mainly of grants to local governments, to public and private enterprises and persons for the purpose of acquiring capital assets.
- Net Advances Advances are the creation of financial assets with the aim of funding particular enterprises, households or government activities. Repayments are offset against gross advances to give net advances. These advances are included in outlays, rather than financing transactions in order to bring together all the methods governments use to achieve expenditure policies. For example, advances are made to fund State housing projects.
- **Local Government Finance** The financial powers of local government authorities in Western Australia are derived principally from the *Local Government Act 1960*, the main provisions of which are outlined in Chapter 4 — Government.
- Loan Transactions Under the provisions of local government legislation, local government authorities are constituted as corporate bodies and are authorised to raise loans for works and undertakings and for the liquidation of existing loan debts. The conditions imposed by the *Local Government Act 1960* in relation to loan raising, the levying of loan rates, the expenditure of loan monies and the repayment of loans, are summarised in the section *The Local Government System* in Chapter 4 under the heading *Financial Provisions*.

Loans are raised mainly from banks, insurance companies and superannuation funds. A number of local authorities also raise loans through the Western Australian Treasury Corporation. The State Government exercises a measure of supervision over the loan transactions of local government authorities and, where a loan is repayable in full at maturity, maintains the necessary sinking fund at the Treasury.

### **Private Finance**

The operations of the financial sector in Western Australia are controlled by both Commonwealth and Western Australian legislation.

Legislation The principal Australian legislation comprises the Banking Act 1959, Reserve Bank Act 1959, Commonwealth Banks Act 1959, Life Insurance Act 1945 and the Insurance Act 1973. More detailed descriptions of the background and purpose of these Acts may be found in the Year Book Australia, No.71 — 1988 from page 812 (Catalogue No. 1300.0).

In addition, the *Financial Corporations Act of 1974* was introduced as a result of the increasing significance of the non-bank financial institutions in the early 1970s. The Government's aim in introducing this legislation was to regulate the activities of these non-bank institutions in order to achieve economic stability, maintenance of full employment, the efficient allocation of productive resources and to ensure adequate levels of finance for housing.

The *Corporations Act 1989* was introduced to create a uniform national law regulating companies and the securities industry throughout Australia. It replaced the various companies codes which previously existed in each state and territory. The Corporations Act is administered by the Australian Securities Commission.

In the 1980s, Australian Governments sought to decrease the degree of regulation previously imposed on the financial sector and on banking activity in particular. As a result, controls on most bank interest and foreign exchange were relaxed and new private banks (including overseas banks) were permitted to commence operations.

In late 1989, the Banking Act was amended to give explicit powers to the Reserve Bank for prudential supervision of banks and enable regulations to be made for this purpose. It also provided the Bank with greater power to seek information from banks for prudential purposes and to investigate, either directly or through an agent, the affairs of banks.

State legislation exists to regulate the activities and monitor the solvency of particular types of financial institutions, which operate on a cooperative basis and lend predominantly to members or consumers. In general, these institutions are permanent building societies, cooperative housing societies and credit unions. In some States, including Western Australia, there is also legislation for State Government bodies to operate as banks or insurance offices.

Relaxation of Government Controls

#### Currency

Australia has a decimal system of currency, the unit being the dollar which is divided into 100 cents. Australian notes are issued in the denominations of 5, 10, 20, 50 and 100 dollars and coins in the denominations of 5, 10, 20, 50 cents, and 1 and 2 dollars. The 2 dollar note was replaced by a 2 dollar coin in 1988. In 1991, the issue of 1 and 2 cent coins was discontinued.

Banking The banking system in Western Australia includes the Commonwealth banking institutions, The Rural and Industries Bank of Western Australia and, until late 1989, private trading and savings banks.

### **ASC Regulatory Initiatives Protect Investors**

contributed by the Australian Securities Commission

The Australian Securities Commission (ASC) has established as a priority surveillance programs targeting key sections of the Corporations Law and known problem areas. These are:

- dealers and investment advisers licence compliance. The ASC is targeting the quality of investment advice and training and supervision in the securities industry
- financial statements; prospectuses and takeovers post-vetting. This ensures investors are made aware of all relevant information in order to make an informed decision whether to accept an offer or to invest in a security
- Australian Stock Exchange (ASX) compliance referrals, surveillance targets and co-regulatory (with the ASX) objectives. The ASC aims to promote honest, efficient and well-informed securities and futures markets
- abuse of the corporate form disqualified officers, persistent offenders, return of insolvent companies. This program aims to make those utilising the corporate form accountable to shareholders and creditors
- trustees and managers of collective investment schemes; and
- statutory records compliance the ASC's national corporate database, has publicly accessible information about nearly 900,000 Australian companies.

During the year to 30 June 1992, the ASC Regional Office in Perth dealt with 23 ASX referrals; post-vetted 121 prospectuses, financial statements, and takeover documents; examined in depth 19 financial statements; approved 52 formal investigations; and received 323 complaints. At 30 June 1992, twenty-eight banks in Western Australia had deposits repayable in Australia and/or other lending.

Trading andThe amended Banking Act has now largely removed the<br/>distinction between Trading and Savings banks.

State Bank The Rural and Industries Bank of Western Australia is owned by the Western Australian government. The bank has an office in Sydney, which handles wholesale business, branches in London and the Cayman Islands, and a representative office in Tokyo. It is also authorised to deal in foreign exchange under the Banking (foreign exchange) Regulations and to operate a full foreign exchange dealing room in Perth.

- Other Banks (excluding merchant banks) Other banks operating in Western Australia comprise the Commonwealth Development Bank of Australia, which provides finance for the purpose of primary production, and for the establishment or development of small business undertakings where finance is not otherwise available on reasonable and suitable terms and conditions; the Australian Resources Development Bank Limited, which assists Australian enterprises to participate in the development of Australia's natural resources; and the Primary Industry Bank of Australia Limited, which provides loans to primary producers for longer terms than are otherwise generally available, but restricted to refinancing loans made by banks and other financial institutions.
- **Building Societies** Permanent Building Societies, now part of the Financial Institutions Scheme are registered under the provisions of the Scheme Legislation of Western Australia, primarily for the purpose of raising funds to assist members by granting loans, secured on mortgage, to build or acquire homes. Terminating building societies are registered under the *Building Societies Act* 1976.

Permanent building societies obtain the majority of their funds from the public, while terminating societies derive funds primarily from government and banks. The Commonwealth Government contributes to these funds under the *Housing Assistance Act 1984*.

Credit Unions Credit Unions in Western Australia are now part of the Financial Institutions Scheme and are registered under the provisions of the Scheme Legislation of Western Australia.

Other Financial<br/>InstitutionsFinancial institutions registered under the Financial Corporations<br/>Act comprise authorised money market dealers, money market<br/>corporations, general financiers, pastoral finance companies,<br/>intra-group financiers and other financial corporations.

These institutions together with public unit trusts, cash management trusts, insurance companies and private and public superannuation funds also contribute to financial dealings in Western Australia. Statistical data for these institutions are generally available only on an Australian basis.

Lending by<br/>FinancialNew monthly statistical series were introduced in January 1985 to<br/>show a measure of the lending activity of significant lenders in<br/>fields of personal, commercial and lease finance. These were in<br/>addition to statistics already published on secured housing<br/>finance commitments to individuals for owner occupation.

- Personal Finance Commitments Personal finance commitments comprise those commitments made by significant lenders to individuals for their own personal (non-business) use. A lender is considered to be significant if it is a bank, a life insurance company or a corporation registered under the Financial Corporations Act and, during 1982-83, it committed funds exceeding \$4 million to individuals for their own use.
- *Commercial Finance* Commercial finance commitments comprise those made by significant lenders to government, private and public enterprises, non-profit organisations, or individuals (for investment and business purposes). A lender is considered to be significant if it is a bank, a corporation registered under the Financial Corporation Act, or an insurance company and if it committed funds exceeding \$40.1 million for business purposes (excluding leasing of goods) during 1982-83.
- *Lease Finance* Lease finance commitments comprise those made by significant lenders to trading and financial enterprises, non-profit organisations, governments, public authorities and individuals.

A lender is considered to be significant if it is a trading bank or a corporation registered under the Financial Corporations Act and categorised as a money market corporation or a finance company or a general financier and it committed funds exceeding \$13 million during 1982-83.

New Capital New capital expenditure is expenditure on new fixed tangible assets including major improvements, alterations and additions. In general, this is expenditure charged to fixed tangible assets accounts excluding expenditure on second hand assets unless these are imported from overseas for the first time.

Data are collected by a quarterly sample survey of all private sector enterprises except those enterprises primarily engaged in the agriculture, construction and community services industries. State dissections of data have been produced since December 1978. Prior to that date, data were only available at the national level. Quarterly estimates of private new capital expenditure are available in *Private New Capital Expenditure*, *Australia* (Catalogue No. 5626.0) and *State Estimates of Private New Capital Expenditure* (Catalogue No. 5646.0).

In original current price terms, expenditure peaked in most sectors during 1989-90 and recorded falls in 1990-91. The only exception was the Mining sector which increased by an average of 1.9 per cent per year from 1988-89 to 1990-91. Overall, it was equipment, plant and machinery that sustained the fall in new capital expenditure in 1990-91.

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### Finance Sector \_\_\_\_\_

|                    | New Capital Raisings by Companies Listed on Australian Stock Exchanges (5628.0)                  |
|--------------------|--|
|                    | Permanent Building Societies:<br>Assets, Liabilities, Income and Expenditure, Australia (5632.0) |
|                    | Personal Finance, Australia (5642.0)   |
|                    | Private New Capital Expenditure, Australia (5626.0)  |
|                    | Savings Banks, Australia (5602.0)  |
|                    | State Estimates of Private New Capital Expenditure (5646.0)                                      |
|                    | Taxation Revenue, Australia (5506.0)   |
| Other Publications | Personal Investment Monthly  |
|                    | Reserve Bank Bulletin  |
|                    | Rural & Industries Bank of Western Australia, Annual Report                                      |
|                    | Australian Securities Commission, Annual Report 1991-92  |

### LABOUR MARKET

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### Chapter 17

# LABOUR MARKET

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### Chapter 17

# LABOUR MARKET

# **The Labour Force** The labour force is defined as persons aged 15 years and over who are either employed or available for work. Characteristics are obtained from the Labour Force Survey which is a component of the Monthly Population Survey, conducted by the Australian Bureau of Statistics (ABS).

Each month the survey records information from 70,000 individuals throughout Australia. A random sample is taken of 31,000 private dwellings (5,000 in Western Australia) and a number of other dwellings such as hotels and caravan parks.

The survey is conducted by trained interviewers, generally during the second and third weeks of each month and is designed to enable analysis of the labour force by a number of characteristics, including sex, age, birthplace, occupation, hours worked and duration of unemployment.

The Labour Force Survey is a major economic indicator and is essential to governments, employer associations, trade unions and other organisations for effective monitoring of the performance of the labour force and the overall economy.

Two important labour force indicators are:

*Participation rate*: the number of persons in the labour force expressed as a percentage of the civilian population aged 15 years and over; and

*Unemployment rate:* the number of unemployed persons expressed as a percentage of the labour force.

Table 17.1 shows the continuing effect of the recession on the labour force. The number of males seeking work increased by nearly 12 per cent between May 1991 and May 1992. However, the number of unemployed females fell marginally from 33,400 to 33,300.

The seasonally adjusted unemployment rate for males has remained above 10 per cent since February 1991, and stood at 11.4 per cent in May 1992. The female unemployment rate fell from 9.6 per cent to 9.3 per cent over the same period.

### Labour Market

| Labour force status WA        | 1990    | 1991  | 1992  |
|-------------------------------|---------|-------|-------|
|                               | MALES   |       |       |
| Civilian population           | 627.1   | 641.6 | 654.4 |
| Labour force—<br>Employed—    | 483.0   | 497.8 | 504.0 |
| full-time                     | 410.9   | 401.2 | 404.1 |
| part-time                     | 36.1    | 44.2  | 41.4  |
| Únemployed                    | 36.0    | 52.4  | 58.5  |
| Unemployment rate (per cent)- | _       |       |       |
| original                      | 7.5     | 10.5  | 11.6  |
| seasonally adjusted           | 7.3     | 10.4  | 11.4  |
| Participation rate (per cent) | 77.0    | 77.6  | 77.0  |
|                               | FEMALES |       |       |
| Civilian population           | 624.8   | 639.8 | 653.2 |
| Labour force—<br>Employed—    | 339.1   | 344.3 | 351.2 |
| full-time                     | 172.8   | 164.1 | 174.0 |
| part-time                     | 140.0   | 146.8 | 144.0 |
| Unemployed                    | 26.3    | 33.4  | 33.3  |
| Unemployment rate (per cent)- |         |       |       |
| original                      | 7.8     | 9.7   | 9.5   |
| seasonally adjusted           | 7.7     | 9.6   | 9.3   |
| Participation rate (per cent) | 54.3    | 53.8  | 53.8  |

#### TABLE 17.1 – LABOUR FORCE STATUS MAY ('000 persons)

Reference: Catalogue No. 6203.0

Western Australia's participation rate (65.4 per cent) remained higher than the national average (63.0 per cent). More people, as a proportion of the population, were employed or looking for work in Western Australia than all other States. Only the Northern Territory and the Australian Capital Territory had higher rates (72.9 and 71.5 per cent respectively).

Table 17.2 demonstrates the high level of unemployment in the Teenage Unemployment 15-19 years age group. From the relatively low 12.0 per cent in 1989, the unemployment rate peaked at 27.4 per cent in February 1992 and stood at 23.5 per cent in May 1992.

> The Labour Force Survey estimated there were 127,400 people in the 15-19 years age group in Western Australia in May 1992; of these 30,800 were employed full-time and 29,300 worked part-time. A total of 18,500 were unemployed. A total of 48,800 were not in the labour force, comprising 32,700 at school, 11,900 attending a tertiary institution full-time and the remainder neither looking for work or studying.

### **Measuring Unemployment**

As a result of the steep rise in unemployment experienced in Western Australia since late 1989, there has been a good deal of public comment on the meaning and measurement of unemployment. Some of this comment has been based on widespread misconceptions about how unemployment figures are derived. This article provides answers to the three most commonly asked questions.

Are Commonwealth Employment Service (CES) registrations used to provide official unemployment figures?

No. Most analysts agree that CES data are neither an accurate measure of unemployment nor a reliable indicator of changes in unemployment. CES figures are based on registrations held in CES offices. While individuals are removed from the register when it becomes aware that registrants are no longer seeking work, the CES is not always informed of this change. As a result, individuals can continue to be registered for some time.

Not all people seeking employment register with the CES, and changes to internal administration procedures and legislation, can serve to add further variation to this measure of unemployment.

In recognition of these and other deficiencies, the Commonwealth government decided in 1978 to recognise the ABS Labour Force Survey as the official measure of unemployment in Australia.

# Can unemployment be measured by numbers receiving Job Search/Newstart Allowance?

No. The Department of Social Security compiles statistics of persons who receive Job Search Allowance (for persons unemployed for less than 12 months) and Newstart Allowance (for persons unemployed for more than 12 months). These statistics are useful in their own right but they do not provide an accurate measure of the number of unemployed persons. Many unemployed persons do not qualify for an allowance (eg because their spouse is employed). Many persons receiving an allowance are not unemployed (eg because their earnings from part-time employment are not sufficient to exclude them from an allowance).

#### Can a full-time student be employed or unemployed?

The definitions of employment and unemployment are applied in exactly the same way to students as they are to all other persons aged 15 years and over. It is recognised that many students obtain or seek employment, while others do not actively seek employment while pursuing their studies.

A student enrolled full-time at an educational institution may also be employed either part-time or full-time, or may be actively looking for and available to commence work, in which case he or she will be counted as unemployed.

| Age group  | 1990  | 1991  | 1992                                      |
|--|---|---|---|
|  | WESTERN AUSTRAL   | IA  |   |
| 15 – 19<br>20 – 24<br>25 – 34<br>35 – 44<br>45 – 54<br>55 and over | 17.1<br>12.5<br>6.8<br>4.7<br>3.8<br>6.0                                    | $19.3 \\ 18.2 \\ 10.6 \\ 6.1 \\ 6.1 \\ 6.7 \\ $ | 23.5<br>15.4<br>9.9<br>6.9<br>7.4<br>10.0 |
| Overall rate   | 7.6   | 10.2  | 10.7                                      |
|  | AUSTRALIA   |   |   |
| 15 – 19<br>20 – 24<br>25 – 34<br>35 – 44<br>45 – 54<br>55 and over | $ \begin{array}{r} 16.0 \\ 9.4 \\ 5.8 \\ 4.1 \\ 4.0 \\ 5.1 \\ \end{array} $ | $22.2 \\ 14.7 \\ 9.1 \\ 6.3 \\ 5.6 \\ 6.7$      | 24.2<br>16.1<br>10.3<br>7.4<br>6.5<br>8.3 |
| Overall rate   | 6.5   | 9.5   | 10.7                                      |

### TABLE 17.2 – LABOUR FORCE UNEMPLOYMENT RATES BY AGE TREND SERIES, MAY

(Per cent) Reference: Catalogue No. 6203.0

#### TABLE 17.3 – CIVILIAN POPULATION (AGE 15+) EMPLOYMENT STATUS, MAY ('000 persons) Reference: Catalogue No. 6203.0

| Employment status WA   | 1990   | 1991  | 1992  |
|--|--|---|---|
|  | MALES  |   |   |
| Employer<br>Self-employed<br>Wage or salary earner<br>Helper, unpaid<br>Unemployed<br>Not in labour force          | 30.4<br>56.6<br>358.1<br>*1.9<br>36.0<br>144.1         | 26.2<br>57.8<br>356.6<br>4.8<br>52.4<br>143.8                 | 24.5<br>57.2<br>361.0<br>2.8<br>58.5<br>150.5                 |
| Total  | 627.1  | 641.6   | 654.4   |
|  | FEMALES  |   |   |
| Employer<br>Self-employed<br>Wage or salary earner<br>Helper, unpaid<br>Unemployed<br>Not in labour force<br>Total | 14.2<br>26.3<br>267.8<br>4.5<br>26.3<br>285.6<br>624.8 | 11.7<br>30.1<br>264.9<br>4.2<br>33.4<br>295.5<br><b>639.8</b> | 11.3<br>27.2<br>274.9<br>4.6<br>33.3<br>302.0<br><b>653.2</b> |

The Composition of the composition of the labour force (Table 17.3) has remained relatively stable over the last few years, the exception being the large increase in the number of unemployed persons, rising 47.4 per cent from 62,300 in 1990 to 91,800 in 1992. In 1992, 78 per cent of females in the labour force were wage and salary earners compared with only 72 per cent of males.

The percentage of females not in the labour force has stabilised over the last three years at 46 per cent. The percentage of males not in the labour force has also remained stable, but at the lower rate of 22 per cent.

**Employment by Industry** Over the period 1990 to 1992, the percentage distribution of employment between industries has varied only slightly. Table 17.4 depicts an emerging trend of decreasing employment in Agriculture, and increases in employment in Service industries, Construction and Mining.

> The 29,400 persons employed in the mining industry represented 32 per cent of Australia's total employment in that industry. Employment continued to be dominated by four major industries: Community services, Retail trade; Finance; and Manufacturing. These industries between them employed 442,400 people or 58 per cent of all workers in Western Australia. Employment in Community Services continued to increase, up 6 per cent from 138,700 people in 1990 to 147,700 people in 1992. Community services consists mainly of the education, welfare and health sectors. Around 75 per cent of jobs in school education are occupied by women.

| Reference: Catalogue No. 6203.0 |       |       |       |  |
|---------------------------------|-------|-------|-------|--|
| Industry division               | 1990  | 1991  | 1992  |  |
| Agriculture, forestry, fishing  |       |       |       |  |
| and hunting                     | 54.5  | 46.6  | 43.6  |  |
| Mining                          | 27.3  | 26.3  | 29.4  |  |
| Manufacturing                   | 89.5  | 84.7  | 83.0  |  |
| Electricity, gas and water      | 10.8  | 10.2  | 9.8   |  |
| Construction                    | 52.0  | 51.7  | 55.7  |  |
| Wholesale trade                 | 45.4  | 41.0  | 41.2  |  |
| Retail trade                    | 121.5 | 121.3 | 121.3 |  |
| Transport and storage           | 36.1  | 40.8  | 38.2  |  |
| Communication                   | 9.7   | 11.8  | 10.3  |  |
| Finance, property               |       |       |       |  |
| and business services           | 88.4  | 91.5  | 90.4  |  |
| Public administration           |       |       |       |  |
| and defence                     | 26.6  | 33.1  | 29.1  |  |
| Community services              | 138.7 | 135.8 | 147.7 |  |
| Recreation, personal            |       |       |       |  |
| and other services              | 59.4  | 61.3  | 63.9  |  |
| Total all industries            | 759.8 | 756.3 | 763.5 |  |

#### TABLE 17.4 – EMPLOYED PERSONS BY INDUSTRY WESTERN AUSTRALIA, MAY ('000 persons)

Average weekly hours worked Since 1948, practically all employees in Australia have had a standard working week of 40 hours or less. However, the number of hours constituting a full week's work (excluding overtime) differs between industries.

The average weekly hours worked by employees over all industries in May 1992 was 35.5 hours per week. The lower average weekly hours worked by females (shown in table 17.5), can be largely attributed to the much greater proportion of females working part-time. Females worked an average of 28.3 hours per week compared to an average for males of 40.6 per week.

The Agriculture and Mining industries are traditionally areas where long hours are worked. The average weekly number of hours worked in agriculture in May 1992 was 43.6 which was 23 per cent more than the overall average of 35.5 hours.

#### TABLE 17.5 – EMPLOYED PERSONS: AVERAGE WEEKLY HOURS WORKED BY INDUSTRY (a) MAY 1992

| Industry                                   | Males | Females | Total |
|--|-------|---------|-------|
| Agriculture, forestry, fishing             |       |         |       |
| and hunting                                | 50.6  | 26.4    | 43.6  |
| Mining                                     | 45.2  | 33.8    | 44.1  |
| Manufacturing                              | 39.0  | 30.2    | 36.9  |
| Electricity, gas and water                 | 38.8  | 31.1    | 38.3  |
| Construction                               | 39.8  | 17.0    | 36.7  |
| Wholesale trade                            | 42.3  | 32.0    | 39.2  |
| Retail trade                               | 40.2  | 27.1    | 33.5  |
| Transport and storage                      | 41.7  | 31.0    | 39.5  |
| Communication                              | 37.0  | 31.1    | 35.7  |
| Finance, property                          |       |         |       |
| Finance, property<br>and business services | 41.5  | 29.3    | 35.6  |
| Public administration                      |       |         |       |
| and defence                                | 35.6  | 30.3    | 33.7  |
| Community services                         | 38.0  | 29.4    | 32.2  |
| Recreation, personal                       |       |         |       |
| and other services                         | 36.1  | 25.1    | 29.7  |
| All industries                             | 40.6  | 28.3    | 35.5  |

Reference: Catalogue No. 6302.0

(a) The estimates refer to actual hours worked, not hours paid for.

Labour Force Supplementary Surveys

There are in excess of 20 supplementary surveys which measure labour force, social and demographic characteristics of households. The supplementary surveys are conducted annually, or less frequently depending on statistical demand, and are grouped as *Educational* and *Other* topics.

Educational topics include:

Labour force status and educational attainment. Transition from education to work. How workers get their training.

Other topics include:

Job search experience of unemployed persons. Weekly earnings of employees. Employment benefits.

*Transition from education to work* This supplementary survey is conducted annually and information collected relates to the month of May. The survey provides data on the characteristics of school, tertiary and other students since leaving their respective institutions. For example, data from the 1992 survey showed the unemployment rate for persons with post-school qualifications was 7.3 per cent compared with 13.2 per cent for persons without post-school qualifications.

More detailed information relating to supplementary surveys is available from ABS Information Services on (09) 323 5140.

Job Vacancies Job vacancy statistics taken together with unemployment statistics, assist in the assessment of the demand for labour. Unemployment and job vacancy statistics should be regarded as complementary indicators. This is because the monthly Labour Force Survey and the quarterly Job Vacancy Survey of employers use different collection methods, sample designs, definitions and concepts.

A *job vacancy* is a job available for immediate filling on the survey date and for which recruitment action had been taken by the employer.

*Recruitment action* includes efforts to fill vacancies by advertising, by factory notices, by notifying employment agencies or trade unions and by contacting, interviewing or selecting applicants already registered with the organisation. Excluded are jobs available only to persons already employed by the organisation. Statistics on job vacancies are produced from a quarterly sample survey of 5,000 employers throughout Australia (500 in Western Australia).

In May 1992, Western Australia had 3,200 job vacancies compared with 2,100 in 1991. The largest number of job vacancies recorded by the survey since it commenced in 1983, was 7,400 in February 1989.

#### Wages and Earnings

Average Weekly Earnings Statistics of average weekly earnings of employees are produced quarterly and are based on employment and earnings information obtained from a sample survey of employers. They relate to earnings for a single weekly pay period ending near the middle of each quarter.

Earnings are taken to be gross earnings for the pay period, before taxation and any other deductions such as superannuation. Statistics are produced for average weekly ordinary earnings (including all allowances, payments, commissions etc), for full-time adults; average weekly total earnings, (ordinary earnings plus overtime), for full-time adults; and average weekly total earnings for all employees.

Table 17.6 shows the large difference between male and female average weekly earnings. In May 1992, average total earnings for all male employees were 60 per cent higher than for females. Much of this discrepancy can be attributed to the large proportion of females who work in part-time jobs. In May 1992, 41 per cent of females were employed part-time, compared with only 8 per cent of males (Table 17.1).

|      |                      |                              | _                              |  |  |
|------|----------------------|------------------------------|--------------------------------|--|--|
|      |                      | Full-time<br>adult employees |                                |  |  |
| Year | Ordinary<br>earnings | Total<br>earnings            | employees<br>Total<br>earnings |  |  |
|      | MALES                |                              |                                |  |  |
| 1987 | 439.60               | 476.60                       | 439.50                         |  |  |
| 1988 | 499.20               | 546.60                       | 509.90                         |  |  |
| 1989 | 542.20               | 591.40                       | 543.70                         |  |  |
| 1990 | 567.20               | 612.60                       | 562.00                         |  |  |
| 1991 | 613.90               | 654.10                       | 597.60                         |  |  |
| 1992 | 635.70               | 682.10                       | 608.60                         |  |  |
|      | FEMALES              |                              |                                |  |  |
| 1987 | 355.40               | 361.60                       | 247.00                         |  |  |
| 1988 | 403.30               | 412.70                       | 297.90                         |  |  |
| 1989 | 437.90               | 447.50                       | 330.20                         |  |  |
| 1990 | 465.10               | 477.60                       | 341.30                         |  |  |
| 1991 | 497.20               | 507.80                       | 366.50                         |  |  |
| 1992 | 522.50               | 532.70                       | 379.70                         |  |  |
|      | PERSONS              |                              |                                |  |  |
| 1987 | 416.80               | 445.40                       | 359.30                         |  |  |
| 1988 | 470.20               | 506.10                       | 418.80                         |  |  |
| 1989 | 507.60               | 543.70                       | 447.80                         |  |  |
| 1990 | 530.70               | 564.40                       | 453.90                         |  |  |
| 1991 | 573.80               | 603.80                       | 489.10                         |  |  |
| 1992 | 595.10               | 628.60                       | 500.60                         |  |  |

TABLE 17.6 - AVERAGE WEEKLY EARNINGS OF EMPLOYEES MAY (\$) Reference: Catalogue No. 6302.0 Over the period 1987 to 1992, average weekly total earnings for females increased at a substantially higher rate (54 per cent) than for males (38 per cent).

Table 17.7 shows that employees in the Mining industry had the highest average weekly earnings of any sector in May 1992. Female earnings are consistently lower than male earnings in all industries, and in the construction industry, on average, males earn 57 per cent more than females.

| FL                                     | Full-time adult employees total earnir |         |  |
|--|--|---------|--|
| Industry                               | Males                                  | Females |  |
| Mining                                 | 1,077.3                                | 758.3   |  |
| Manufacturing                          | 656.8                                  | 494.7   |  |
| Electricity, gas and water             | 677.1                                  | 559.1   |  |
| Construction                           | 773.9                                  | 576.1   |  |
| Retail trade                           | 563.2                                  | 423.4   |  |
| Transport and storage                  | 660.2                                  | 531.8   |  |
| Communication                          | 658.5                                  | 537.0   |  |
| Finance, property and business servic  | es 695.3                               | 520.8   |  |
| Public administration and defence      | 643.2                                  | 543.4   |  |
| Community services                     | 702.7                                  | 558.0   |  |
| Recreation, personal and other service | es 495.6                               | 420.9   |  |
| Total industries (a)                   | 676.9                                  | 521.2   |  |

# TABLE 17.7 – AVERAGE WEEKLY EARNINGS OF EMPLOYEES BY INDUSTRY, NOVEMBER 1992 (\$) Reference: Catalogue No. 6302.0

(a) Excludes Agriculture.

Labour Costs Labour costs are those costs, paid by the employer, associated with the employment of labour. Details of major labour costs, such as earnings, payroll tax, superannuation, workers compensation and fringe benefits tax, are collected through an annual survey of approximately 500 employers in the public and private sectors (Tables 17.8 and 17.9).

With the exception of superannuation, the composition of major labour costs remained relatively constant in both the public and private sectors between 1988-89 and 1990-91. The major labour cost in both sectors was employee earnings, accounting for approximately 90 per cent of total labour costs. The cost of providing superannuation continued to rise in line with government policy, which encourages employers to become more responsible for the provision of adequate superannuation coverage for their employees. In 1991-92, superannuation accounted for 8.3 per cent of labour costs in the public sector.

It is important to note that owing to differences in the compilation of superannuation statistics, no direct comparisons can be made between public and private sector superannuation costs.

| Type of cost   | <u>19</u><br>\$m                                      | <u>988-89</u><br>%                                     | <u>19</u><br>\$m                               | 189-90<br>%                                      | <u>19</u><br>\$m                               | 90-91<br>%                                       |
|--|---|--|--|--|--|--|
|  | PRIVAT  | TE SECTO   | R  |  |  |  |
| Gross wages and salaries   | 7,464   | 90.2   | 8,461  | 90.0   | 7,844  | 89.5   |
| Other—<br>Payroll tax<br>Workers' compensation<br>Superannuation<br>Fringe benefits tax<br>Total other<br><b>Total</b> | 294<br>218<br>231<br>65<br><i>808</i><br><b>8,271</b> | 3.6<br>2.6<br>2.8<br>0.8<br><i>9.8</i><br><b>100.0</b> | 355<br>200<br>313<br>76<br>944<br><b>9,405</b> | 3.8<br>2.1<br>3.3<br>0.8<br>10.0<br><b>100.0</b> | 329<br>172<br>339<br>82<br>921<br><b>8,766</b> | 3.8<br>2.0<br>3.9<br>0.9<br>10.5<br><b>100.0</b> |
|  |   | C SECTOR   |  | 10000  |  |  |
|  | TODLI   |  |  |  |  |  |
| Gross wages and salaries   | 3,891   | 89.7   | 4,104  | 88.2   | 4,526  | 88.0   |
| Other—<br>Payroll tax<br>Workers' compensation<br>Superannuation<br>Fringe benefits tax                                | 81<br>93<br>259<br>13                                 | 1.9<br>2.1<br>6.0<br>0.3                               | 92<br>77<br>366<br>14                          | 2.0<br>1.7<br>7.9<br>0.3                         | 102<br>76<br>425<br>16                         | 2.0<br>1.5<br>8.3<br>0.3                         |
| Total other  | 445   | 10.3   | 548  | 11.8   | 618  | 12.0   |
| Total  | 4,336   | 100.0  | 4,652  | 100.0  | 5,144  | 100.0  |

# TABLE 17.8 – MAJOR LABOUR COSTSReference: Catalogue No. 6348.0

#### TABLE 17.9 – MAJOR LABOUR COSTS PER EMPLOYEE Reference: Catalogue No. 6348.0

| Type of cost  | $\frac{1}{\$}$            | <u>988-89</u><br>%       | $\frac{1}{\$}$            | 989-90<br>%              | $\frac{1}{\$}$               | 990-91<br>%              |
|---|---------------------------|--------------------------|---------------------------|--------------------------|------------------------------|--------------------------|
|   | PRIVAT                    | TE SECTO                 | DR                        |                          |                              |                          |
| Gross wages and salaries  | 21,998                    | 90.2                     | 23,762                    | 90.0                     | 23,899                       | 89.5                     |
| Other—<br>Payroll tax<br>Workers' compensation<br>Superannuation<br>Fringe benefits tax | 865<br>643<br>665<br>191  | 3.6<br>2.6<br>2.8<br>0.8 | 996<br>562<br>880<br>213  | 3.8<br>2.1<br>3.3<br>0.8 | 1,002<br>525<br>1,032<br>249 | 3.8<br>2.0<br>3.9<br>0.9 |
| Total other   | 2,380                     | 9.8                      | 2,651                     | 11.8                     | 2,807                        | 10.5                     |
| Total   | 24,378                    | 100.0                    | 26,413                    | 100.0                    | 26,707                       | 100.0                    |
|   | PUBLI                     | C SECTO                  | R                         |                          |                              |                          |
| Gross wages and salaries  | 25,056                    | 89.7                     | 26,510                    | 88.2                     | 28,306                       | 88.0                     |
| Other—<br>Payroll tax<br>Workers' compensation<br>Superannuation<br>Fringe benefits tax | 519<br>602<br>1,677<br>81 | 1.9<br>2.2<br>6.0<br>0.3 | 591<br>498<br>2,363<br>88 | 2.0<br>1.7<br>7.9<br>0.3 | 635<br>472<br>2,656<br>100   | 2.0<br>1.5<br>8.3<br>0.3 |
| Total other   | 2,879                     | 10.3                     | 3,540                     | 11.8                     | 3,863                        | 12.0                     |
| Total   | 27,938                    | 100.0                    | 30,050                    | 100.0                    | 32,168                       | 100.0                    |

### Disability Reform Package - Focus on Ability

contributed by Department of Employment, Education and Training

The Disability Reform Package (DRP) commenced in November 1991 and is a cooperative venture between the Federal Departments of Employment, Education and Training (DEET), Social Security (DSS) and Health, Housing and Community Services (DHHCS).

The goal of the DRP is to provide people with disabilities who wish to work, with vocational rehabilitation, education, training and job placement, and support programs to enable them to enter or return to the workforce. At the same time it provides secure income support for those who need it.

The philosophy underlying the DRP is encapsulated in its motto: "Focus on Ability". Employers are encouraged to focus on the skills and abilities of jobseekers with disabilities when selecting staff. Two people for whom this philosophy has been successful are Glen Benporath and Lorna Wheatland.

Glen Benporath, of Albany, a 20 year old with an intellectual disability, is typical of the jobseeker who can benefit from the opportunities offered by the DRP. Through the DRP Glen sought job search assistance from Great Southern Personnel, a community-based employment agency providing Competitive Employment Training and Placement Programs (CETP), funded under the Disability Services Program (within DHHCS). Three months later, Glen started work as assistant caretaker at the Princess Royal Fortress, Albany. Lorna Wheatland, 50 years old, had been an invalid pensioner since 1986 following a back injury. Through the DRP Lorna commenced a SkillShare word processing/commercial course to upgrade her skills. Before the course finished Lorna found work and commenced, utilising JOBSTART, a DEET funded wage subsidy scheme. Under JOBSTART, employers may be eligible not only for a wage subsidy, but where necessary, financial assistance to undertake modifications to their premises in order to accommodate a person with a disability.



Glen Benporath (left) at work as assistant caretaker at the Princes Royal Fortress, Albany. *Photograph:* Courtesy of DEET and Glen Benporath.

### Labour Market \_\_\_\_\_

### **Industrial Authorities**

| Federal Authorities               | The Federal Court of Australia comprises an Industrial Division<br>and a General Division. The Industrial Division deals with all<br>proceedings under the <i>Conciliation and Arbitration Act 1904</i> and<br>related legislation. A single Judge and the Industrial Relations<br>Commission may refer a question of law for the opinion of the<br>Court. Appeal from a judgement of a Full Court may, in certain<br>circumstances, be made to the High Court of Australia.  |
|-----------------------------------|---|
|                                   | Industrial Relations Commission has jurisdiction to prevent and<br>to settle industrial disputes extending beyond the limits of any<br>one State. The work of the Commission is normally done by<br>individual members, however, certain matters must be<br>determined by a Full Bench of the Commission consisting of at<br>least three members, of which two must be presidential members.<br>A Full Bench of the Commission also deals with appeals and<br>references from single members of the Commission.           |
| Western Australian<br>Authorities | The Western Australian Industrial Relations Commission may<br>inquire into any industrial matter and make an award, order or<br>declaration relating to such a matter. The Commission may also<br>make inquiries where industrial action has occurred or is likely to<br>occur. The Commission in Court Session may make General<br>Orders, hear matters referred by the Commission, and hear<br>appeals from decision of Boards of Reference.  |
| Industrial Disputes               | Industrial disputes statistics relate only to disputes which involve<br>stoppages of ten working days or more at the establishment<br>where the stoppage occurred. The effects these disputes have on<br>other establishments, such as stand downs because of lack of<br>materials, disruption of transport services, power cuts etc., are not<br>included. In 1991, the mining industry experienced the largest<br>number of disputes, while the manufacturing industry had the<br>most working days lost (Table 17.10). |
|                                   | Details of stoppages are obtained primarily from the Department   |

Details of stoppages are obtained primarily from the Department of Industrial Relations, trade journals, publications, newspapers and the employers and trade unions involved in the dispute.

| Industry  | 1989                               | 1990                | 1991                 |
|---|------------------------------------|---------------------|----------------------|
| NL  | IMBER OF DISPUT                    | ES                  |                      |
| Mining<br>Manufacturing<br>Construction                     | 112<br>7<br>49                     | 99<br>10<br>25      | 102<br>11<br>12      |
| Transport, storage<br>and communication<br>Other industries | 24<br>36                           | 25<br>31            | 11<br>20             |
| Total   | 228                                | 190                 | 156                  |
|   | DRKING DAYS LO<br>thousand employe |                     |                      |
| Mining<br>Manufacturing<br>Construction                     | 17.8<br>2.3<br>26.5                | 30.0<br>48.4<br>5.7 | 24.6<br>76.5<br>14.2 |
| Transport, storage<br>and communication<br>Other industries | 2.5<br>53.0                        | 8.5<br>15.8         | 1.2<br>2.6           |
| Total   | 102.1                              | 108.4               | 119.1                |

# TABLE 17.10 - INDUSTRIAL DISPUTES BY INDUSTRY<br/>Reference: Catalogue No. 6322.0

### References

| ABS publications | Average Weekly Earnings, States and Australia (6302.0)  |
|------------------|---|
|                  | Award Rates of Pay Indexes, Australia (6312.0)          |
|                  | Employment Benefits (6334.0)                            |
|                  | How Workers Get Their Training (6278.0)                 |
|                  | Industrial Disputes, Australia (6322.0)                 |
|                  | Job Search Experience of Unemployed Persons (6222.0)    |
|                  | Labour Costs, Australia (6348.0)                        |
|                  | The Labour Force, Australia (6203.0)                    |
|                  | Labour Force Status and Educational Attainment (6235.0) |
|                  | Labour Statistics (6101.0)                              |
|                  | Transition From Education to Work (6227.0)              |
|                  | Weekly Earnings of Employees (6310.0)                   |
|                  |   |

Labour Market \_\_\_\_\_

## CONSUMER AND PRODUCER PRICES 18



## Chapter 18

# **CONSUMER AND PRODUCER PRICES**

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### Chapter 18

# **CONSUMER AND PRODUCER PRICES**

#### The Consumer Price Index

The Consumer Price Index (CPI) measures quarterly price changes of a 'basket' of goods and services which account for a high proportion of expenditure by metropolitan employee households. This 'basket' covers a range of goods and services arranged in eight groups: Food; Clothing; Housing; Household equipment and operation; Transportation; Tobacco and alcohol; Health and personal care; and Recreation and education. The eight groups in turn are divided into thirty five sub-groups and 107 expenditure classes. Indexes at the sub-group level and for individual expenditure classes are available on request. The CPI was published for the first time in August 1960 and was compiled retrospectively to the September quarter 1948.

|   | All<br>groups<br>index<br>Perth  | Weighted<br>average<br>of eight<br>capital<br>cities |
|---|----------------------------------|--|
| 1989-90<br>1990-91<br>1991-92                     | 100.0<br>105.1<br>105.9          | 100.0<br>105.3<br>107.3                              |
| 1989-90<br>December<br>March<br>June              | 98.9<br>101.2<br>102.9           | 99.2<br>100.9<br>102.5                               |
| 1990-91<br>September<br>December<br>March<br>June | 103.7<br>106.2<br>105.2<br>105.1 | 103.3<br>106.0<br>105.8<br>106.0                     |
| 1991-92<br>September<br>December<br>March<br>June | 105.7<br>106.1<br>106.1<br>105.6 | 106.6<br>107.6<br>107.6<br>107.3                     |
| 1991-92<br>September<br>December                  | 105.5<br>106.1                   | 107.4<br>107.9                                       |

#### TABLE 18.1 – CONSUMER PRICE INDEX, PERTH (Base year 1989-90 = 100) Reference: Catalogue No. 6401.0

*CPI Population Group* Due to dissimilar spending patterns of various groups in the population, the pattern of one group, fairly homogeneous in its spending habits, is chosen for calculating the CPI.

This population group is, in concept, *metropolitan employee households*. For this purpose, *employee households* are those households which obtain at least three-quarters of their total income from wages and salaries, excluding the top ten per cent (in terms of income) of such households. *Metropolitan* means the six state capital cities and Canberra and Darwin.

*Weighting Pattern* Each of the 107 expenditure classes in the current CPI has a fixed weight (i.e. the measure of its relative importance) which reflects the expenditure pattern of the CPI population group, as derived from Household Expenditure Surveys and other data collected by the ABS.

More detailed information on weighting is published in *The Australian Consumer Price Index: Concepts, Sources and Methods* (Catalogue No. 6461.0)

*Periodic Reviews* The CPI is reviewed at approximately five-yearly intervals to take account of changes in household spending patterns. Following each review, the new series, with its changed composition and weighting pattern, is linked to the previous series to form one continuous series.

The eleventh series of the CPI began with the release of the March quarter 1987 CPI and incorporated the following changes: expenditure on the purchase of dwellings was replaced by expenditure on mortgage interest charges; interest charges for consumer credit used for household purposes other than dwelling purchase were included; expenditure on optical services, veterinary services and watches and clocks were included; and the range of fresh fruit and vegetables included in the index was expanded.

Price Collection Since the CPI is designed to measure the impact of changing prices on metropolitan employee households, information about prices is collected in the kinds of retail outlets or other establishments where households normally purchase goods or services. This involves collecting prices from many sources, including supermarkets, electrical appliance retailers, doctors, dentists, car dealers and repairers, service stations, hotels, real estate agents and financial institutions. For Perth, about 13,000 separate quotations are collected each quarter.

Prices are generally collected quarterly. However, for some important items, prices are collected more frequently (e.g. petrol, alcohol, bread, fish, fresh meat, fruit and vegetables) and a small number are collected annually (e.g. seasonal clothing, local government rates and charges). Prices used in the CPI are those that any member of the public would have to pay on the pricing day to purchase the specified good or service. Any sales tax or excise which the consumer must pay when purchasing specific items is included in the CPI price. Sale prices, discount prices and 'specials' are accepted for the CPI so long as the items concerned are of normal quality (e.g. not damaged or shop soiled) and are offered for sale in reasonable quantities.

To ensure that the price movements reflect the experience of the bulk of the metropolitan population, the brands and varieties of the items which are priced are generally those which sell in the greatest volume.

*Analysis of CPI* Movements in the CPI from one period to another can be expressed either as changes in index points or as percentage changes.

The following example illustrates the method of calculating index points changes and percentage changes between any two periods:

All Groups CPI: Perth

| Index numbers:               |              |
|------------------------------|--------------|
| December quarter 1992        | 106.1        |
| less: September quarter 1992 | <u>105.5</u> |
| Change in index points       | +0.6         |

Percentage change =  $+0.6 \times \frac{100}{105.5} = 0.6\%$ 

House Price Indexes House price indexes are compiled for use in calculating the mortgage interest charges component of the CPI. Separate indexes are constructed for established houses and project homes, and are published quarterly for each of the capital cities in *House Price Indexes: Eight Capital Cities* (Catalogue No. 6416.0).

Average Retail Prices for Selected Commodities 'Average prices' of a limited range of commodities are recorded in the Blue Books of Western Australia from the early colonial years and in the Western Australian Year Book (Old Series) from 1886. Retail prices of food and groceries and average rentals of houses for years extending back to 1901 have been collected by the Australian Statistician, but it was not until 1911 that a systematic collection of retail price statistics for compiling retail price indexes began. Since 1962 average retail prices for a range of selected (mainly food) items have been published quarterly in Average Retail Prices of Selected Items (Catalogue No. 6403.0).

|  |                    | December quarter |              |            |  |
|--|--------------------|------------------|--------------|------------|--|
| Item   | Unit               | 1990             | 1991         | 1992       |  |
| Dairy produce—                                 |                    |                  |              |            |  |
| Milk, carton,                                  |                    |                  |              |            |  |
| supermarket sales                              | 1 litre            | 94               | 95<br>146    | 102<br>175 |  |
| Butter   | 500g               | 183              | 146          | 175        |  |
| Cereal products—<br>Bread, white loaf, sliced, |                    |                  |              |            |  |
| supermarket sales                              | 680g               | 131              | 147          | 156        |  |
| Breakfast cereal,                              | 550                | 200              | 01.1         | 222        |  |
| corn based (a)<br>Flour, self-raising          | 550g<br>2 kg       | 290<br>194       | 314<br>171   | 323<br>185 |  |
| Meat and seafoods—                             | 2 18               | 171              | 171          | 100        |  |
| Beef   |                    |                  |              |            |  |
| Rump steak                                     | 1 kg               | 1,020            | 1,049        | 1,024      |  |
| T-bone steak, with fillet<br>Chuck steak       | 1 kg<br>1 kg       | 978<br>597       | 1,017<br>665 | 988<br>695 |  |
| Sausages                                       | 1 kg               | 392              | 375          | 378        |  |
| Lamb   |                    |                  |              |            |  |
| Leg<br>Lein chons                              | 1 kg               | 551<br>677       | 511<br>695   | 513<br>725 |  |
| Loin chops<br>Pork                             | 1 kg               | 677              | 095          | 723        |  |
| Leg  | 1 kg               | 586              | 616          | 612        |  |
| Loin chops                                     | 1 kg               | 758              | 784          | 774        |  |
| Chicken, frozen<br>Bacon, middle rashers       | 1 kg<br>250g pkt   | 370<br>309       | 318<br>300   | 312<br>314 |  |
| Salmon, pink                                   | 210g can           | 271              | 234          | 239        |  |
| Fresh fruit and vegetables-                    |                    |                  |              |            |  |
| Bananas  | 1 kg               | 231              | 178          | 178        |  |
| Potatoes<br>Tomatoes                           | 1 kg<br>1 kg       | 121<br>269       | 115<br>330   | 108<br>262 |  |
| Carrots  | 1 kg               | 96               | 94           | 92         |  |
| Onions   | 1 kg               | 123              | 79           | 74         |  |
| Processed fruit and vegetab                    | les—               |                  |              |            |  |
| Pineapple, sliced                              | 450g can           | 90<br>152        | 90<br>135    | 94<br>138  |  |
| Peas, frozen                                   | 500g pkt           | 152              | 155          | 150        |  |
| Other food—<br>Eggs                            | 53g 1 dozen        | 194              | 191          | 188        |  |
| Sugar, white                                   | 2 kg               | 222              | 198          | 190        |  |
| Tea  | 250g               | 171              | 177          | 170        |  |
| Coffee, instant<br>Tomato sauce                | 150g jar<br>600 ml | 448<br>183       | 440<br>185   | 411<br>189 |  |
| Margarine,                                     | 000 111            | 100              | 100          | 107        |  |
| poly-unsaturated                               | 500 g              | 159              | 142          | 126        |  |
| Baked beans,<br>in tomato sauce                | 440 g              | 92               | 97           | 94         |  |
| Household supplies and ser                     | 0                  | 72               | 27           | 71         |  |
| Dishwashing detergent                          | 1 litre            | 446              | 449          | 459        |  |
| Toilet paper                                   | 4 x 300            |                  |              |            |  |
|  | sheet rolls        | 362              | 314          | 322        |  |
| Private motoring—                              | 1 litro            | 80.0             | 67.5         | 68.7       |  |
| Petrol, super grade                            | 1 litre            | 80.9             | 07.5         | 00.7       |  |
| Alcoholic beverages—<br>Beer, full strength,   | 24 x 375 ml        |                  |              |            |  |
| unchilled (b)                                  | stubbies           | 2,120            | 2,395        | 2,311      |  |
| Draught beer, full                             | 285 ml             | 1/0              | 1//          | 174        |  |
| strength, public bar                           | glass              | 160              | 166          | 176        |  |
| Personal care products—<br>Toilet soap (c)     | 4 x 125g           | 163              | 166          | 233        |  |
| Tonet Joap (c)                                 | 1 / 1208           | 100              | 100          |            |  |

# TABLE 18.2 – AVERAGE RETAIL PRICES OF SELECTED ITEMS: PERTH (cents) Reference: Catalogue No. 6403.0

(a) Prior to 1991, prices relate to 500 gram packets. (b) Prior to 1992, prices relate to 12 x 750 ml bottles. (c) Prior to 1992, prices relate to 2 x 125 gram packs.

Wholesale PriceThere are two separate monthly price index series for materialsIndexesused in building.

Measures changes in prices of selected materials used in the construction of houses. For this index the weights reflect the usage of materials in detached single dwelling units constructed in the Perth Statistical Division in 1985-86.

The All Groups index numbers for Perth in the three years to 1991-92 were:

| 1989-90 | 140.8 |
|---------|-------|
| 1990-91 | 148.7 |
| 1991-92 | 149.3 |

Price Index of Materials Used in Building Other than Home Building

Price Indexes of

Materials used in

Building

Measures changes in prices of selected materials used in the construction of buildings other than houses. The weights used in this index are based on the usage of materials in the construction of buildings commenced in the six state capital cities in the three years ended June 1977. The same weighting pattern is used for each of the six capital cities.

#### TABLE 18.3 – PRICE INDEX OF MATERIALS USED IN BUILDING OTHER THAN HOUSE BUILDING PERTH

(Base year 1979-80 = 100) Reference: Catalogue No. 6407.0

| Materials                      | 1989-90 | 1990-91 | p1991-92 |
|--------------------------------|---------|---------|----------|
| Selected major building materi | als—    |         |          |
| Structural timber              | 239.2   | 246.4   | 237.8    |
| Clay bricks                    | 217.4   | 234.5   | 239.6    |
| Ready mixed concrete           | 220.5   | 245.6   | 255.8    |
| Precast concrete products      | 218.6   | 239.7   | 252.5    |
| Galvanised steel decking,      |         |         |          |
| cladding, etc.                 | 232.1   | 243.9   | 237.6    |
| Structural steel               | 273.3   | 276.6   | 262.5    |
| Reinforcing steel bar,         |         |         |          |
| fabric and mesh                | 219.5   | 236.0   | 232.1    |
| Aluminium windows              | 244.3   | 254.8   | 251.6    |
| Steel windows, doors,          |         |         |          |
| louvres, etc.                  | 236.3   | 254.3   | 249.8    |
| Builders' hardware             | 240.6   | 255.7   | 268.3    |
| Sand, aggregate and filling    | 248.1   | 270.0   | 278.3    |
| Carpet                         | 227.2   | 235.3   | 236.3    |
| Paint                          | 241.8   | 251.4   | 270.3    |
| Non-ferrous pipes              | 228.6   | 228.6   | 224.4    |
| Special combinations of        |         |         |          |
| building materials—            |         |         |          |
| All electrical materials       | 288.8   | 309.4   | 303.1    |
| All mechanical services        | 247.9   | 254.9   | 259.6    |
|                                | 234.9   | 246.9   | 239.0    |
| All plumbing materials         |         |         |          |
| All groups                     | 240.0   | 253.2   | 252.5    |

For both of these indexes, prices are collected at the mid-point of each month from representative suppliers. In general, the point of pricing is delivered on site, but in some cases it may be necessary to accept other pricing points, e.g. supplied and fixed.

A major influence on prices of building materials is the level of demand. The reduced demand for the construction of buildings is reflected in the reduction in the rate of increase of the price of materials, as shown in these indexes. More information on building activity can be found in Chapter 13 — Housing and Construction.

- Other Price Indexes In addition to the indexes already described, the ABS compiles price indexes related to the prices of selected import and export commodities, copper materials, materials used in manufacturing industries and articles produced by manufacturing industries. These monthly indexes are published on a national basis only. For further reference to these indexes, see *Year Book Australia* (Catalogue No. 1301.0) and other references listed at the end of this Chapter.
- Household During 1974-75 and 1975-76, the ABS conducted two surveys in order to obtain information about the expenditure patterns of private households. The 1974-75 survey was confined to a sample of households in the six state capital cities and Canberra, while the coverage of the 1975-76 survey was extended to include other urban and rural regions. Apart from limited attempts in 1910-11 and 1913 to assess the spending patterns of Australian households, these surveys were the first official collections of household expenditure statistics conducted in this country.

Further household expenditure surveys were conducted by the ABS in 1984 and for the financial year 1988-89. Coverage of these surveys, as in 1975-76, included households in urban and rural areas, except remote and sparsely settled areas.

The principal aim of the surveys was to measure levels and patterns of expenditure on commodities and services by private households, and to identify key factors which influence these levels and patterns. Other uses for the data obtained include the provision of information for updating the weighting pattern of the CPI, and development of government policy and planning for specific components of expenditure (e.g. housing, health and transport). Table 18.4 shows household expenditure for Western Australia based on the 1988-89 Household Expenditure Survey, compared with data from the 1984 survey. Since the 1984 survey, both average weekly household income and expenditure on commodities and services have increased in similar proportions. The most significant household outlays on commodities and services were on food and non-alcoholic beverages, transport and current housing costs.

|   |          | 1984                        | 1988-89 |                             |  |
|---|----------|-----------------------------|---------|-----------------------------|--|
|   | \$       | Per cent of<br>total income | \$      | Per cent of<br>total income |  |
| waraga waakly baycab                          | old over | anditure (b)                |         |                             |  |
| verage weekly househ<br>Commodity or service- |          |                             |         |                             |  |
| Current housing costs                         |          |                             |         |                             |  |
| (selected dwelling)                           | 41.50    | 9.2                         | 65.26   | 10.0                        |  |
| Fuel and power                                | 10.37    | 2.3                         | 13.18   | 2.0                         |  |
| Food and                                      | 20107    | 210                         | 20120   | 2.0                         |  |
| non-alcoholic                                 |          |                             |         |                             |  |
| beverages                                     | 69.18    | 15.3                        | 97.04   | 14.9                        |  |
| Alcoholic beverages                           | 13.24    | 2.9                         | 18.56   | 2.8                         |  |
| Tobacco                                       | 6.27     | 1.4                         | 7.18    | 1.1                         |  |
| Clothing                                      |          |                             |         |                             |  |
| and footwear                                  | 20.72    | 4.6                         | 29.31   | 4.5                         |  |
| Household furnishing                          | ζS       |                             |         |                             |  |
| and equipment                                 | 28.54    | 6.3                         | 42.53   | 6.5                         |  |
| Household services                            |          |                             |         |                             |  |
| and operation                                 | 15.74    | 3.5                         | 24.48   | 3.8                         |  |
| Medical care and                              |          |                             |         |                             |  |
| health expenses                               | 12.72    | 2.8                         | 20.10   | 3.1                         |  |
| Transport                                     | 62.47    | 13.8                        | 79.56   | 12.2                        |  |
| Recreation                                    | 46.50    | 10.3                        | 57.07   | 8.8                         |  |
| Personal care                                 | 6.24     | 1.4                         | 10.97   | 1.7                         |  |
| Miscellaneous                                 |          |                             |         |                             |  |
| commodities                                   |          |                             |         |                             |  |
| and services                                  | 26.52    | 5.8                         | 46.81   | 7.2                         |  |
| otal commodity or                             |          |                             |         |                             |  |
| <pre>service expenditure(c)</pre>             | 360.01   | 79.5                        | 512.05  | 78.6                        |  |
| Average weekly                                |          |                             |         |                             |  |
| household income                              | 452.87   |                             | 651.80  | -                           |  |

#### TABLE 18.4 – AVERAGE WEEKLY HOUSEHOLD EXPENDITURE AND INCOME (a) (b)

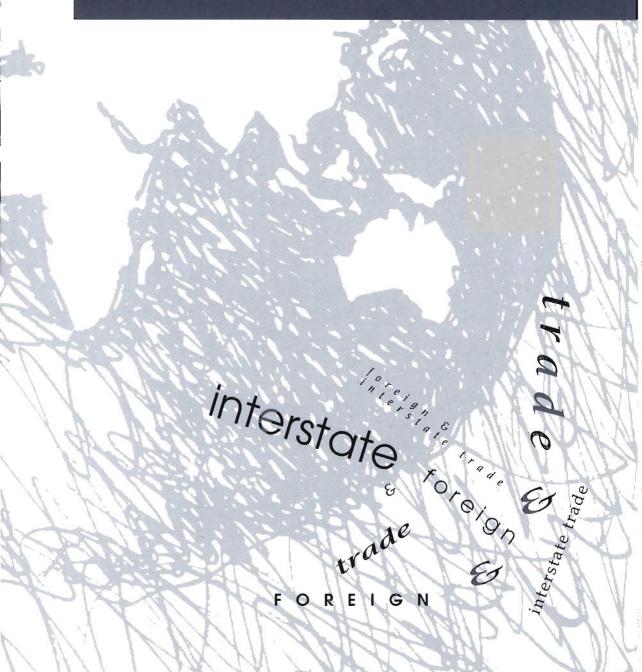
(a) To enable a direct comparison of household income from the 1984 and 1988-89 surveys, the 1984 concept of income has been applied to the 1988-89 data. This entailed setting negative components of household income to zero. For more detailed information refer to the reference publication. (b) The average obtained when the total estimated expenditure for a particular broad expenditure group is divided by the estimated number of households within the scope of the survey. (c) Excludes payments such as income tax, superannuation and insurance and capital housing costs.

### **Consumer and Producer Prices**

#### References

ABS Publications Australian Producer and Foreign Trade Price Indexes: Concepts, Sources and Methods (6419.0) The Australian Consumer Price Index: Concepts Sources and Methods (6461.0)Average Retail Prices of Selected Items: Eight Capital Cities (6403.0) Consumer Price Index (6401.0) Export Price Index (6405.0) A Guide to the Consumer Price Index: Eleventh Series (6440.0) House Price Indexes: Eight Capital Cities (6416.0) Household Expenditure Survey by States and Territories (6533.0) Import Price Index (6414.0) Information Paper: The Australian Consumer Price Index Treatment of Mortgage Interest Charges (6442.0) Information Paper: 1988-89 Household Expenditure Survey, Australia (6527.0)Information Paper: Review of the Consumer Price Index (6450.0) Labour Report No. 58, 1973 Price Index of Materials Used in Building Other than House Building (6407.0)Price Index of Materials Used in House Building (6408.0) Price Indexes of Articles Produced by Manufacturing Industry (6412.0) Price Indexes of Copper Materials (6410.0) Price Indexes of Materials Used in Coal Mining (6415.0) Price Indexes of Materials Used in Manufacturing Industries (6411.0)

## FOREIGN AND INTERSTATE TRADE 19



# FOREIGN AND INTERSTATE TRADE

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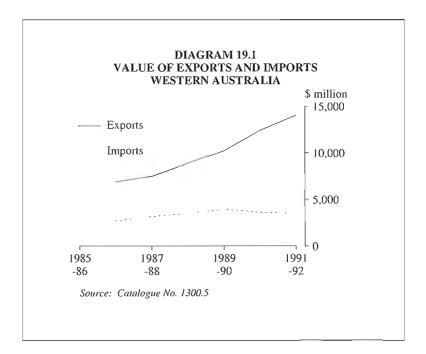
### Chapter 19

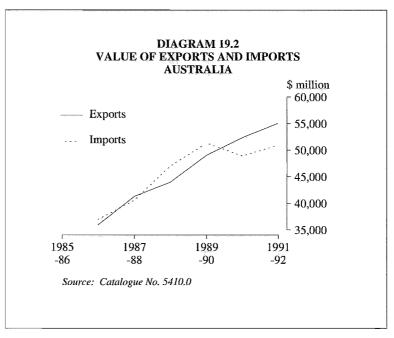
## FOREIGN AND INTERSTATE TRADE

| Pattern | of    |
|---------|-------|
| Foreign | Trade |

The value of Western Australian exports have increased continuously since 1966:

- in 1991-92, exports were nearly four times the value of imports. The ratio of exports to imports has risen progressively for the last three financial years; from 2.56 (1989-90), to 3.42 (1990-91) and 3.96 (1991-92); however,
- Western Australia is still heavily reliant on the export of commodities such as iron ore, gold bullion, petroleum and petroleum products, wheat and wool. The top four major commodity exports from Western Australia have, over the last three financial years, represented an increasing proportion of total exports to foreign countries. In 1989-90, the proportion was 42.3 per cent; in 1990-91, 43.2 per cent and in 1991-92, it was 49.9 per cent;
- exports continue to make an increasing contribution to Western Australia's Gross State Product (GSP), at market prices; in 1989-90, exports comprised 27.8 per cent of GSP; in 1990-91, 32.5 per cent; in 1991-92, 35.6 per cent; and





there is evidence to suggest that, despite adverse trading conditions, more markets are being found for Western Australian exports.

Western Australia's contribution, in percentage terms, to total Australian exports has increased steadily during the last three financial years. In 1989-90, Western Australia was ranked third with 21 per cent of total exports; by 1990-91, it was ranked first, contributing 24 per cent and in 1991-92, remained the biggest export supplier by increasing its contribution to 26 per cent. Diagrams 19.1 and 19.2 compare the different trends in export and import performance between Western Australia and Australia.

Japan continues to be the major export market and is also the second largest import supplier. The bulk of Western Australia's exports are concentrated in a few major markets:

- in 1989-90, the top ten export markets accounted for 71.2 per cent of total exports; in 1990-91, 78.2 per cent but in 1991-92, the market share was down to 66.4 per cent;
- the figures suggest that in 1991-92, additional markets have been found. This is reflected by some large market shifts; a fall in exports to the United States of America (by 73 per cent) offset by a large rise in the value of exports to countries in the 'other countries' category (by 1,599 per cent) and a decline in exports to the Group of Seven (G7) nations from 51.1 per cent in 1990-91 to 37.4 per cent in 1991-92;
- Western Australia's export markets are heavily concentrated in the Asia region. The ASEAN nations (Singapore, Thailand,

Exports

Malaysia, Indonesia, the Philippines and Brunei) combined with the major North Asia economies (Japan, Republic of Korea, Hong Kong, China, and Taiwan province) received 50.5 per cent (or \$5,162 million) of total exports in 1989-90, 59.0 per cent (or \$7,330 million) in 1990-91 and 58.6 per cent (or \$8,233 million) in 1991-92.

Western Australia's main exports in 1991-92 were:

- iron ore (\$2,818 million or 20.1 per cent of total exports);
- gold bullion (\$2,466 million or 17.6 per cent of total exports);
- petroleum and petroleum products (\$875 million);
- wheat (\$839 million); and
- wool, greasy and degreased, (\$659 million).

Gold bullion has recorded a huge leap in exports - from \$332 million in 1989-90 to \$2,466 million in 1991-92 (a rise of 642.8 per cent).

*Imports* The top three import suppliers since 1989-90 are Japan, the United States of America and the United Arab Emirates. The United States of America has now become our main source of imported goods and services. While the composition of the top ten import suppliers has shown few changes in the last three financial years, the proportion they represent of total imports has been declining. In 1989-90 they supplied 74.8 per cent of total imports; in 1990-91, 72.4 per cent; and in 1991-92, 68.4 per cent. As with exports, the bulk of imports have tended to be sourced from a few major suppliers; however 1991-92 saw 'other countries' supply goods and services worth \$364.4 million compared to only \$95.6 million in 1990-91.

Petroleum and petroleum products (18.5 per cent), road vehicles (11.5 per cent) and general industrial machinery and equipment (5.7 per cent) were, in dollar terms, the largest imports.

The Customs Tariff The first Commonwealth Customs Tariff was introduced on 8 October 1901, from which date uniform duties came into effect throughout Australia. The Australian Customs Tariff was developed in conformity with the policy of protecting economic and efficient Australian industries and of granting preferential treatment to imports from certain countries. Duties are also imposed on some other goods, generally of a luxury nature, for revenue purposes. Customs collections are a major source of revenue, but in its protective character, the tariff had an important influence on the Australian economy.

The Harmonised<br/>CommodityForeign trade statistics are compiled from information contained<br/>in documents prepared by importers and exporters, or their<br/>agents, in accordance with the Customs Act. Particulars of<br/>Western Australia's foreign trade, as presented in this chapter, are

| Origin or destination             | Imports         | Exports    |
|-----------------------------------|-----------------|------------|
| Overseas—                         |                 |            |
| Argentina                         | 6,200           | 705        |
| Bahrain                           | 2,083           | 5,545      |
|                                   | 846             | 583        |
| Bangladesh<br>Balaium Luuramhaura |                 |            |
| Belgium-Luxembourg                | 26,729          | 199,94(    |
| Brazil                            | 14,316          | 16,888     |
| Canada                            | 37,414          | 62,888     |
| China                             |                 |            |
| (excluding Taiwan Province)       | 75 <i>,</i> 386 | 487,719    |
| Taiwan Province only              | 87,792          | 514,365    |
| Christmas Island                  | 8               | 7,440      |
| Denmark                           | 7,748           | 1,10       |
| Egypt                             | 221             | 24,624     |
| Fiji                              | 31              | 4,018      |
| Finland                           | 25,682          | 29,07      |
| France                            | 94,399          | 181,042    |
|                                   |                 |            |
| Germany                           | 152,815         | 264,790    |
| Hong Kong                         | 25,350          | 539,59     |
| India                             | 15,851          | 63,32      |
| Indonesia                         | 120,014         | 159,469    |
| Iran                              | 614             | 28,320     |
| Italy                             | 102,979         | 182,870    |
| Japan                             | 533,587         | 3,801,63   |
| Jordan                            | 1,026           | 9,37       |
| Korea, Republic of                | 56,916          | 856,30     |
| Kuwait                            |                 | 13,90      |
| Malaysia                          | 90,076          | 144,13     |
| Nauru                             | 4,744           | 2          |
|                                   |                 |            |
| Netherlands                       | 33,575          | 77,220     |
| New Zealand                       | 108,540         | 96,14      |
| Norway                            | 11,705          | 69         |
| Pakistan                          | 2,537           | 22,73      |
| Papua New Guinea                  | 1,127           | 12,44      |
| Philippines                       | 9,583           | 48,10      |
| Poland                            | 1,155           | 1,52       |
| Qatar                             | 3,069           | 11,64      |
| Saudi Arabia                      | 40,899          | 35,52      |
| Singapore                         | 135,286         | 1,551,76   |
| South Africa                      | 25,521          | 10,68      |
| Spain                             | 13,494          | 68,24      |
| Sri Lanka                         | 5,074           | 2,07       |
| Sweden                            |                 |            |
|                                   | 40,363          | 1,98       |
| Switzerland                       | 15,960          | 546,56     |
| Thailand                          | 55,947          | 126,26     |
| Union of Soviet Socialist         | 220             |            |
| Republics                         | 238             | 57,48      |
| United Arab Emirates              | 384,542         | 48,55      |
| United Kingdom                    | 232,205         | 350,02     |
| United States of America          | 561,793         | 412,26     |
| Yemen Arab Republic               | 16,059          | 18,53      |
| Yugoslavia                        | 1,870           | 7,41       |
| Zimbabwe                          | 428             | 70         |
| Other countries, country          | 120             | 70         |
|                                   | 361 101         | 0 875 00   |
| unknown and re-exports            | 364,401         | 2,875,23   |
| Ships' stores                     |                 | 55,953     |
| Total overseas trade              | 3,548,198       | 14,039,464 |

#### TABLE 19.1 – VALUE OF IMPORTS INTO AND EXPORTS FROM WESTERN AUSTRALIA ,CLASSIFIED ACCORDING TO ORIGIN OR DESTINATION, 1991-92 (\$'000)

# TABLE 19.2 – VALUE OF FOREIGN EXPORTS OF SELECTED COMMODITIESMAIN COUNTRIES OF DESTINATION, 1991-92 (\$'000)

| Commodity and destination                  | Value     | Commodity and destination                                    | Value       |
|--|-----------|--|-------------|
| Iron or <del>e</del>                       |           | Wool, degreased—   |             |
| Total exports                              | 2,818,446 | Japan  | 45,450      |
|  |           | Italy  | 37,178      |
| Wheat, (incl. spelt) and meslin, unmilled- |           | United Kingdom   | 14,597      |
| Indonesia                                  | 74,393    | United States of America                                     | 14,221      |
| Japan<br>Kawa Basaklis of                  | 58,421    | Total exports  | 159,601     |
| Korea, Republic of                         | 31,799    | Perd lebeters advelse and table (makes                       | . (         |
| Iran                                       | 26,196    | Rock lobsters, whole and tails, fresh o                      |             |
| Egypt                                      | 24,274    | Japan<br>Thing Provide the                                   | 111,933     |
| lraq                                       | 20,916    | Taiwan Province  | 84,221      |
| China (excluding Taiwan Province)          | 14,550    | United States of America                                     | 60,473      |
| Yemen Arab Republic                        | 14,483    | Total exports  | 261,660     |
| Vietnam                                    | 4,929     | Salt—  |             |
| Malaysia                                   | 1,629     | Japan  | 95,512      |
| Fiji                                       | 1,470     | Korea, Republic of   | 26,233      |
| lotal exports                              | 838,954   | Taiwan Province  | 21,672      |
| Nool, greasy—(incl. fleece washed wool)    |           | Total exports  | 170,278     |
| France                                     | 72,849    | •  |             |
| Italy                                      | 61,811    | Live sheep—  |             |
| Germany                                    | 58,234    | United Arab Emirates   | 22,077      |
| Japan                                      | 53,551    | Kuwait   | 10,730      |
| U.S.S.R.                                   | 50,629    | Qatar  | 9,755       |
| Belgium-Luxembourg                         | 46,547    | Oman   | 7,060       |
| Taiwan Province                            | 30,179    | Jordan   | 5,080       |
| China (excluding Taiwan Province)          | 29,157    | Total exports  | 67,636      |
| United States of America                   | 21,421    | Meat of bovine animals, fresh, chilled                       | or frozen—  |
| Spain                                      | 10,931    | United States of America                                     | 41,869      |
| India                                      | 10,215    | Malaysia   | 10,634      |
| Hong Kong                                  | 8,955     | Total exports  | 83,634      |
| United Kingdom                             | 8,820     | Total exports  | 00,00-      |
| Fotal exports                              | 498,965   | Feeding stuff for animals (a)—                               |             |
| •  | 250,500   | Japan  | 33,276      |
| Gold bullion—                              |           | Netherlands  | 33,101      |
| Singapore                                  | 1,149,161 | Spain  | 21,503      |
| Hong Kong                                  | 417,967   | Total exports  | 134,896     |
| Japan                                      | 333,032   | Pigmonte pointe varniches and relate                         | d matariale |
| Fotal exports                              | 2,465,878 | Pigments, paints, varnishes and relate<br>Korea, Republic of | 21,662      |
| Petroleum and petroleum products—          |           | United Kingdom   | 16,338      |
| Japan                                      | 278,053   |  | 15,245      |
| Singapore                                  | 240,708   | Philippines  | 10,250      |
| United States of America                   | 93,912    | Japan<br>Thailand  | 9,921       |
| New Zealand                                | 53,152    |  | 167,640     |
| Fotal exports                              | 875,437   | Total exports  | 107,040     |
|  | 075,157   | Mutton and lamb, fresh, chilled or fro                       | zen         |
| Barley, unmilled—                          |           | United Kingdom   | 7,070       |
| Japan                                      | 32,057    | Japan  | 7,019       |
| China (excluding Taiwan Province)          | 29,131    | Total exports  | 50,439      |
| Brazil                                     | 9,622     | •  |             |
| Korea, Republic of                         | 7,707     | Hides and skins—   |             |
| Fotal exports                              | 93,557    | ltaly<br>Frances   | 7,526       |
|  |           | France   | 3,989       |
|  |           | Total exports  | 25,543      |

(a) Excludes unmilled cereals.

# TABLE 19.3 - VALUE OF FOREIGN TRADE WITH SELECTED COUNTRIES BY SELECTEDDIVISIONS, 1991-92 (\$'000)

|          |   |               | I                              | mports            |                  |            |                                | Exports           |                  |
|----------|---|---------------|--------------------------------|-------------------|------------------|------------|--------------------------------|-------------------|------------------|
| Division | Description   | Japan         | United<br>States of<br>America | United<br>Kingdom | All<br>countries | Japan      | United<br>States of<br>America | United<br>Kingdom | All<br>countries |
| 01       | Meat and meat preparations  | _             |                                | _                 | 300              | 10,965     | 43,814                         | 10,123            | 150,760          |
| 03       | Fish, (not marine mammals) crustace<br>molluscs and aquatic invertebrates |               |                                |                   |                  | 10,700     | 10,011                         | /                 | 100,00           |
|          | and preparations thereof  | 1,246         | 279                            | 296               | 40,741           | 143,426    | 72,465                         | 157               | 343,769          |
| 04       | Cereals and cereal preparations   | 319           | 369                            | 1,218             | 9,284            | 117,843    |                                | 73                | 413,447          |
| 05       | Vegetables and fruit  | 89            | 3 <i>,</i> 738                 | 433               | 24,642           | 176        | _                              | 1,803             | 55,211           |
| 08       | Feeding stuff for animals   |               | 2010                           |                   |                  | 22.27      |                                |                   | 101004           |
| 11       | (excluding unmilled cereals)  | 1.4           | 2,940                          | 2 790             | 8,344            | 33,276     | 276                            | 1 259             | 134,896          |
| 24       | Beverages<br>Cork and wood  | 14            | 1,777<br>3,050                 | 2,789             | 13,166<br>11,484 | 261<br>480 | 668                            | 1,258<br>4,612    | 3,515<br>10,300  |
| 26       | Textile fibres and their wastes   |               | 5,050                          |                   | 11,101           | 100        | 000                            | 1,012             | 10,500           |
|          | (not manufactured into yarn   |               |                                |                   |                  |            |                                |                   |                  |
|          | or fabric)  | 1,398         | 170                            | 1,340             | 6,968            | 99,002     | 35,720                         | 23,956            | 662,502          |
| 27       | Crude fertilisers (excluding those of                                     |               |                                |                   |                  |            |                                |                   |                  |
|          | Divisions 56) and crude minerals  |               |                                |                   |                  |            |                                |                   |                  |
|          | (excluding coal, petroleum<br>and precious stones)                        | 873           | 2,935                          | 2,028             | 37,485           | 106,958    | 11,731                         | 1,090             | 220,870          |
| 28       | Metalliferous ores and  | 075           | 2,755                          | 2,020             | 57,105           | 100,750    | 11,751                         | 1,070             | 220,070          |
|          | metal scrap (a)   | 167           | 1,073                          | 295               | 2,023            | 1,547,096  | 34,843                         | 87,830            | 3,098,856        |
| 29       | Crude animal and vegetable  |               |                                |                   |                  |            |                                |                   |                  |
| 22       | materials, n.e.s.   | 418           | 827                            | 159               | 6,410            | 9,592      | 2,677                          | 246               | 33 <b>,</b> 828  |
| 33       | Petroleum, petroleum products   | 73            | 5,660                          | 312               | 656,171          | 278,053    | 93,912                         |                   | 875,437          |
| 51       | and related materials<br>Organic chemicals (a)                            | 5,412         | 10,336                         | 18,109            | 69,909           | 278,033    | 115                            |                   | 1,377            |
| 52       | Inorganic chemicals (a)   | 689           | 25,148                         | 1,981             | 46,315           | 21,594     | 18,045                         | 4,401             | 104,722          |
| 56       | Fertilisers (excl. crude)   | 728           | 28,940                         | 277               | 70,617           |            | 2                              | <i>′</i> —        | 137              |
| 58       | Plastics in non-primary forms (a)   | 1,718         | 6,003                          | 862               | 21,043           | 107        | 17                             | 61                | 2,345            |
| 59       | Chemical materials and  | 000           | 14.140                         | 15 000            | 14 001           | -          | 571                            | 10                | 00 500           |
| 62       | products, n.e.c.<br>Rubban manufactures, n.o.s.                           | 800<br>60,033 | 16,463                         | 15,020            | 46,391           | 5<br>20    | 561<br>4                       | 10<br>10          | 22,588           |
| 64       | Rubber manufactures, n.e.s.<br>Paper, paperboard and articles             | 00,035        | 7,701                          | 3,536             | 109,524          | 20         | 4                              | 10                | 1,487            |
| 01       | of paper pulp, of paper or  |               |                                |                   |                  |            |                                |                   |                  |
|          | of paperboard (a)   | 6,952         | 4,967                          | 3,134             | 66,806           | _          | 5                              | 15                | 10,558           |
| 65       | Textile yarn, fabrics, made-up article                                    |               |                                |                   |                  |            |                                |                   |                  |
|          | n.e.s. and related products (a)   | 2,298         | 2,643                          | 2,948             | 47,675           | 29         | 26                             | 44                | 3,541            |
| 66       | Non-metallic mineral<br>manufactures, n.e.s. (a)                          | 4,227         | 3,044                          | 12,428            | 73,108           | 47,799     | 3,598                          | 32,873            | 198,929          |
| 67       | Iron and steel  | 20,998        | 7,098                          | 4,631             | 78,634           | 32         | 5,590                          | 249               | 2,673            |
| 68       | Non-ferrous metals (a)  | 389           | 2,301                          | 17,111            | 37,516           | 3          | 1,459                          | 3,221             | 10,596           |
| 69       | Manufactures of metal, n.e.s. (a)   | 6,415         | 19,149                         | 8,925             | 90,689           | 513        | 3,410                          | 757               | 25,464           |
| 71       | Power generating machinery  | 00.11/        | 11.075                         | <b>5</b> 5 16     | 104 454          |            | 0.000                          | 14 400            | 05 001           |
| 72       | and equipment<br>Machinery specialized for particular                     | 20,116        | 41,965                         | 7,546             | 126,654          | 23         | 2,338                          | 16,690            | 25,081           |
| 12       | Machinery specialised for particular<br>industries (a)                    | 25,862        | 65,374                         | 18,304            | 179,743          | 1,266      | 3,279                          | 1,421             | 45,302           |
| 73       | Metal working machinery   | 1,093         | 494                            | 921               | 11,760           | 45         | 64                             | 5                 | 1,297            |
| 74       | General industrial machinery and  |               |                                |                   |                  |            |                                |                   |                  |
|          | equipment, n.e.s. and   | 05.014        | (1 510                         | 10.070            | 202 520          |            |                                | 010               | 14 100           |
| 75       | machine parts, n.e.s. (a)   | 25,946        | 61,713                         | 13,862            | 202,528          | 44         | 2,570                          | 918               | 46,423           |
| 75       | Office machines and automatic data<br>processing equipment                | 4,223         | 30,466                         | 3,118             | 83,746           | 27         | 4,328                          | 827               | 12.022           |
| 76       | Telecommunications and  | 4,223         | 50,400                         | 5,110             | 05,740           | 27         | 7,520                          | 027               | 12,022           |
|          | sound recording and reproducing   |               |                                |                   |                  |            |                                |                   |                  |
|          | apparatus and equipment   | 20,352        | 4,313                          | 2,211             | 38,102           | 401        | 2,341                          | 864               | 8,990            |
| 77       | Electrical machinery, apparatus,  |               |                                |                   |                  |            |                                |                   |                  |
|          | appliances, parts (incl. non-elec.  |               |                                |                   |                  |            |                                |                   |                  |
|          | counterparts of electrical<br>domestic equipment)                         | 12,131        | 30,951                         | 11,554            | 89,728           | 287        | 654                            | 361               | 13,269           |
| 78       | Road vehicles   | 12,151        | 50,751                         | 11,554            | 07,720           | 207        | 0.54                           | 501               | 15,207           |
|          | (incl. air cushion vehicles)  | 271,876       | 73,562                         | 8,744             | 409,063          | 162        | 481                            | 135               | 4,374            |
| 79       | Transport equipment   |               |                                |                   |                  |            |                                | _                 |                  |
| 07       | (excl. road vehicles)   | 13,641        | 25,806                         | 1,884             | 98,186           | 2,817      | 426                            | 53                | 66,585           |
| 87       | Professional, scientific and  |               |                                |                   |                  |            |                                |                   |                  |
|          | controlling instruments and apparatus, n.e.s.                             | 5,251         | 25,222                         | 14,732            | 65,510           | 332        | 1,185                          | 911               | 13,985           |
| 88       | Photographic apparatus, equipment   | 1 ل غرف       | £3,226                         | 1-17/ 52          | 05,510           | 202        | 1,105                          | 711               | 15,705           |
| -        | and supplies and optical goods,   |               |                                |                   |                  |            |                                |                   |                  |
|          | n.e.s., watches and clocks (a)  | 1,654         | 1,432                          | 672               | 7,154            | 13         | 67                             | 18                | 572              |
|          | Total (b)   | 533,587       | 561,793                        | 232 205           | 3,548,198        | 3,801,630  | 412,267                        | 350 026           | 14,039,464       |

(a) Excludes commodities subject to a confidential restriction. These are included in totals. (b) Includes details not available for publication and divisions not shown separately.

## TABLE 19.4 – VALUE OF INTERSTATE IMPORTS AND EXPORTS (a) SELECTED DIVISIONS (\$'000)

|          |   |                      | Imports          |                        |                 | Exports        |                |  |
|----------|---|----------------------|------------------|------------------------|-----------------|----------------|----------------|--|
| Divisio  | n Description   | 1988-89              | 1989-90          | 1990-91                | 1988-89         | 1989-90        | 1990-9         |  |
| 00       | Live animals  | 6,158                | 2,589            | 4,849                  | 11,590          | 4,316          | 7,10           |  |
| 00       |   | 53,450               |                  | 82,288                 |                 |                |                |  |
|          | Meat and meat preparations                                  | ,                    | 62,316           |                        | 14,489          | 18,668         | 18,19          |  |
| 02<br>03 | Dairy products and birds' eggs                              | 66,206               | 67,860           | 100,222                | n.p.            | 629            | n.p            |  |
| 03       | Fish, crustaceans and molluscs, and                         | 16.022               | 1.1.900          | 15 727                 | 25 746          | 38,661         | 31.822         |  |
| 04       | preparations thereof  | 16,023<br>87,798     | 14,809<br>94,191 | 15,727<br>109,616      | 35,745<br>7,118 | 7,530          | 4,352          |  |
| 05       | Cereals and cereal preparations                             | 164,495              | 137,223          | 138,974                | 15,667          | 14,003         | 12,31          |  |
| 05       | Vegetables and fruit<br>Sugar, sugar preparations and honey | 56360                | 50,038           | 68,544                 | ,               | ,              | ,              |  |
| 07       | Coffee, tea, cocoa, spices and                              | 00500                | 50,050           | 00,044                 | n.p.            | n.p.           | n.p            |  |
| 07       | manufactures thereof  | 93,941               | 109,119          | 94,352                 | <b>n n</b>      | 131            |                |  |
| 08       | Feeding stuff for animals                                   | <i>yyyyyyyyyyyyy</i> | 109,119          | <i>9</i> <b>1</b> ,352 | n.p.            | 151            | n.p            |  |
| 00       | (excluding unmilled cereals)                                | 42,602               |                  |                        |                 |                |                |  |
| 11       |   | ,                    | n.p.<br>156 102  | n.p                    | n.p.            | n.p.           | n.p            |  |
| 12       | Beverages   | 140,156<br>150,070   | 156,103          | 116,038<br>200,796     | n.p.            | n.p.           | n.p            |  |
| 24       | Tobacco and tobacco manufactures<br>Cork and wood           |                      | 181,025          |                        |                 |                |                |  |
| 24<br>28 |   | n.p.                 | n.p.             | n.p                    | n.p.            | n.p.           | n.p            |  |
|          | Metalliferous ores and metal scrap                          | n.p.                 | n.p.             | n.p                    | n.p             | 292,153        | n.p            |  |
| 51       | Organic chemicals   | 17,173               | 16,842           | 14,2477                | 143             | n.p.           | n.p            |  |
| 52       | Inorganic chemicals   | 41,157               | 20,342           | 17,617                 | n.p.            | n.p.           | n.p            |  |
| 53       | Dyeing, tanning and colouring materials                     | 43,255               | 40,740           | 49,583                 | n.p.            | n.p.           | n.p            |  |
| 54       | Medicinal and pharmaceutical products                       | 153,674              | 166,246          | 161,863                | n.p.            | n.p.           | n.p            |  |
| 55       | Essential oils and perfume materials; toilet                |                      | 150.040          | 101 105                | 201             | 000            |                |  |
|          | polishing and cleansing preparations                        | 174,373              | 179,062          | 181,105                | 206             | 883            | 413            |  |
| 58       | Artificial resins and plastic materials,                    |                      |                  |                        |                 |                |                |  |
|          | and cellulose esters and ethers                             | 72,237               | 66,300           | 50,103                 | 9,661           | 9,691          | 15,19          |  |
| 62       | Rubber manufactures, n.e.s.                                 | 80,016               | 71,806           | 57,396                 | 4,142           | n.p.           | n.p            |  |
| 63       | Cork and wood manufactures (excluding                       |                      |                  |                        |                 |                |                |  |
|          | furniture)  | 19,036               | 23,093           | 16,480                 | n.p.            | n.p.           | n.p            |  |
| 64       | Paper, paperboard, and articles of paper                    |                      |                  |                        |                 |                |                |  |
|          | pulp, of paper or of paperboard                             | 210,398              | 220,596          | 198,185                | 30,500          | 23,092         | 16,49          |  |
| 65       | Textile yarn, fabrics, made-up articles                     |                      |                  |                        |                 |                |                |  |
|          | n.e.s. and related products                                 | 154,117              | 155,602          | 144,889                | 41,918          | 45,162         | 53,96          |  |
| 66       | Non-metallic mineral manufactures, n.e.s.                   | 77,334               | 73,261           | 48,761                 | 21,837          | 28,255         | 20,793         |  |
| 67       | Iron and steel  | 426,893              | 345,903          | 299,310                | 18,689          | 23,605         | 19,53          |  |
| 68       | Non-ferrous metals  | 134,559              | 103,693          | 91,753                 | n.p.            | 12,072         | n.p            |  |
| 71       | Power generating machinery & equipment                      | 62,901               | 67,634           | 50,246                 | 11,477          | 12,825         | 9,00           |  |
| 72       | Machinery specialised for particular                        |                      |                  |                        |                 |                |                |  |
|          | industries  | 298,196              | 309,618          | 253,494                | 59,627          | 39,873         | 35,02          |  |
| 73       | Metalworking machinery                                      | 16,809               | 14,234           | 10,869                 | 8,240           | 5,126          | 5,13           |  |
| 74       | General industrial machinery & equipment                    | t,                   |                  |                        |                 |                |                |  |
|          | n.e.s. and machine parts n.e.s.                             | 284,171              | 271,218          | 252,332                | 72,395          | 85,229         | 65,89          |  |
| 75       | Office machines and automatic data                          |                      |                  |                        |                 |                |                |  |
|          | processing equipment  | 182,632              | 188,752          | 159,489                | 11,861          | 9,204          | 11,32          |  |
| 76       | Telecommunications and sound recording                      | and                  | ,                | ,                      | ,               |                |                |  |
|          | reproducing apparatus and equipment                         | 152,802              | 155,720          | 116,413                | 7,021           | 5,539          | 9,19           |  |
| 77       | Electrical machinery, apparatus and                         | /                    | , _              |                        | ,               | , · · ·        | , .            |  |
| .,       | appliances, n.e.s. and electrical                           |                      |                  |                        |                 |                |                |  |
|          | parts thereof   | 312,697              | 354,477          | 305,552                | 11,918          | 14,996         | 27,79          |  |
| 78       | Road vehicles (including air cushion                        | 512,077              | 554,477          | 505,552                | 11,710          | 14,770         | 21,17          |  |
| /0       |   | 1,172,964            | 1,102,526        | 833,690                | 29,962          | 29,829         | 38,36          |  |
| 81       | Sanitary, plumbing, heating and lighting                    | 1,172,704            | 1,102,520        | 033,070                | 27,702          | 27,027         | 50,50          |  |
| 01       | fixtures and fittings, n.e.s.                               | 24,300               | 25,915           | 20,594                 |                 |                |                |  |
| 02       |   |                      |                  |                        | n.p.            | n.p.<br>12 575 | n.p            |  |
| 82<br>84 | Furniture and parts thereof                                 | 34,411               | 34,649           | 29,041                 | 46,398          | 42,575         | 35,09<br>36,88 |  |
| 84       | Articles of apparel & clothing accessories                  | 300,313              | 353,309          | 255,206                | 53,868          | 51,457         |                |  |
| 85       | Footwear<br>Beg (sectored) a struct (in and sectored) in a  | 82,704               | 85,381           | 80,351                 | 4,074           | 6,059          | 4,56           |  |
| 87       | Professional, scientific and controlling                    | 00 (50               | 110.000          | 00.002                 | 0.000           |                |                |  |
| 0.0      | instruments and apparatus, n.e.s.                           | 92,650               | 110,353          | 99,088                 | 9,909           | 5,519          | 6,94           |  |
| 88       | Photographic apparatus, equipment and                       |                      |                  |                        |                 |                |                |  |
|          | supplies and optical goods, n.e.s.,                         |                      |                  |                        |                 |                |                |  |
|          | watches and clocks  | 64,363               | 68,458           | 91,419                 | 3,319           | 2,894          | 3,08           |  |
|          | Total (a) (b)   | 6,517,667            | 6,515,966        | 5,861,550              | 1,777,058       | 2,282,389      | 1,970,05       |  |

(a) Excludes the value of horses. Also excludes the value of interstate ships' stores. (b) Includes details not available for publication and divisions not shown separately.

|                                | derived from data supplied by the ABS, Canberra. Since 1 January<br>1988, import and export data have been reported solely according<br>to the Harmonized Tariff, the Australian Harmonized Export<br>Commodity Classification (AHECC) and the Australian<br>Harmonized Import Commodity Classification (AHICC). These<br>new classifications reflect technological development and changes<br>in international trade. They provide international uniformity in<br>classifying and coding goods, and simplify the task of collecting,<br>analysing and comparing foreign trade statistics. |
|--------------------------------|--|
|                                | Interstate imports and exports are classified according to<br>Interstate Trade Commodity Classifications, which are based on<br>the AHICC and the AHECC. The basic items of the Australian<br>classifications are compressed or expanded according to their<br>significance in Western Australia's trade to form interstate trade<br>commodity categories.   |
| Valuation of<br>Items of Trade |  |
| Foreign Trade                  | All values in foreign trade statistics are determined on a 'free on<br>board (f.o.b.) port of shipment' basis. This means that all charges,<br>in particular the cost of freight and insurance, incurred after the<br>goods have been exported from the port of shipment are<br>excluded. Only transport and service charges incurred, or usually<br>incurred, prior to export are included in the determination of<br>trade values.   |
| Re-exports                     | Re-exports are defined as goods, materials or articles which are<br>exported either in the same condition as they were in when<br>imported, or after minor repair or operations which leave them<br>unchanged. These minor operations include blending, packaging,<br>bottling, cleaning, sorting, husking or shelling.  |
| Interstate Trade               | Statistics of goods imported from other Australian States are<br>recorded in terms of landed cost. The basis of valuation for goods<br>exported to other Australian States is f.o.b., or its equivalent, at<br>the point of final shipment.  |
| Direction of Trade             | The term <i>Country of origin</i> , as used in recording the statistics of foreign trade, means the country of production. <i>Country of destination</i> means the country to which goods were consigned at the time of export. In compiling statistics of Western Australia's interstate imports and exports, goods are classified according to the State or Territory from which, or to which, they were consigned.  |
| References                     |  |
| ABS Publications               | Australian National Accounts (5220.0)  |
|                                | Foreign Trade, Australia: Merchandise Exports and Imports (5410.0)   |

## **REGIONAL PROFILE:**

## **GOLDFIELDS- ESPERANCE**

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## Chapter 20

# **REGIONAL PROFILE**

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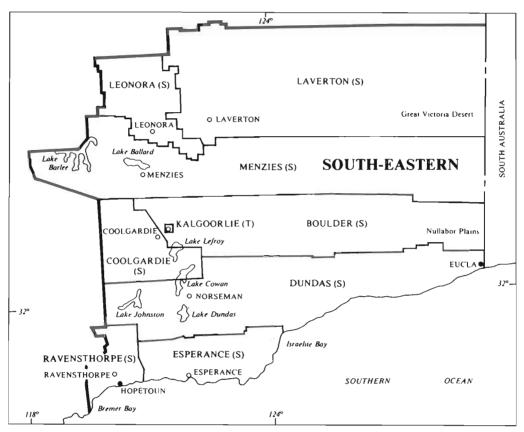
### Chapter 20

## **REGIONAL PROFILE**

## Goldfields-Esperance

Contributed by the Goldfields-Esperance Development Authority.

**Profile** The Goldfields-Esperance Region is located in the south eastern corner of Western Australia and covers an area of 613,222 square kilometers — almost a quarter of the State's total area. It is bordered by the Great Victorian Desert to the north, the Wheat Belt to the west, the Great Australian Bight to the south and the South Australian border to the east. It is a region of great diversity, from harsh featureless plains to a magnificent coastline which confronts the wild Southern Ocean.



Goldfields-Esperance Region (equivalent to ABS South East Statistical Division).

#### Kalgoorlie/Boulder: Events for Everyone

Contributed by the Kalgoorlie-Boulder Centenary Office

Never in the history of Kalgoorlie-Boulder has there been a year so full of attractions that cover as broad a range of interests and activities as there will be in 1993. All sections of the local community have pulled together to provide a calendar of events to rival that of any City the size of Kalgoorlie-Boulder. The official Centenary Celebrations Week will be held from 10-17 June when the focus will be on a multi-cultural festival, and residents and visitors alike will be called on to reflect on the achievements of the past and the promises of the future. While this week has been set aside by the local Council to officially recognise the passing of the Centenary, there will be plenty to see and do throughout the year.

Some of the highlights of the celebrations will include:

• 1993 Horse Trek to Perth, 10-23 April

A unique international event involving 120 horses and their riders retracing the two week trek from Kalgoorlie to Perth as it would have been made at the turn of the century.

- Back to the Goldfields Reunion, 24 April More than 3,000 'expats' are expected to return to Kalgoorlie-Boulder for a day of reminiscing and renewing of old friendships.
- London to Sydney Car Rally, 10-11 May 110 pre-1968 vehicles making the Sydney to London trek will make a stopover in the City to take part in a 2.2km 'around the houses' race and then join in a monster party.

• Qantas World Two-Up Championship, 18-27 September A first prize of a trip for two to Las Vegas with a minimum of \$15,000 spending money will be up for grabs at this World Championship event.

- Annual Racing Round, 26 September 2 October This will be one of the biggest and most colourful of all the successful racing carnivals ever staged in Kalgoorlie. The annual racing round is steeped in history and has become a popular event of the national racing calendar.
- Goldfields Mining Expo, 20-23 October A three day expo featuring displays of mining products, services and equipment.
- 1993 Great Western Air Race, 30-31 October An air race airtrial over two days for light aircraft from Jandakot to Kalgoorlie and return.
- Australian Land Speed Record Challenge, 31 October 6 November An attempt on the Australian land speed record will be made by Rosco McGlashin on Lake Lefroy.
- Pacific Rim International Land Sailing Championships, 20-27 November More than 300 Land Sailors with their tents, caravans and campers will descend on Lake Lefroy for a week of championship 'sailing'.

#### Heritage Trails of the Goldfields

Contributed by the Heritage Council of Western Australia

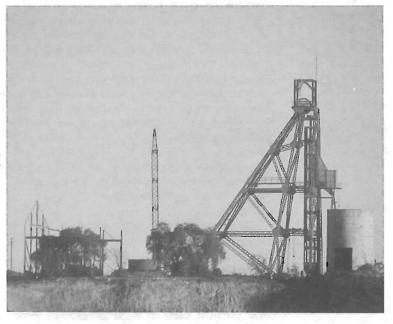
The Heritage Council is responsible for a network of Heritage Trails developed in 1988 as part of Australia's bicentenary. The Heritage Trails Network covers the whole State, but each individual trail has been developed by local communities. In Kalgoorlie's Centenary year it seems fitting to mention the Heritage Trails in the Goldfields.

Eastern Goldfields Heritage Trails. There are three trails centered on Kalgoorlie — a 4 km Kalgoorlie Historic Walk, a 3 km Boulder Historic Walk, and a 170 km Historic Goldfields Drive, which takes in Coolgardie and Kambalda. Coolgardie, Boulder and Kalgoorlie developed rapidly after gold was discovered and such rapid development left little time for town planning. These trails look at the hotels, banks, town halls, shops, cemeteries and deserted mine workings that were part of the goldfields heyday.

**Historic Gwalia Trail**. Gwalia, an almost deserted township, is 237 km north of Kalgoorlie and despite its isolation, is well worth a visit. The little tin huts, the vast open cut mine, the grand and stately old hotel, the Gwalia Museum and the old headframe and winder provide a unique opportunity to sense what life was like for miners and their families in one of the remote towns that sprang up when gold fever was at its height.

**Cattlin Creek Heritage Trail.** As mining in the Ravensthorpe area waned, many miners turned to farming. This trail provides an oportunity to explore the two radically different ways people have used to make a life for themselves in the Cattlin Creek district — by mining and smelting ore into gold and copper, and by enriching the sandy plains for agriculture. The heritage trail follows the route of an old railway spur-line.

York to Goldfields Heritage Trail. This trail, a 500 km drive, retraces as closely as possible the route to the goldfields established by explorer Charles Cooke Hunt. It features some of the original wells constructed during his four expeditions east of York. When gold was discovered Hunt's track and network of dams and wells became a lifeline to the thousands streaming out to the goldfields. Hunt's original track was re-surveyed in 1889 and is the York to Goldfields road of today.



The Ivanhoe Headframe at its original site. The Headframe has since been moved to the Museum of the Goldfields in Kalgoorlie.

Photograph: Courtesy of the Heritage Council of Western Australia. Goldfields-Esperance is rich in resources and one of Western Australia's most historic regions.

Climate With an annual rainfall of less than 350mm, the area is one of Western Australia's driest. Inland average temperatures range from a minimum of 21° celsius to a maximum of 36° celsius in summer, and from less than 6° celsius to about 18° celsius in winter. In the coastal area, the average temperatures in summer range between a minimum of about 16° celsius to a maximum of 27° celsius, and in winter between 8° celsius and 16° celsius.

- **Population and Regional Centres** The total population of the region at the Census of 6 August 1991 was 50,288. The major urban centre for the region is Kalgoorlie/Boulder, with a population of 25,016. Other centres include the port town of Esperance (7,066), Kambalda (4,259), Laverton (1,197), Leonora (1,196), Coolgardie (1,063) and Norseman (1,005).
- **Economy** The Goldfields-Esperance region is vital to the economy of the State, producing a variety of valuable mineral and agricultural products. The northern part of the region has been built on the extraction and processing of its mineral resources. To the south, agriculture and fishing make valuable contributions to the region's economy. While the mining industry dominates activity in the region, the manufacturing sector is the second largest outside the Perth metropolitan area.

Mining As its name implies, the Goldfields are the centre of the State's prosperous gold mining industry and, in more recent times, nickel mining and smelting. Continued resource developments, together with developments in mineral processing and improved transport connections, ensure a secure long-term future for the region. This industry is the largest employer in the region, providing work for nearly 6,000 people (or 25 per cent of total persons employed by industry in the region). The majority of mining activity is located in the northern part of the region. The region's economic strength has been, and remains, based on the development of mineral resources.

The emphasis of mining is on the production of gold and nickel. In recent years it has consistently produced over 40 per cent of the State's gold and 100 per cent of nickel.

Cobalt, palladium and platinum are by-products of nickel processing. Although their supply is determined by activity in the nickel industry, they are important sources of income in their own right.

The region's reserves of rare earths such as cerium, lanthanum and yttrium used in high-technology products offer potential for further development.

| Industry               | Males  | Females | Persons | Per cent |
|------------------------|--------|---------|---------|----------|
| Agriculture, forestry, |        |         |         |          |
| fishing and hunting    | 1,392  | 520     | 1,912   | 8.1      |
| Mining                 | 5,105  | 824     | 5,930   | 25.0     |
| Manufacturing          | 995    | 216     | 1,211   | 5.1      |
| Electricity, gas       |        |         |         |          |
| and water              | 149    | 18      | 167     | 0.7      |
| Construction           | 1,118  | 158     | 1,276   | 5.4      |
| Wholesale              |        |         |         |          |
| and retail trade       | 1,800  | 1,612   | 3,412   | 14.4     |
| Transport and storage  | 807    | 204     | 1,011   | 4.3      |
| Communication          | 134    | 89      | 223     | 0.9      |
| Finance, property and  |        |         |         |          |
| business services      | 876    | 6890    | 1,565   | 6.6      |
| Public administration  |        |         |         |          |
| and defence            | 383    | 267     | 650     | 2.7      |
| Community services     | 972    | 2,002   | 2,974   | 12.5     |
| Recreation, personal   |        |         |         |          |
| and other services     | 552    | 1,008   | 1,560   | 6.6      |
| Not classifiable       | 80     | 21      | 101     | 0.4      |
| Not stated             | 1,056  | 658     | 1,714   | 7.2      |
| Total                  | 15,420 | 8,286   | 23,706  | 100.0    |

#### TABLE 20.1 – EMPLOYMENT BY INDUSTRY BY SEX GOLDFIELDS-ESPERANCE REGION 1991 CENSUS DATA

Reference: Catalogue No. 2722.5

Fishing

The Southern Ocean is an excellent source of a diverse range of seafood. Over 70 fishing vessels operate from the region, the major base being Esperance, which lands 56 per cent of the catch. Queen snapper, red snapper, blue groper and southern rock lobster are caught in significant quantity, but the largest commercial quantities of the annual catch are shark, abalone and southern blue fin tuna. Tuna is the most important, representing about 30 per cent of the region's total catch and 36.5 per cent of the State's tuna catch.

A tuna-smoking enterprise has been in operation in Esperance since 1985 and sells its product to the eastern States and Singapore. In addition, fresh southern blue fin tuna is exported as sashimi to the discerning Japanese market.

Agriculture and<br/>PastoralRainfall patterns and vegetation type restrict crop growing and<br/>cattle grazing to the southern part of the region. Sheep production<br/>also takes place in the south and north-west.

Sheep are grazed for wool and cattle for meat. Cattle are not run in large numbers because of the dry conditions. Wool production dominates the region's agricultural output value, contributing \$107 million of the total agricultural output value of \$125 million.

|  | Goldfields-<br>Esperance                  | Western<br>Australia                        | Per cent                   |
|--|---|---|----------------------------|
| Total area of holdings   | 16,705,105                                | 110,870,507                                 | 15.0                       |
| Wheat for grain—<br>Area (ha)<br>Production (tonnes)   | 165,222<br>207,133                        | 3,632,232<br>5,449,077                      | 4.5<br>3.7                 |
| Barley for grain—<br>Area (ha)<br>Production (tonnes)  | 122,757<br>168,002                        | 497,685<br>742,241                          | 24.5<br>22.6               |
| Cereal Crops for grain—<br>Area (ha)<br>Production (tonnes)  | 302,421<br>395,913                        | 4,475,167<br>6,714,103                      | 6.7<br>5.9                 |
| Sheep—<br>Rams 1 year and over<br>Breed ewes 1 year and over<br>Wethers 1 year and over<br>Non breed ewes 1 year | 39,554<br>1,433,104<br>1,426,037          | 383,020<br>13,649,555<br>11,229,317         | 10.1<br>10.4<br>12.6       |
| and over<br>Lambs and Hoggets > 1 yea<br>Total sheep and lambs   | 452,247<br>r 749,031<br>4 <b>,099,973</b> | 3,217,496<br>7,985,915<br><b>36,743,259</b> | 14.0<br>9.3<br><b>11.2</b> |
| Lambs shorn<br>Sheep shorn<br>Total sheep and lambs  | 786,438<br>4,230,088                      | 7,922,394<br>36,743,259                     | 9.9<br>11.5                |
| shorn<br>Total wool production (kg)  | 5,016,526<br>24,103,541                   | 44,665,653<br>205,530,747                   | 11.2<br>11.7               |
| Cattle—<br>Meat cattle   | 81 <b>,257</b>                            | 1,475,045                                   | 5.5                        |

#### TABLE 20.2 – COMPARISON OF SELECTED AGRICULTURE DATA GOLDFIELDS-ESPERANCE IN COMPARISON TO WESTERN AUSTRALIA 1990-91

Reference: 1990-91 Agriculture Census

*Manufacturing* The existing manufacturing sector is principally located in Kalgoorlie/Boulder and Esperance.

The manufacturing sector in Kalgoorlie/Boulder caters mainly to the needs of local exploration, mining and pastoral industries.

Locally manufactured goods include explosives, drilling rigs, drilling rods and bits, engine protection systems, and metal machining and fabrication; for consumption by mining companies and contractors. Existing establishments include drilling rig construction, bakers, dairy, abattoir, concrete suppliers, brick works and several building companies. Subsidiary companies servicing these and other concerns also operate in the region.

In the City of Kalgoorlie/Boulder a number of local companies have been successful in penetrating interstate and overseas markets. They include companies manufacturing drilling rigs, drilling tools and drill bits, and engine protection systems. Similarly, local technology in gold processing has been exported. A site has been identified for the development of a large heavy industries area. The Mungari Industrial Estate will encourage new enterprises to establish and allow the expansion of existing industries in Kalgoorlie/Boulder.

The manufacturing sector in Esperance caters mainly to agriculture and fishing concerns, with an abattoir, fish processing, metal fabrication and light engineering operations.

Commerce The majority of business is located in Kalgoorlie, at the region's heart, and Esperance on the coast, with each providing an extensive range of wholesale, retail and service establishments. The ABS Business Register Counts revealed that 3,204 firms were operating in the Goldfields-Esperance region as at August 1992. Table 20.3 provides a breakdown of the type of activities these firms are engaged in.

Substantial recent and forecast investment of well over \$1 billion by the region's major mining companies indicates a long-term commitment to activity and employment, providing confidence for the development of related industries. The growing population has increased opportunities to supply additional civic, recreation, cultural and economic services. High priority is being given to the completion of a sealed road linking the Goldfields to the Pilbara region further north, enabling new opportunities for local industries to service north-west mining projects.

| Industry division                       | Total | Proportion<br>per cent |
|---|-------|------------------------|
| Agriculture                             | 923   | 28.8                   |
| Mining                                  | 303   | 4.5                    |
| Manufacturing                           | 110   | 3.4                    |
| Electricity, gas and water              | 7     | 0.2                    |
| Construction                            | 176   | 5.5                    |
| Wholesale and retail trade              | 621   | 19.4                   |
| Transport and storage                   | 148   | 4.6                    |
| Communication                           | 21    | 0.7                    |
| Finance, property and business services | 286   | 8.9                    |
| Public administration and defence       | 51    | 1.6                    |
| Community services                      | 300   | 9.4                    |
| Recreation, personal and other services | 258   | 8.0                    |
| Total                                   | 3,204 | 100.0                  |

#### TABLE 20.3 – NUMBER OF FIRMS BY INDUSTRY GOLDFIELDS-ESPERANCE REGION AUGUST 1992 (a)

(a) These figures, which have been taken from the ABS Business Register, should be regarded as approximations because:

- the register does not include businesses without employees (i.e. businesses run solely by their owners); and because

- ceased businesses may not be removed from the register for a significant time after ceasing operations.

### **Regional Profile**

| Tourism                                  | The Goldfields have played a significant role in the economic and<br>cultural development and prosperity of Western Australia since<br>gold was discovered in 1885. The region therefore has a rich<br>historical background: from the architecture of the buildings, to<br>the people and their lifestyle, to the legends and realities of gold<br>discovery. Continued recognition of heritage has occurred<br>through restoration projects carried out by the Western Australian<br>Heritage Commission and the establishment of new museums and<br>displays. Historical features coupled with the continued success of<br>the inining industry, make the region an attractive and interesting<br>tourist destination. |
|--|---|
|  | Tourists attracted by the outback experience in the interior, the<br>spectacular south coast and the region's heritage are becoming an<br>increasingly important source of regional income.   |
| Infrastructure and<br>Education Services |   |
| Energy                                   | Power is supplied by the State's interconnected grid system to Kalgoorlie. The towns of Laverton, Menzies, Leonora and Esperance are powered by diesel generators.  |
| Water                                    | Water is a precious commodity in the Goldfields-Esperance<br>region. Mundaring Weir, near Perth, is the source of water to the<br>Goldfields and the agricultural area. The Shires of Menzies,<br>Laverton and Leonora are supplied from a combination of surface<br>catchment in dams and bore fields. Eucla and other settlements on<br>the Eyre Highway get desalinated ground water pumped by bore.<br>Drinking water is sourced from roof catchment rainwater.   |
|  | Esperance receives its water from an underground aquifier.<br>Ravensthorpe has a reticulated water supply from four small<br>dams near the town.  |
| Transport                                | Kalgoorlie/Boulder is the transport hub of the region and acts as<br>a focus for east-west travel. With the exception of the road<br>connecting Leinster and Meekatharra, all major linking roads in<br>the region are sealed.  |
|  |   |

Regular air services are provided to Kalgoorlie/Boulder, Esperance, Laverton and Leonora from Perth. Regular regional services operate from Kalgoorlie to major mining centres and there are several locally-based charter operators.

Kalgoorlie/Boulder is a stopping point for the TransAustralia rail service which runs between Perth and Sydney. The centre is also a major terminal for freight.

Local bus services operate in Kalgoorlie/Boulder, Coolgardie and Kambalda, while taxi services operate in the same towns and Esperance.

The region has a major port at Esperance which can handle a variety of cargoes, from live sheep and cattle to grain, salt, gypsum, various mineral concentrates, petroleum products, liquefied petroleum gas, magnesite and fertilisers.

*Education* Major towns offer education to senior high school level. Small towns have a primary school. School of the Air broadcasts from Kalgoorlie/Boulder cater for primary school students in isolated areas.

Post-secondary education is also available. The Western Australian School of Mines, an annexe of Perth's Curtin University, provides mining-related courses at both undergraduate and post-graduate level. Kalgoorlie College offers vocational and community courses, and some external tertiary courses through Curtin University. It is possible that a University may be established in Kalgoorlie/Boulder to meet tertiary education requirements.

The recently completed Kalgoorlie/Boulder airport opens up the potential for direct flights to business and tourism destinations in the eastern States. A south-north transport corridor starting in the Port of Esperance would complement and enhance the relevance of the east-west link.

Such developments will ensure the positioning of the Goldfields-Esperance region as a leader in Western Australia's future development.

*Communications* The Goldfields-Esperance region has full Australia Post and Telecom services.

State daily and weekly newspapers are available on the day of publication. Three provincial newspapers are published. Television services are provided by the Australian Broadcasting Corporation (ABC) and a commercial station, and radio broadcast is available in most towns.

Health A regional hospital and a private day surgery facility are located in Kalgoorlie/Boulder. The towns of Laverton, Leonora, Norseman, Esperance and Ravensthorpe have small hospitals.

> The Royal Flying Doctor Service is based at Kalgoorlie/Boulder and services towns, settlements and stations in the region. In addition, Kalgoorlie/Boulder and Esperance offer a full range of ancillary medical services.

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## HISTORICAL STATISTICS

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## Chapter 21

# HISTORICAL STATISTICS

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#### Chapter 21

# HISTORICAL STATISTICS

In the following pages, a historical summary of some of the more important statistics relating to Western Australia is shown. This is intended to present a general picture of the development of the State. Naturally, the range of statistics available in the early years of the colony is limited.

It is not always possible to achieve perfect comparability over long periods of time because of changes in definitions, scope of statistical collections etc. While major breaks in series are shown, minor changes are not shown and the statistics should be interpreted with this in mind.

Generally, the first year shown on each page is the earliest for which any series on that page is available. Because of space constraints, data for earlier years are shown at ten year intervals only.

TABLE 21.1 - ESTIMATED POPULATION, NATURAL INCREASE AND MIGRATION (a)

NOTE: Figures above the double lines exclude full-blood Aborigines; those below the double lines refer to total population, i.e. including Aborigines.

|              |                    | Population                   |                    | natural          | Estimated<br>net | Tota<br>increa   | se (f)              | <u>}</u>           | lear<br>ded        | Population<br>of Perth<br>Statistical<br>Division |
|--------------|--------------------|------------------------------|--------------------|------------------|------------------|------------------|---------------------|--------------------|--------------------|---|
| Year         |                    | <u>1 December</u><br>Females | Persons            | increase<br>(c)  | migration<br>(d) | P<br>Number      | er cent<br>(g)      | 30 June            | 31<br>December     | (b) $(h)$   |
|              |                    |                              |                    |                  |                  |                  | ·8/                 |                    |                    |   |
| 1000         | 7(0                | 024                          | 1 002              |                  |                  |                  |                     | (′000)             | (′000)             | (′000)  |
| 1829         | 769                | 234                          | 1,003              | n.a.             | n.a.             | n.a.             | n.a.                |                    |                    |   |
| 1830<br>1840 | 877<br>1,434       | 295<br>877                   | 1,172              | n.a.             | n.a.             | 169              | 16.85               |                    |                    |   |
| 1840         | 3,576              | 2,310                        | 2,311<br>5,886     | 34<br>132        | 123<br>1,109     | 157<br>1,241     | 7.29<br>26.72       |                    | n.a.               |   |
| 1860         | 9,597              | 5,749                        | 15,346             | 379              | 1,109            | 509              | 3.43                | n a                | 15,092             | n.a.  |
| 1870         | 15,511             | 9,624                        | 25,135             | 475              | 7                | 482              | 3.43<br>1.96        | n.a.               | 24,894             |   |
| 1880         | 16,985             | 12,576                       | 29,561             | 551              | -129             | 402              | 1.45                |                    | 29,350             |   |
| 1890         | 28,854             | 12,578                       | 48,502             | 1.021            | 1,821            | 2,842            | 6.22                |                    | 47,081             | 20  |
| 1900         | 110,088            | 69,879                       | 179,967            | 3,214            | 6,495            | 9,709            | 5.70                |                    | 175,113            | 73  |
| 1910         | 157,971            | 118,861                      | 276,832            | 4,845            | 6,312            | 11,157           | 4.20                | 266.687            | 271,019            | 115.7   |
| 1920         | 176,895            | 154,428                      | 331,323            | 4,761            | -1,298           | 3,463            | 1.06                | 327.152            | 330,023            | 167.0   |
| 1930         | 232,868            | 198,742                      | 431,610            | 5,426            | -453             | 4,973            | 1.17                | 425,785            | 429,079            | 235.1   |
| 1940         | 248,734            | 225,342                      | 474,076            | 4,598            | -2,902           | 1,696            | 0.36                | 472,060            | 473,397            | 255.5   |
| 1950         | 294,758            | 277,891                      | 572,649            | 9,170            | 19,295           | 28,465           | 5.23                | 545,134            | 557,878            | 351.7   |
| 1960         | 372,665            | 358,368                      | 731,033            | 11,229           | 1,113            | 12,342           | 1.72                | 717,316            | 722,900            | 470.3   |
|              |                    | <u> </u>                     |                    |                  | ,                |                  |                     |                    | ,                  |   |
| 1961         | 384,773            | 370,440                      | 755,213            | 11,349           | 2,571            | 13,920           | $\frac{1.90}{2.02}$ | 729,770            | 737,596            | 482.7   |
| 1962         | 395,891            | 381,357                      | 777,248            | 11,254           | 10,499           | 22,035           | 2.92                | 755,770            | 766,205            | 500.3   |
| 1963         | 407,024            | 391,871                      | 798,895            | 11,314           | 10,068           | 21,647           | 2.79                | 777,413            | 788,457            | 517.8   |
| 1964         | 417,023            | 401,098                      | 818,121            | 10,256           | 8,705            | 19,226           | 2.41                | 798,824            | 808,300            | 534.0   |
| 1965         | 427,330            | 410,918                      | 838,248            | 9,912            | 9,963            | 20,127           | 2.46                | 817,157            | 826,481            | 550.9   |
| 1966<br>1967 | 440,913            | 423,180                      | 864,093            | 10,292           | 15,553           | 25,845           | 3.08                | 837,290            | 849,189            | 571.8   |
|              | 458,438            | 438,550                      | 896,988            | 11,244           | 21,651           | 32,895           | 3.81                | 863,539            | 879,815            | 597.7   |
| 1968<br>1969 | 479,938<br>500,378 | 457,862<br>476,242           | 937,800<br>976,620 | 12,073<br>13,404 | 28,739           | 40,812<br>38,820 | 4.55                | 896,761<br>935,985 | 915,757<br>955,660 | 629.2<br>659.7                                    |
| 1969<br>1970 | 510,378            | 476,242<br>493,878           | 1,014,052          | 13,404           | 25,416           | /                | 4.14                | 935,965            | 955,660            | 689. <i>6</i>                                     |
|              |                    |                              |                    |                  | 23,357           | 37,432           | 3.83                |                    |                    |   |
| 1971         | 547,563            | 522,784                      | 1,070,347          | 16,433           | 16,352           | <u>33,033</u>    | 3.26                | 1,013,455          | 1,052,785          | 733.0   |
| 1972         | 558,030            | 534,574                      | 1,092,604          | 14,780           | 7,875            | 22,257           | 2.08                | 1,068,972          | 1,081,634          | 753.5   |
| 1973         | 568,500            | 545,482                      | 1,113,982          | 12,700           | 8,910            | 21,378           | 1.96                | 1,091,845          | 1,010,921          | 773.6   |
| 1974         | 584,552            | 561,439                      | 1,145,991          | 12,506           | 19,700           | 32,009           | 2.87                | 1,113,723          | 1,127,887          | 801.4   |
| 1975         | 594,518            | 572,885                      | 1,167,403          | 12,411           | 9,410            | 21,412           | 1.87                | , ,                | 1,155,499          | 822.1   |
| 1976         | 605,932            | 585,748                      | 1,191,680          | 12,972           | 10,921           | 24,277           | 2.08                | , ,                | 1,178,928          | 842.5   |
| 1977         | 618,210            | 599,006                      | 1,217,216          | 12,815           | 11,392           | 25,536           | 2.14                |                    | 1,204,454          | 861.1   |
| 1978         | 627,238            | 609,163                      | 1,236,401          | 12,880           | 4,980            | 19,185           | 1.58                |                    | 1,227,903          | 875.3   |
| 1979         | 636,442            | 620,650                      | 1,257,092          | 12,499           | 6,847            | 20,691           | 1.67                |                    | 1,246,800          | 890.6   |
| 1980         | 648,922            | 634,583                      | 1,283,505          | 12,505           | 12,627           | 26,413           | 2.10                | 1,257,214          | 1,269,270          | 910.0   |
| 1981         | 667,381            | 652,840                      | 1,320,221          | 13,905           | 20,858           | 36,716           | 2.86                | 1,284,014          | 1,301,528          | 937.7   |
| 1982         | 684,771            | 670,200                      | 1,354,971          | 14,060           | 17,640           | 34,750           | 2.63                | 1,320,278          | 1,338,681          | 965.3   |
| 1983         | 697,570            | 683,441                      | 1,381,011          | 14,718           | 8,126            | 26,040           | 1.92                | 1,354,814          | 1,368,546          | 986.8   |
| 1984         | 708,066            | 694,966                      | 1,403,032          | 13,123           | 5,586            | 22,021           | 1.59                | 1,380,566          | 1,391,775          | 1,005.5   |
| 1985         | 724,952            | 711,948                      | 1,436,900          | 14,272           | 16,304           | 33,868           | 2.41                |                    | 1,419,004          | 1,032.9   |
| 1986 r       | 744,738            | 731,721                      | 1,476,459          | 14,929           | 25,569           | 39,559           | 2.75                |                    | 1,457,771          | 1,066.7   |
| 1987 r       | 762,172            | 749,031                      | 1,511,203          | 14,452           | 20,292           | 34,744           | 2.35                | 1,476,759          | 1,494,198          | 1,099.4   |
| 1988 r       | 784,470            | 771,670                      | 1,556,140          | 15,611           | 29,326           | 44,937           | 2.97                |                    | 1,534,088          | 1,118.8   |
| 1989 r       | 802,576            | 790,890                      | 1,593,466          | 15,508           | 21,818           | 37,326           | 2.40                |                    | 1,576,228          | 1,161.2   |
| 1990 r       | 816,714            | 806,274                      | 1,622,988          | 15,949           | 13,573           | 29 <i>,</i> 522  | 1.85                | 1,594,038          | 1,609,629          | 1,193.1   |
| 1991 r       | 829,843            | 820,763                      | 1,650,606          | 15,889           | 11,729           | 27,618           | 1.70                | 1,623,503          | 1,637,072          | n.ya  |

(a) Estimates for years prior to 1987 are based on final census results. Subsequent years are based on preliminary 1991 Census results. (b) Figures for 1971 and later refer to the estimated resident population. (c) Excess of births registered over deaths registered, including deaths of defence personnel, whether in Australia or overseas, between September 1939 and June 1947. (d) Interstate and overseas. (e) Figures prior to 1972 are on a State of registration basis; those for 1972 and later are on the basis of State of usual residence. (f) For the years 1972 to 1986 differences between the sum of natural increase and net migration, and total increase, are owing to distribution of intercensal discrepancy. (g) The rates represent total increase in population during the year expressed as a proportion per cent of the population at the end of the previous year. (h) Prior to 1988 figures are at 31 December. Those for 1988 and later are as at 30 June.

#### TABLE 21.2 - VITAL STATISTICS

NOTE: Figures for 1965 and earlier (i.e. those above the double lines) exclude persons of predominantly Aboriginal descent.

|                      |                         | Div-                    | Live<br>births           | Deaths               | <u>Rate</u><br>Natural     | e per 1,000 o       | of mean p                                     | opulation           | ı (a)<br>Natural      |                   | fant<br>tality          |
|----------------------|-------------------------|-------------------------|--------------------------|----------------------|----------------------------|---------------------|---|---------------------|-----------------------|-------------------|-------------------------|
| Year                 | Marriages<br>registered | orces<br>(b)            | registered<br>(c)        | registered<br>(c)(d) | increase                   | Marriages           | Births  | Deaths<br>(c)(d)    | increase<br>(c)(d)    |                   | Rate<br>(c)(g)          |
| 1840                 | 25                      |                         | 54                       | 20                   | 34                         | n.a.                | n.a.  | n.a.                | n.a.                  | n.a.              | n.a.                    |
| 1850                 | 37                      |                         | 186                      | 54                   | 132                        | n.a.                | n.a.  | n.a.                | n.a.                  | n.a.              | n.a.                    |
| $1860 \\ 1870$       | 151<br>153              |                         | 588<br>853               | 209<br>378           | 379<br>475                 | $10.01 \\ 6.15$     | 38.96<br>34.27                                | $13.18 \\ 15.18$    | 25.11<br>19.08        | n.a.<br>100       | n.a.<br>11 <b>7.2</b> 3 |
| 1880                 | 214                     | n.a.                    | 933                      | 382                  | 551                        | 7.29                | 31.79   | 13.02               | 18.77                 | 72                | 77.17                   |
| 1890                 | 278                     |                         | 1,561                    | 540                  | 1,021                      | 5.90                | 33.16   | 11.47               | 21.69                 | 140               | 89.69                   |
| 1900                 | 1,781                   |                         | 5,454                    | 2,240                | 3,214                      | 10.17               | 31.15   | 12.79               | 18.35                 | 688               | 126.15                  |
| 1910                 | 2,107                   |                         | 7,585                    | 2,740                | 4,845                      | 7.77                | 27.99   | 10.11               | 17.88                 | 593               | 78.18                   |
| 1920<br>1930         | 2,932<br>3,205          |                         | 8,149<br>9,200           | 3,388<br>3,774       | 4,761 5,426                | 8.88<br>7.47        | 24.69<br>21.44                                | 10.27<br>8.80       | 14.42<br>12.64        | 538<br>430        | 66.02<br>46.74          |
| 1930<br>1940<br>1950 | 5,203<br>5,234<br>5,434 | <br>720                 | 9,200<br>9,121<br>14,228 | 4,486<br>5,058       | 4,635<br>9,170             | 11.06<br>9.74       | 19.27<br>25.50                                | 9.48<br>9.07        | 9.79<br>16.44         | 403<br>386        | 44.18 27.13             |
| 1951                 | 5,390                   | 682                     | 14,794                   | 5,288                | 9,506                      | 9.29                | 25.49   | 9.11                | 16.38                 | 425               | 28.73                   |
| 1952                 | 5,389                   | 585                     | 15,413                   | 5,209                | 10,204                     | 8.97                | 25.66   | 8.67                | 16.99                 | 384               | 24.98                   |
| 1953                 | 5,032                   | 535                     | 15,862                   | 5,072                | 10,790                     | 8.10                | 25.54   | 8.17                | 17.37                 | 378               | 23.83                   |
| 1954                 | 5,204                   | 530                     | 15,928                   | 5,364                | 10,564                     | 8.13                | 24.89   | 8.38                | 16.51                 | 359               | 22.54                   |
| 1955                 | 5,145                   | 479                     | 16,623                   | 5,379                | 11,244                     | 7.83                | 25.29   | 8.18                | 17.11                 | 373               | 22.44                   |
| 1956                 | 5,080                   | 544                     | 16,916                   | 5,572                | 11,344                     | 7.53                | 25.08   | 8.26                | 16.82                 | 384               | 22.70                   |
| 1957                 | 4,897                   | 541                     | 16,924                   | 5,297                | 11,627                     | 7.12                | 24.62   | 7.71                | 16.91                 | 357               | 21.09                   |
| 1958                 | 5,038                   | 536                     | 16,731                   | 5,554                | 11,177                     | 7.20                | 23.90   | 7.94                | 15.97                 | 360               | 21.52                   |
| 1959                 | 5,387                   | 584                     | 17,111                   | 5,497                | 11,614                     | 7.57                | 24.04   | 7.72                | 16.32                 | 345               | 20.16                   |
| 1960                 | 5,323                   | 540                     | 16,926                   | 5,697                | 11,229                     | 7.36                | 23.41   | 7.88                | 15.53                 | 366               | 21.62                   |
| 1961                 | 5,150                   | 466                     | 17,078                   | 5,729                | 11,349                     | 6.98                | 23.15   | 7.77                | 15.39                 | 336               | 19.67                   |
| 1962                 | 5,466                   | 582                     | 17,064                   | 5,810                | 11,254                     | 7.23                | 22.58   | 7.69                | 14.89                 | 380               | 22.27                   |
| 1963                 | 5,755                   | 553                     | 17,290                   | 5,976                | 11,314                     | 7.40                | 22.23   | 7.68                | 14.55                 | 353               | 20.42                   |
| 1964                 | 6,023                   | 542                     | 16,685                   | 6,429                | 10,256                     | 7.55                | 20.93   | 8.06                | 12.86                 | 328               | 19.66                   |
| 1965<br>1966         | 6,448<br>7,002          | $\frac{604}{637}$       | $\frac{16,186}{17,194}$  | 6,274<br>6,902       | 9,912<br>10,292            | 7.91                | $\frac{19.85}{20.25}$                         | 7.70<br>8.13        | $\frac{12.16}{12.12}$ | $\frac{351}{343}$ | $\frac{21.68}{19.95}$   |
| 1967                 | 7,430                   | 726                     | 18,023                   | 6,779                | 11,244                     | 8.44                | 20.48   | 7.71                | 12.78                 | 314               | 17.42                   |
| 1968                 | 8,086                   | 812                     | 19,541                   | 7,468                | 12,073                     | 8.83                | 21.34   | 8.16                | 13.18                 | 398               | 20.37                   |
| 1969<br>1970         | 8,993<br>9,227          | 872<br>889              | 20,754                   | 7,350                | 13,404                     | 9.41                | 21,72   | 7.69                | 14.03                 | 453<br>459        | 21.83                   |
| 1970<br>1971         | 9,382                   | 009<br>1,064            | 21,618<br>24,239         | 7,543<br>7,806       | 14,075<br>16,433           | $\frac{9.28}{8.91}$ | $\frac{21.74}{23.02}$                         | <u>7.59</u><br>7.41 | $\frac{14.16}{15.61}$ | 459               | 21.23<br>19.14          |
| 1972                 | 9,120                   | 1,243                   | 22,177                   | 7,441                | 14,736                     | 8.43                | 20.50   | 6.88                | 13.62                 | 348               | 15.69                   |
| 1973                 | 9,102                   | 1,424                   | 20,510                   | 7,845                | 12,665                     | 8.26                | 18.61   | 7.12                | 11.49                 | 394               | 19.21                   |
| $1974 \\ 1975$       | 9,295                   | 1,761                   | 20,207                   | 7,778                | 12,429                     | 8.24                | 17.92   | 6.90                | 11.02                 | 327               | 16.18                   |
|                      | 9,026                   | 2,240                   | 20,338                   | 7,972                | 12,366                     | 7.81                | 17.60   | 6.90                | 10.70                 | 271               | 13.32                   |
| 1976                 | 9,517                   | 4,818                   | 20,670                   | 7,740                | 12,930                     | 8.07                | 17.53   | 6.57                | 10.97                 | 273               | 13.21                   |
| 1977                 | 10,063                  | 3,975                   | 20,651                   | 7,899                | 12,752                     | 8.35                | 17.15   | 6.56                | 10.59                 | 251               | 12.15                   |
| 1978                 | 9,404                   | 3,387                   | 20,611                   | 7,794                | 12,817                     | 7.66                | 16.79   | 6.35                | 10.44                 | 230               | 11.16                   |
| 1979                 | 9,239                   | 3,397                   | 20,469                   | 8,020                | 12,449                     | 7.41                | 16.42   | 6.43                | 9.98                  | 247               | 12.07                   |
| 1980                 | 9,594                   | 3,073                   | 20,607                   | 8,166                | 12,441                     | 7.56                | 16.24   | 6.43                | 9.80                  | 239               | 11.60                   |
| 1981<br>1982         | 10,111<br>10,455        | 3,481<br>3,842          | 21,877<br>22,236         | 7,993<br>8,187       | 13,884<br><u>14,049</u>    | 7.77<br>7.81        | $\begin{array}{c} 16.81 \\ 16.61 \end{array}$ | $\frac{6.14}{6.15}$ | 10.67<br><u>10.49</u> | 193<br>204        | 8.82<br>9.17            |
| 1983                 | 10,519                  | 3,822                   | 23,087                   | 8,369                | 14,718                     | 7.69                | 16.87   | 6.12                | 10.75                 | 179               | 7.75                    |
| 1984                 | 9,920                   | 4,069                   | 21,625                   | 8,503                | 13,122                     | 7.13                | 15.54   | 6.11                | 9.43                  | 232               | 10.72                   |
| 1985                 | 10,398                  | 4,039                   | 23,109                   | 8,836                | 14,273                     | 7.33                | 16.29   | 6.23                | 10.06                 | 209               | 9.04                    |
| 1986                 | 10,379                  | 4,001                   | 24,236                   | 9,307                | 14,929                     | 7.12                | 16.62   | 6.38                | 10.24                 | 214               | 8.83                    |
| 1987<br>1988         | 10,150<br>10,578        | 4,001<br>4,044<br>3,964 | 23,332<br>25,143         | 8,880<br>9,532       | 14,929<br>14,452<br>15,611 | r6.79<br>r6.90      | r15.62<br>r16.38                              | r5.94<br>r6.21      | r9.67<br>10.18        | 196<br>214        | 8.40<br>8.51            |
| 1989                 | 10,739                  | 4,089                   | 25,051                   | 9,543                | 15,508                     | r6.81               | r15.89  | r6.05               | r9.84                 | 195               | 7.78                    |
| 1990                 | 10,613                  | 3,845                   | 25,356                   | 9,407                | 15,949                     | r6.59               | r15.75  | r5.84               | r9.91                 | 217               | 8.56                    |
| 1991                 | 10,659                  | 4,446                   | 25,417                   | 9,528                | 15,889                     | 6.51                | 15.53   | 5.82                | 9.71                  | 183               | 7.20                    |

(a) Rates for 1971 and later are based on the estimated resident population. Rates for years prior to 1987 are based on final census results. Rates for subsequent years are based on preliminary 1991 Census results. (b) Final orders - dissolution of marriages. (c) Births, deaths and natural increase figures for 1982 and earlier years are on a State of registration basis. Figures for 1983 and later are based on State of usual residence. (d) Excludes fetal deaths (stillbirths) and between September 1939 and June 1947, deaths of defence personnel, whether in Australia or overseas. (e) Excess of live births registered over deaths registered. (f) Deaths under 1 year of age included in deaths registered. (g) Per 1,000 live births.

|                          |               |                   | Social serv                 | vice benefit | ts                               |                        | Repatriation pensions |                          |                  |                          |  |
|--------------------------|---------------|-------------------|-----------------------------|--------------|----------------------------------|------------------------|-----------------------|--------------------------|------------------|--------------------------|--|
|                          |               | Pensione          | rs (a)                      |              | Family                           | Un-<br>employ-         | Disa                  | bility                   | Se               | ervice                   |  |
| Year<br>ended<br>30 June | Age<br>(c)(d) | Invalid<br>(c)(d) | Total<br>Age and<br>Invalid | Widow        | allowance<br>(a)(b)<br>(e)(f)(g) | ment<br>benefit<br>(h) | Number<br>(a)(i)      | Amount<br>paid<br>\$'000 | Number<br>(a)(j) | Amount<br>paid<br>\$'000 |  |
| 1910                     | 2,361         |                   | <b>2,36</b> 1               | n.a.         | n.a.                             | n.a.                   | n.a.                  | n.a.                     | n.a.             | n.a.                     |  |
| 1920                     | 4,791         | 1,788             | 6,579                       | n.a.         | n.a.                             | n.a.                   | 22,311                | 1,087                    | n.a.             | n.a.                     |  |
| 1930                     | 8,913         | 3,284             | 12,197                      | n.a.         | n.a.                             | n.a.                   | 28,407                | 1,586                    | n.a.             | n.a.                     |  |
| 1940                     | 19,024        | 3,454             | 22,478                      | n.a.         | n.a.                             | n.a.                   | 21,449                | 1,370                    | 1,489            | 103                      |  |
| 1950                     | 24,316        | 4,294             | 28,610                      | 2,883        | 133,557                          | 267                    | 48,878                | 3,776                    | 1,953            | 331                      |  |
| 1951                     | 24,317        | 4,184             | 28,501                      | 2,789        | 172,186                          | 60                     | 51,027                | 4,545                    | 2,022            | 369                      |  |
| 1952                     | 24,517        | 3,964             | 28,501                      | 2,676        | 183,257                          | 57                     | 52,071                | 5,429                    | 2,022 2,136      | 449                      |  |
| 1952                     | 25,679        | 3,996             | 29,675                      | 2,676        | 192,991                          | 844                    | 52,607                | 5,843                    | 2,138            | 556                      |  |
| 1955                     | 25,679        | 4,101             | 29,073<br>31,349            | 2,000        | 202,098                          | 427                    | 53,352                | 6,174                    | 2,343            | 605                      |  |
| 1954                     | 28,833        | 4,101             | 33,024                      | 2,733        | 202,098                          | 157                    | 53,552<br>54,117      | 6,877                    | 2,408            | 723                      |  |
| 1956                     | 30,244        | 4,191             | 34,669                      | 3,015        | 212,025                          | 473                    | 54,427                | 6,902                    |                  | 964                      |  |
|                          |               |                   |                             |              |                                  |                        |                       |                          | 3,648            |                          |  |
| 1957                     | 32,192        | 5,039             | 37,231                      | 3,243        | 230,922                          | 1,940                  | 54,987                | 7,169                    | 4,306            | 1,095                    |  |
| 1958                     | 33,124        | 5,519             | 38,643                      | 3,542        | 237,732                          | 2,330                  | 55,251                | 8,017                    | 4,672            | 1,395                    |  |
| 1959                     | 34,629        | 5,941             | 40,570                      | 3,833        | 245,090                          | 2,852                  | 56,008                | 7,893                    | 5,009            | 1,552                    |  |
| 1960                     | 36,575        | 6,152             | 42,727                      | 4,039        | 250 <i>,</i> 449                 | 2,512                  | 56,644                | 8,471                    | 5,344            | 1,751                    |  |
| 1961                     | 37,656        | 6,945             | 44,601                      | 4,348        | 257,037                          | 2,154                  | 57,123                | 9,310                    | 6,101            | 2,102                    |  |
| 1962                     | 39,104        | 7,826             | 46,930                      | 4,570        | 266,067                          | 2,932                  | 57,947                | 10,177                   | 7,115            | 2,687                    |  |
| 1963                     | 40,661        | 8,170             | 48,831                      | 4,486        | 270,736                          | 2,674                  | 57,580                | 10,527                   | 7,526            | 2,927                    |  |
| 1964                     | 41,819        | 8,306             | 50,125                      | 4,734        | 283,775                          | 2,677                  | 57,047                | 11,564                   | 7,754            | 3,177                    |  |
| 1965                     | 42,706        | 8,615             | 51,321                      | 4,926        | 288,486                          | 1,679                  | 55,920                | 11,447                   | 7,780            | 3,320                    |  |
| 1966                     | 43,876        | 8,575             | 52,451                      | 5,071        | 295,303                          | 785                    | 54,560                | 12,637                   | 7,757            | 3,571                    |  |
| 1967                     | 45,741        | 8,307             | 54,048                      | 5,228        | 306,325                          | 718                    | 52,967                | 11,889                   | 7,674            | 3,612                    |  |
| 1968                     | 48,850        | 8,310             | 57,160                      | 5,482        | 317,491                          | 608                    | 51,193                | 11,934                   | 7,586            | 3,777                    |  |
| 1969                     | 50,432        | 8,413             | 58,845                      | 5,559        | 329,593                          | 524                    | 49,526                | 13,061                   | 7,298            | 4,071                    |  |
| 1970                     | 56,017        | 7,933             | 63,950                      | 6,086        | 333,597                          | 474                    | 47,993                | 12,811                   | 7,783            | 4,491                    |  |
| 1971                     | 58,224        | 8,155             | 66,379                      | 6,392        | 347,585                          | 872                    | 46,514                | 13,140                   | 7,767            | 4,769                    |  |
| 1972                     | 60,523        | 8,485             | 69,008                      | 6,795        | 358,907                          | 2,808                  | 45,079                | 14,413                   | 7,864            | 5,298                    |  |
| 1973                     | 68,701        | 9,518             | 78,219                      | 7,948        | 364,590                          | 4,960                  | 44,093                | 15,462                   | 9,599            | 7,394                    |  |
| 1974                     | 76,124        | 10,406            | 86,530                      | 8,763        | 360,989                          | 2,863                  | 42,807                | 17,363                   | 10,669           | 10,191                   |  |
| 1975                     | 79,831        | 10,400            | 90,792                      | 9,442        | 368,626                          | 2,803<br>9,317         | 41,747                | 21,845                   | 11,814           | 15,149                   |  |
| 1976                     | 84,087        | 12,265            | 96,352                      | 10,027       | 373,149                          | 13,598                 | 40,619                | 23,118                   | 13,472           | 20,560                   |  |
| 1977                     | 86,470        | 13,263            | 99,733                      | 10,691       | 376,346                          | 15,706                 | 39,459                | 25,587                   | 15,338           | 26,933                   |  |
| 1978                     | 94,491        | 13,653            | 108,144                     | 11,494       | 377,545                          | 20,470                 | 38,053                | 28,728                   | 16,975           | 33,785                   |  |
| 1979                     | 96,558        | 15,035            | 111,603                     | 12,232       | 371,315                          |                        | 36,883                | 28,183                   | 18,794           | 38,896                   |  |
| 1979                     | 98,887        | 15,894            | 111,003                     | 12,232       |                                  | (k)29,000<br>(k)29,800 | 35,857                | 29,097                   | 21,131           | 45,911                   |  |
|                          |               |                   |                             |              |                                  |                        |                       |                          |                  |                          |  |
| 1981                     | 101,042       | 16,352            | 117,394                     | 12,526       | 377,113                          | 28,638                 | 34,920                | 33,411                   | 23,704           | 59,328                   |  |
| 1982                     | 103,397       | 17,195            | 120,592                     | 12,654       | 385,708                          | 31,636                 | 34,696                | 35,597                   | 26,121           | 69,549                   |  |
| 1983                     | 105,784       | 18,598            | 124,382                     | 12,830       | 391,885                          | 50,992                 | 34,726                | 44,394                   | 29,346           | 90,417                   |  |
| 1984                     | 103,889       | 21,124            | 125,013                     | 12,934       |                                  | (k)59,400              | 34,808                | 49,981                   | 32,640           | 110,663                  |  |
| 1985                     | 102,943       | 23,889            | 126,832                     | 12,977       |                                  | (k)57,900              | 34,952                | 58,502                   | 34,815           | 127,841                  |  |
| 1986                     | 103,085       | 25,769            | 128,854                     | 12,817       |                                  | (k)54,358              | 35,223                | 67,345                   | 36,423           | 144,009                  |  |
| 1987                     | 103,339       | 27,886            | 131,225                     | 12,647       | 388,360                          | 56,441                 | 31,760                | 72,596                   | 36,532           | 155,389                  |  |
| 1988                     | 103,743       | 28,522            | 132,265                     | 11,898       | 367,107                          | 46,091                 | 31,362                | 80,593                   | 36,798           | 179,711                  |  |
| 1989                     | 104,816       | 29,706            | 134,522                     | 6,901        | 366,490                          | 35,621                 | 30,761                | 84,091                   | 36,246           | 184,171                  |  |
| 1990                     | 106,301       | 30,590            | 136,891                     | 6,488        | 362,930                          | 34,770                 | 30,285                | 92,674                   | 35,570           | 195,559                  |  |
| 1991                     | 109,592       | 32,508            | 142,100                     | 6,070        | 371,453                          | 55,756                 | 29,776                | 96,259                   | 35,003           | 203,512                  |  |

TABLE 21.3 - SOCIAL SERVICE BENEFICIARIES AND REPATRIATION PENSIONS

(a) Number at 30 June. (b) Previously child and student endowment. Name of benefit, rates and conditions changed from 15 June 1976. (c) Prior to June 1957 excludes pensioners in benevolent homes. (d) At 30 June 1940 invalid pensioners who qualified were reclassified as age pensioners. (e) Prior to 30 June 1957 excludes endowed children in institutions. (f) Child endowment commenced 1 July 1941 for second and subsequent children. From 20 June 1950 endowment extended to include first or only children. (g) From 14 January 1964 includes students aged 16 and under 21; extended to 25 years in 1976. (h) Average number of persons on benefit at end of each week. (i) Includes pensions paid to incapacitated veterans and their dependants. (k) Estimated.

#### TABLE 21.4 – NATIONAL WELFARE FUND: EXPENDITURE IN WESTERN AUSTRALIA

(\$'000)

NOTE: The National Welfare Fund was established, with effect from 1 July 1943, in terms of the National Welfare Fund Act 1943. During the first two years of operation, only maternity allowances and funeral benefits were paid from the Fund. Under the provisions of the National Welfare Fund Act 1945, effective from 1 July 1945, expenditure on age pensions (introduced in 1909), invalid pensions (1910), widows' pensions (1942), and child endowment (1941) became a charge on the Fund. Unemployment, sickness, and special benefits came into operation on 1 July 1945. Hospital benefit was first paid in 1945-46 (for public hospitals from 1 January 1946, and private hospitals from 18 February 1946).

|          | Soc   | cial service  | 25   |  |  |  | Total  |  |  |  |   |
|----------|---|---|--|--|--|--|--|--|--|--|---|
| Pensions |   | Un-<br>employ-<br>ment,   |  |  |  |  | Dharma   | Tuber-   |  | iture  | expend-   |
| Age      |   |   |  |  |  |  |  |  |  |  | Welfare   |
| and      |   | ment  | special  | social   | home   | Medical  | ical   |  | school   | services   | Fund  |
| invalid  | Widows'   | <i>(a)</i>  | benefits   | services   | benefits   | benefits   | benefits   | ' (a)  | children   | (b)  | (b)   |
| 19,833   | 1,827   | 9,720   | 1,504  | 33,652   | 3,351  | 2,241  | 3,178  | 1,163  | 458  | 10,427   | 44,079  |
| 21,586   | 2,104   | 11,402  | 1,309  | 37,180   | 3,817  | 2,339  | 3,630  | 1,111  | 448  | 11,386   | 48,812  |
| 24,344   | 2,371   | 10,205  | 1,887  | 39,575   | 3,996  | 2,455  | 4,809  | 873  | 526  | 12,695   | 52,270  |
| 25,582   | 2,377   | 10,485  | 2,006  | 41,203   | 4,189  | 2,657  | 5,161  | 885  | 584  | 13,501   | 54,705  |
| 27,373   | 3,115   | 12,994  | 1,978  | 46,223   | 4,705  | 2,808  | 5,242  | 839  | 615  | 14,238   | 60,460  |
| 29,413   | 3,463   | 13,406  | 1,401  | 48,450   | 4,987  | 3,716  | 5,294  | 822  | 637  | 15,486   | 64,635  |
|          |   |   |  | 49,648   |  |  |  |  |  | 16,906   | 67,316  |
|          |   |   |  |  |  |  |  |  |  |  | 74,666  |
|          |   |   |  |  |  |  |  |  |  |  | 78,894  |
|          |   |   |  |  |  |  |  |  |  |  | 85,828  |
| 44,637   | 5,600   | 17,894  | 1,039  | 70,725   | 9,153  | 6,373  | 9,836  | 828  | 797  | 262, 262   | 98,577  |
| 48,979   | 6,172   | 16,423  | 1,699  | 75,279   | 10,256   | 9,782  | 11,215   | 800  | 835  | 33,246   | 109,216   |
| 57,374   | 7,180   | 18,188  | 4,298  | 89,623   | 14,492   | 13,800   | 12,418   | 907  | 997  | 43,032   | 133,770   |
| 76,188   | 10,064  | 21,407  | 8,372  | 119,622  | 19,062   | 15,958   | 13,258   | 824  | 1,086  | 50,827   | 171,763   |
| 98,011   | 13,409  | 19,009  | 8,314  | 147,040  | 21,222   | 16,478   | 16,153   | 803  | 596  | 56,535   | 205,778   |
| 138,812  | 18,459  | 19,085  | 24,944   | 213,981  | 25,758   | 19,437   | 19,830   | 1,023  |  | 68,542   | 284,016   |
|          | Age<br>and<br>invalid<br>19,833<br>21,586<br>24,344<br>25,582<br>27,373<br>29,413<br>30,760<br>33,794<br>36,418<br>39,404<br>44,637<br>48,979<br>57,374<br>76,188<br>98,011 | Pensions           Age<br>and<br>invalid         Widows'           19,833         1,827           21,586         2,104           24,344         2,371           25,582         2,377           27,373         3,115           29,413         3,463           30,760         3,602           33,794         4,011           36,418         4,346           39,404         4,786           44,637         5,600           48,979         6,172           57,374         7,180           76,188         10,064           98,011         13,409 | Pensions         Child<br>endow-<br>and           Age<br>and         endow-<br>ment           invalid         Widows'         (a)           19,833         1,827         9,720           21,586         2,104         11,402           24,344         2,371         10,205           25,582         2,377         10,485           27,373         3,115         12,994           29,413         3,463         13,406           30,760         3,602         13,624           33,794         4,011         15,498           36,418         4,346         14,845           39,404         4,786         15,540           44,637         5,600         17,894           48,979         6,172         16,423           57,374         7,180         18,188           76,188         10,064         21,407           98,011         13,409         19,009 | $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ |

(a) Comprises amounts paid to individuals in the form of allowances and to the State Government as reimbursements for expenditure incurred in the provision and maintenance of facilities. (b) Excludes some relatively minor expenditure not allocatable among States. NOTE: This series has been replaced by 'Commonwealth Government Cash Benefits to or for Persons in Western Australia'.

#### TABLE 21.5 – COMMONWEALTH GOVERNMENT CASH BENEFITS TO OR FOR PERSONS IN WESTERN AUSTRALIA (a) (\$m)

|       | Healt    | h servic | es and bene | efits        |         | So       | cial securi | ity and w | elfare ben | efits   |          |          |
|-------|----------|----------|-------------|--------------|---------|----------|-------------|-----------|------------|---------|----------|----------|
|       |          | Clinical |             |              |         |          |             | Sole      |            |         |          |          |
|       |          | ıd non-  |             |              | Ex-     |          |             | parent,   |            |         |          |          |
|       |          | nstitut- |             |              | service |          | Unem-       | family    |            |         |          |          |
| Year  | Hospital | ional    |             |              | men     |          | ployment    | and       |            |         |          |          |
| ended | and      | and      |             |              | and     |          | and         | child     |            |         |          | Total    |
| 30    | institu- |          | Pharma-     | <b>m</b> . 1 | depend- | Age      | sickness    | benefits  |            |         | Other    | cash     |
| June  | tional   | health   | ceutical    | Total        | ants    | pensions | benefits    | n.e.c.    | Other      | Total   | services | benefits |
| 1979  | 24.3     | 37.3     | 18.3        | 79.9         | 67.1    | 238.2    | 90.0        | 111.5     | 94.2       | 601.0   | 28.8     | 709.7    |
| 1980  | 27.8     | 42.1     | 18.7        | 88.6         | 75.0    | 258.6    | 96.1        | 117.1     | 108.9      | 655.8   | 28.6     | 773.0    |
| 1981  | 37.1     | 48.8     | 22.1        | 108.0        | 92.7    | 290.4    | 98.6        | 128.4     | 126.8      | 737.0   | 32.2     | 877.2    |
| 1982  | 47.0     | 58.9     | 28.5        | 134.3        | 105.1   | 334.8    | 125.4       | 156.7     | 146.9      | 868.9   | 36.7     | 1,039.9  |
| 1983  | 55.0     | 71.7     | 33.1        | 159.8        | 134.8   | 364.2    | 224.6       | 199.4     | 169.7      | 1,092.7 | 42.5     | 1,295.0  |
| 1984  | 42.2     | 114.2    | 35.7        | 192.0        | 160.7   | 400.4    | 294.8       | 234.8     | 192.5      | 1,283.1 | 55.2     | 1,530.3  |
| 1985  | 51.7     | 176.2    | 49.2        | 277.1        | 186.2   | 428.5    | 310.5       | 256.6     | 227.6      | 1,409.4 | 53.8     | 1,740.3  |
| 1986  | 60.6     | 200.9    | 53.9        | 315.4        | 211.7   | 450.2    | 317.5       | 281.5     | 255.6      | 1,516.5 | 59.5     | 1,891.4  |
| 1987  | 64.2     | 235.1    | 55.9        | 355.2        | 228.0   | 478.3    | 357.1       | 282.7     | 280.9      | 1,627.0 | 78.5     | 2,060.7  |
| 1988  | 91.4     | 253.5    | 71.1        | 416.0        | 260.8   | 537.7    | 332.5       | 314.1     | 317.1      | 1,762.2 | 85.9     | 2,264.1  |
| 1989  | 97.6     | 273.4    | 76.8        | 447.8        | 268.3   | 584.5    | r296.0      | 277.9     | 450.5      | 1,839.0 | 84.8     | 2,371.6  |
| 1990  | n.a.     | n.a.     | n.a.        | n.a.         | 288.2   | 640.0    | 320.6       | 465.9     | 336.5      | 209.9   | n.a.     | n.a.     |

NOTE: This series replaced 'National Welfare Fund: Expenditure in Western Australia'

|              |                |                  |   |                    |                    |                  | princij        | val grain crop        | ns (e)              |
|--------------|----------------|------------------|---|--------------------|--------------------|------------------|----------------|-----------------------|---------------------|
|              | T              | ivestock (b).    |   | Wool prod          | tuction (c)        |                  |                |                       | Wheat<br>Production |
|              |                | LIVESTOCK (D)    |   |                    | Gross              |                  | Yield per      |                       | Gross               |
| Year (a)     | Cattle         | Sheep            | Pigs                                      | Quantity           | value (d)          | Area             | hectare        | Total                 | value               |
|              |                |                  |   |                    |                    | <i>'</i> 000'    |                | <b>′</b> 000 <b>′</b> |                     |
|              | <b>'</b> 000   | <i>'</i> 000     | <b>'</b> 000                              | tonnes             | \$'000             | hectares         | tonnes         | tonnes                | \$'000              |
| 1829         |                | 1                |   | n.a.               | n.a.               | n.a.             | n.a.           | n.a.                  | n.a.                |
| 1830         | 1              | 8                |   | n.a.               | n.a.               | n.a.             | n.a.           | n.a.                  | n.a.                |
| 1840<br>1850 | 2<br>13        | 31<br>128        | 2<br>3                                    | n.a.               | n.a.               | 1<br>2           | 1.11           | 1                     | n.a.                |
| 1850         | 32             | 260              | 11  | n.a.<br>298        | n.a.<br>n.a.       | 6                | n.a.<br>1.00   | n.a.<br>6             | n.a.<br>n.a.        |
| 1870         | 45             | 609              | 13  | 811                | n.a.               | 11               | 0.79           | 9                     | n.a.                |
| 1880         | 64             | 1,232            | 24  | 1,970              | n.a.               | 11               | 0.62           | 7                     | n.a.                |
| 1890         | 131            | 2,525            | 29  | 3,161              | n.a.               | 14               | 0.92           | 13                    | n.a.                |
| 1900         | 339            | 2,434            | 62  | 4,323              | n.a.               | 30               | 0.70           | 21                    | 310                 |
| 1910         | 825            | 5,159            | 58  | 13,210             | 2,141              | 236              | 0.68           | 161                   | 2,162               |
| 1920         | 850            | 6,533            | 61<br>101                                 | 18,947             | 4,552              | 516              | 0.65           | 333                   | 11,023              |
| 1930<br>1940 | 813<br>789     | 9,883<br>9,516   | 101<br>218                                | 32,451<br>32,362   | 4,829<br>7,889     | 1,601<br>1,062   | $0.91 \\ 0.54$ | 1,456<br>573          | 12,201<br>8,648     |
| 1940         | 865            | 10,923           | 79  | 42,071             | 47,237             | 1,002            | 0.34           | 1,048                 | 51,339              |
| 1960         | 1,030          | 16,412           | 131                                       | 72,979             | 75,302             | 1,505            | 1.06           | 1,597                 | 82,361              |
| 1961         | 1.100          | 17,151           | 176                                       | 82,652             | 73,863             | 1.627            | 1.07           | 1.739                 | 92,290              |
| 1962         | 1,218          | 18,314           | 174                                       | 83,159             | 79,283             | 1,773            | 1.01           | 1,788                 | 100,023             |
| 1963         | 1,298          | 18,727           | 131                                       | 80,366             | 80,071             | 1,944            | 1.01           | 1,973                 | 107,023             |
| 1964         | 1,299          | 20,165           | 128                                       | 95,053             | 116,331            | 1 <i>,</i> 878   | 0.76           | 1,424                 | 74,389              |
| 1965         | 1,258          | 22,392           | 137                                       | 91,170             | 93,275             | 2,085            | 0.82           | 1,717                 | 88,557              |
| 1966<br>1967 | 1,271<br>1,357 | 24,427           | $\begin{array}{c} 144 \\ 161 \end{array}$ | 108,116            | 115,183<br>121,509 | 2,489<br>2,569   | 1.12<br>1.09   | 2,780                 | 153,050             |
| 1967         | 1,337          | 27,370<br>30,161 | 181                                       | 119,681<br>131,379 | 116,653            | 2,589            | 1.09           | 2,809<br>2,911        | 153,157<br>170,102  |
| 1969         | 1,546          | 32,901           | 220                                       | 164,307            | 158,264            | 2,952            | 1.00           | 3,060                 | 151,306             |
| 1970         | 1,681          | 33,634           | 250                                       | 144,527            | 120,819            | 2,747            | 0.66           | 1,815                 | 90,961              |
| 1971         | 1,781          | 34,709           | 278                                       | 151,808            | 92,009             | 2,361            | 1.25           | 2,957                 | 153,227             |
| 1972         | 1,975          | 34,405           | 427                                       | 170,219            | 135,137            | 2,042            | 1.06           | 2,165                 | 115,934             |
| 1973         | 2,182          | 30,919           | 476                                       | 140,649            | 225,041            | 2,437            | 0.82           | 2,003                 | 109,399             |
| 1974         | 2,330          | 32,451           | 344                                       | 143,147            | 251,712            | 2 <i>,</i> 978   | 1.41           | 4,211                 | 461,049             |
| 1975         | 2,544          | 34,476           | 264                                       | 172,659            | 218,859            | 2,810            | 1.17           | 3,277                 | 361,211             |
| 1976<br>1977 | 2,654<br>2.464 | 34,771<br>31,158 | 260<br>242                                | 174,807<br>156,237 | 242,027<br>291,358 | 3,171<br>3,314   | $1.30 \\ 0.98$ | 4,122<br>3,249        | 427,507<br>290,489  |
| 1977         | 2,404          | 29,823           | 242                                       | 143,127            | 258,034            | 3,514            | 0.98           | 2,945                 | 290,489             |
| 1979         | 2,092          | 30,265           | 271                                       | 150,284            | 286,601            | 3,706            | 1.19           | 4,400                 | 546,827             |
| 1980         | 2,065          | 30,431           | 293                                       | 147,840            | 348,214            | 4,121            | 0.91           | 3,739                 | 571,158             |
| 1981         | 2,033          | 30,764           | 289                                       | 160,096            | 401.030            | 4.333            | 0.77           | 3,315                 | 508,734             |
| 1982         | 1,942          | 30,268           | 263                                       | 145,126            | 378,540            | 4,593            | 1.05           | 4,803                 | 762,706             |
| 1983         | 1,754          | 30,164           | 300                                       | 148,190            | 395,896            | 4,865            | 1.14           | 5,534                 | 982,505             |
| 1984         | 1,730          | 29,518           | 300                                       | 141,359            | 407,451            | 4,746            | 0.91           | 4,316                 | 702,330             |
| 1985         | 1,673          | 31,574           | 274                                       | 170,030            | 503,963            | 4,652            | 1.41           | 6,580                 | 1,134,766           |
| 1986<br>1987 | 1,690<br>1,660 | 33,213<br>33,463 | 278<br>295                                | 175,859<br>188,773 | 577,273<br>716,263 | $4,148 \\ 4,260$ | $1.05 \\ 1.26$ | 4,362<br>5,377        | 736,334<br>836,016  |
| 1987         | 1,705          | 33,951           | 307                                       | 188,527            | 1,252,674          | 3,312            | 1.17           | 3,882                 | 649,969             |
| 1989         | 1,702          | 37,090           | 285                                       | 203,173            | 1,395,116          | 3,297            | 1.58           | 5,225                 | 1,122,328           |
| 1990         | r1,672         | 38,422           | 272                                       | 236,079            | 1,253,637          | 3,476            | 1.38           | 4,800                 | r951,537            |
| 1991         | 1,566          | 36,465           | 270                                       | 222,252            | 874,360            | 3,632            | 1.50           | 5,448                 | 744,797             |
| 1992         | 1,649          | 34,060           | 318                                       | 185,920            | 608,237            | 3 <i>,</i> 230   | 1.47           | 4,736                 | 950,333             |
|              |                |                  |   |                    |                    |                  |                |                       |                     |

TABLE 21.6 - LIVESTOCK; WOOL PRODUCTION; AGRICULTURE

Area and production of principal grain crops (e)

(a) Figures relate to varying time periods (e.g. year ended 30 June, year ended 31 December, year ended 31 March), owing to changes in the method of data collection. (b) From 1943 figures relate to the season ended 31 March. (c) Comprises shorn, dead and fellmongered wool, and wool exported on skins. For 1947 and earlier, year ended 31 December; for the years 1949 to 1964 figures for 1949 and 1951 to 1955 exclude distributions of profits under the 1939-1945 War-time Wool Disposals Plan, aggregating \$13,869,934. Separate State figures are not available for distributions made from 1956 to 1958 when payments were virtually complete. (e) From 1944 figures relate to the season ended 31 March.

|              |                  |                 |                  | cipal grain cro |                  |                 | A                | primary c              | oss value o<br>ommodities |
|--------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|------------------------|---------------------------|
|              |                  | Dats            | 1                | Barley          | Hay (a           | ll kinds)       | Area<br>used for | pr                     | roduced (d                |
| Year (a)     | Area             | Produc-<br>tion | Area             | Produc-<br>tion | Area             | Produc-<br>tion | crops<br>(c)     | Agri-<br>culture       | Fisherie<br>(e            |
|              | '000<br>hectares | '000<br>tonnes  | ′000<br>hectares | '000<br>tonnes  | ′000<br>hectares | '000<br>tonnes  | '000<br>hectares | \$′000                 | \$'00                     |
| 1840         | n.a.             | n.a.            | n.a.             | n.a.            | _                | n.a.            | 1                | n.a.                   | n.a                       |
| 1850         | n.a.             | n.a.            | n.a.             | n.a.            | 1                | n.a.            | 3                | n.a.                   | n.a                       |
| 1860         |                  | _               | 1                | 1               | 2                | 8               | 10               | n.a.                   | n.a                       |
| 1870         | 1                | 1               | 2<br>2           | 2<br>2          | 7<br>8           | 21<br>20        | 22<br>26         | n.a.                   | n.a                       |
| 1880<br>1890 | 1                | 1               | 2                | 2               | 9                | 20              | 28               | n.a.<br>n.a.           | n.a<br>n.a                |
| 1900         | 2                | 2               | ī                | 1               | 42               | 106             | 81               | n.a.                   | n.a                       |
| 1910         | 25               | 14              | ĩ                | ĩ               | 71               | 182             | 346              | n.a.                   | n.a                       |
| 1920         | 78               | 37              | 4                | 3               | 108              | 268             | 730              | (f)29,364              | n.a                       |
| 1930         | 111              | 60              | _7               | 4               | 161              | 500             | 1,939            | (f)38,747              | 54                        |
| 1940         | 174              | 59              | 27               | 16              | 169              | 381             | 1,614            | 39,520                 | r56                       |
| 1950         | 237              | 132             | 28               | 22              | 87               | 276             | 1,737            | 141,348                | 1,43                      |
| 1951         | 237              | 144             | 24               | 21              | 72               | 231             | 1,834            | 233,827                | 1,64                      |
| 1952<br>1953 | 266<br>337       | 140<br>189      | 23<br>43         | 16<br>40        | 70<br>92         | 215<br>295      | 1,824<br>1,877   | 189,153<br>201,380     | 2,50<br>3,28              |
| 1955         | 297              | 174             | 85               | 62              | 89               | 299             | 1,812            | 210,428                | 3,80                      |
| 1955         | 354              | 174             | 105              | 64              | 117              | 310             | 2,041            | 186,361                | 4,38                      |
| 1956         | 442              | 300             | 136              | 106             | 109              | 390             | 2,118            | 221,435                | 4,91                      |
| 1957         | 425              | 189             | 139              | 85              | 98               | 293             | 2,080            | 216,295                | 5,56                      |
| 1958         | 467              | 250             | 124              | 81              | 137              | 392             | 2,230            | 204,911                | 6,53                      |
| 1959         | 538              | 410             | 130              | 123             | 135              | 462             | 2,434            | 231,149                | 7,81                      |
| 1960         | 502              | 356             | 170              | 161             | 129              | 440             | 2,583            | 256,002                | 8,62                      |
| 1961         | 538              | 396             | 219              | 193             | 115              | 387             | 2,734            | 266,972                | 8,56                      |
| 1962<br>1963 | 498<br>476       | 366<br>367      | 199<br>158       | 165<br>137      | 119<br>138       | 402<br>460      | 2,823<br>2,965   | 280,475<br>292,615     | 10,68<br>11,21            |
| 1964         | 470              | 324             | 133              | 92              | 138              | 395             | 2,714            | 300,766                | 10,18                     |
| 1965         | 466              | 254             | 123              | 84              | 123              | 396             | 2,950            | 296,147                | 15,21                     |
| 1966         | 502              | 422             | 167              | 147             | 118              | 421             | 3,419            | 406,097                | 15,73                     |
| 1967         | 487              | 401             | 151              | 152             | 119              | 424             | 3,463            | 411,084                | 16,52                     |
| 1968         | 469              | 359             | 168              | 159             | 129              | 428             | 3,595            | 428,258                | 21,95                     |
| 1969<br>1970 | 442<br>461       | 416<br>281      | 224<br>364       | 208<br>273      | 138<br>202       | 508<br>576      | 3,840<br>3,916   | 461,479<br>370,557     | 23,71<br>19,66            |
|              |                  |                 |                  |                 |                  |                 | -                |                        |                           |
| 1971<br>1972 | 520<br>454       | 520<br>414      | 632<br>911       | 769<br>1,000    | 190<br>177       | 673<br>653      | 3,831<br>3,751   | 445,390<br>461,581     | 25,12<br>30,81            |
| 1973         | 297              | 212             | 744              | 640             | 224              | 664             | 3,855            | 574,665                | 28,15                     |
| 1974         | 325              | 383             | 510              | 626             | 220              | 734             | 4,133            | 1,034,191              | 30,49                     |
| 1975         | 262              | 250             | 387              | 329             | 164              | 508             | 3,758            | 845,169                | 35,13                     |
| 1976         | 320              | 386             | 419              | 505             | 163              | 536             | 4,207            | 996,633                | 51,07                     |
| 1977         | 372              | 347             | 452              | 553             | 169              | 560             | 4,416            | 959,160                | 69,09                     |
| 1978<br>1979 | 415<br>427       | 416<br>491      | 614<br>616       | 751<br>778      | 191<br>184       | 597<br>586      | 4,910<br>4,993   | 993,889<br>1,343,932   | 88,34<br>96,05            |
| 1980         | 370              | 399             | 523              | 632             | 208              | 636             | 5,280            | 1,572,744              | 85,65                     |
| 1981         | 382              | 384             | 535              | 504             | 240              | 703             | 5,547            | 1,678,031              | 82,76                     |
| 1982         | 432              | 442             | 580              | 576             | 255              | 703             | 5,963            | 1,874,267              | 99,25                     |
| 1983         | 461              | 534             | 603              | 717             | 252              | 754             | 6,379            | 2,196,230              | 126,20                    |
| 1984         | 448              | 456             | 771              | 797             | 238              | 676             | 6,526            | 1,940,863              | 142,65                    |
| 1985         | 351              | 460             |                  | 1,431           | 226              | 747             | 6,723            | 2,602,205              | 165,44                    |
| 1986         | 288              | 338             | 826              | 1,024           | 201              | 633             | 5,970            | 2,213,118              | 143,03                    |
| 1987<br>1988 | 302<br>373       | 414<br>502      | 468<br>461       | 601<br>617      | 218<br>243       | 681<br>778      | 5,930<br>5,334   | 2,554,658<br>2,991,232 | 182,42<br>254,39          |
| 1966         | 389              | 618             | 383              | 552             | 243<br>248       | 873             | 5,082            | 3,719,597              | 234,39                    |
| 1990         | 340              | 529             | 421              | 628             | 229              | 811             | 5,174            | r3,369,132             | 231,67                    |
| 1991         | 323              | 496             | 498              | 742             | 219              | 772             | 5,354            | 2,736,407              | 264,48                    |
| 1992         | 367              | 614             | 554              | 900             | 239              | 901             | 5,216            | 2,789,228              | n.y.a                     |

#### TABLE 21.6 - AGRICULTURE - continued

(a) Figures relate to varying time periods (e.g. year ended 30 June, year ended 31 December, year ended 31 March), owing to changes in the method of data collection. (b) From 1944 figures relate to the season ended 31 March. (c) Excludes pasture hay, and from 1967 also excludes lucerne. (d) Estimated value of recorded production based on wholesale prices realised at principal market. (e) From 1980 excludes pearling and whaling. (f) Includes hunting.

|              |                               |                        |                    | -                      |   |   |
|--------------|-------------------------------|------------------------|--------------------|------------------------|---|---|
| Year         | <u>Gold produ</u><br>Quantity | ction (a) (b)<br>Value | Coal p<br>Quantity | roduction (b)<br>Value | Average valu<br>Wool (greasy)<br>per kg (d) | es f.o.b. (c)<br>Wheat per<br>tonne (e) |
|              | '000 grams                    | \$'000                 | '000 tonnes        | \$'000                 | cents                                       | \$                                      |
| 1860         | -                             |                        | _                  | _                      | n.a.  | 19.83                                   |
| 1870         | _                             | _                      | _                  | _                      | n.a.  | 10.05                                   |
| 1880<br>1890 | 622                           | 171                    |                    | _                      | n.a.<br>n.a.                                | 18.37                                   |
| 1900         | 43,980                        | 12,015                 | 120                | 110                    | n.a.  | <br>5.51                                |
| 1910         | 45,753                        | 12,494                 | 266                | 227                    | 16.20                                       | 14.85                                   |
| 1920<br>1930 | 19,222<br>13,001              | 6,951<br>3,729         | 469<br>509         | 701<br>770             | 28.26<br>19.37                              | 26.33<br>16.69                          |
| 1930         | 37,044                        | 25,393                 | 548                | 729                    | 25.68                                       | 11.19                                   |
| 1941         | 34,494                        | 23,703                 | 566                | 779                    | 28.70                                       | 14.49                                   |
| 1942         | 26,376                        | 17,731                 | 590                | 923                    | 28.64                                       | 15.12                                   |
| 1943         | 16,982                        | 11,421                 | 541                | 979                    | 32.19                                       | 15.09                                   |
| 1944<br>1945 | 14,494<br>14,588              | 9,800<br>10,021        | 567<br>552         | 1,166<br>1,146         | 34.81<br>34.24                              | 17.71<br>23.30                          |
| 1946         | 19,191                        | 13,280                 | 652                | 1,460                  | 34.92                                       | 31.81                                   |
| 1947         | 21,897                        | 15,151                 | 743                | 1,680                  | 45.64                                       | 48.42                                   |
| 1948<br>1949 | 20,684<br>20,155              | 14,314<br>15,926       | 745<br>763         | 1,760<br>1,944         | 76.41<br>94.20                              | 64.33<br>56.11                          |
| 1950         | 18,973                        | 18,933                 | 827                | 2,575                  | 105.91                                      | 57.03                                   |
| 1951         | 19,533                        | 19,451                 | 862                | 3,434                  | 263.50                                      | 62.25                                   |
| 1952         | 22,706                        | 23,696                 | 843                | 4,915                  | 138.10                                      | 62.64                                   |
| 1953<br>1954 | 25,629<br>26,469              | 26,598<br>26,627       | 900<br>1,034       | 6,146<br>7,178         | 148.04<br>156.20                            | 63.57<br>60.90                          |
| 1955         | 26,189                        | 26,749                 | 919                | 6,179                  | 135.39                                      | 52.22                                   |
| 1956         | 25,256                        | 26,405                 | 843                | 5,448                  | 112.66                                      | 46.57                                   |
| 1957<br>1958 | 27,900<br>26,967              | 29,102<br>28,357       | 852<br>885         | 5,105<br>4,561         | 144.67<br>130.80                            | 48.12<br>56.35                          |
| 1959         | 26,967                        | 28,388                 | 926                | 4,713                  | 91.87                                       | 51.76                                   |
| 1960         | 26,625                        | 28,140                 | 937                | 4,878                  | 115.37                                      | 49.48                                   |
| 1961         | 27,122                        | 28,584                 | 778                | 3,361                  | 99.10                                       | 49.91                                   |
| 1962<br>1963 | 26,717<br>24,883              | 28,115<br>26,375       | 934<br>916         | 3,962<br>3,970         | 109.80<br>111.38                            | 51.90<br>52.30                          |
| 1964         | 22,177                        | 23,383                 | 1,003              | 4,679                  | 134.47                                      | 52.01                                   |
| 1965         | 20,497                        | 22,381                 | 1,010              | 4,410                  | 120.58                                      | 51.66                                   |
| 1966<br>1967 | 19,564<br>17,916              | 23,316<br>21,690       | 1,078<br>1,079     | 4,562<br>4,765         | 116.00<br>117.46                            | 51.12<br>54.88                          |
| 1968         | 15,925                        | 19,407                 | 1,104              | 4,817                  | 105.69                                      | 51.31                                   |
| 1969         | 14,961                        | 19,040                 | 1,120              | 4,853                  | 107.60                                      | 51.26                                   |
| 1970         | 12,310                        | 15,811                 | 1,178              | 5,407                  | 98.11                                       | 47.72                                   |
| 1971<br>1972 | 10,736<br>10,848              | 13,674<br>14,835       | 1,190<br>1,188     | 5,653<br>5,855         | 75.33<br>74.94                              | 48.88<br>49.52                          |
| 1973         | 9,264                         | 16,718                 | 1,154              | 6,422                  | 150.21                                      | 49.67                                   |
| 1974         | 7,173                         | 19,183                 | 1,197              | 7,237                  | 215.36                                      | 98.75                                   |
| 1975<br>1976 | 6,305<br>7,644                | 29,788<br>27,141       | 1,879<br>2,157     | 12,511<br>17,613       | 144.37<br>147.62                            | 126.39<br>116.89                        |
| 1977         | 7,619                         | 31,586                 | 2,339              | 21,896                 | 188.10                                      | 105.10                                  |
| 1978<br>1979 | 13,653                        | 64,741                 | 2,435              | 24,846                 | 195.76                                      | 92.52                                   |
| 1979         | 12,231<br>11,598              | 78,313<br>158,253      | 2,406<br>3,039     | 34,484<br>54,464       | 207.87<br>253.81                            | 116.53<br>146.45                        |
| 1981         | 10,532                        | 165,376                | 3,127              | 63,100                 | 270.01                                      | 160.32                                  |
| 1982         | 16,135                        | 178,566                | 3,435              | 75,132                 | 288.61                                      | 155.48                                  |
| 1983<br>1984 | 22,992<br>26,183              | 334,802<br>365,453     | 3,903<br>3,942     | 95,529<br>106,325      | 303.41<br>317.08                            | 168.10<br>173.81                        |
| 1985         | 37,425                        | 508,892                | 3,942<br>3,673     | 109,120                | 353.01                                      | 187.09                                  |
| 1986         | 46,072                        | 707,114                | 3,765              | 126,841                | 376.50                                      | 185.14                                  |
| 1987<br>1988 | 64,911<br>90,546              | 1,300,079<br>1,843,770 | 3,782<br>3,702     | n.p.<br>150,965        | 430.31<br>651.33                            | 144.86<br>146.18                        |
| 1989         | 130,565                       | 2,072,692              | 3,800              | 161,241                | 721.94                                      | 202.00                                  |
| 1990         | 148,420                       | 2,371,726              | 4,161              | 183,698                | 627.18                                      | 223.06                                  |
| 1991         | 186,408                       | 2,695,269              | 5,218              | 232,916                | 374.30                                      | 201.31                                  |

 TABLE 21.7 - PRIMARY PRODUCTION — MISCELLANEOUS

(a)Prior to 1971 comprises gold refined at the Mint and gold contained in gold-bearing materials exported. From 1971 covers gold production as notified by the Department of Mines. (b) From 1969 figures relate to year ended 30 June. (c) From 1978 figures relate to foreign exports only. (d) From 1920 figures relate to year ended 30 June. (e) Prior to 1940 averages generally are based on exports of the previous season's wheat; from 1940 they relate to exports during the year ended 30 June.

|              | Manu-                       |                                 |                                 |                        |                        |                    | I                      | Productio                  | n of seleci    | ed comm            | odities        |                                    |
|--------------|-----------------------------|---------------------------------|---------------------------------|------------------------|------------------------|--------------------|------------------------|----------------------------|----------------|--------------------|----------------|------------------------------------|
| Year         | estab-<br>lish-<br>nents(b) | Persons<br>emp-<br>loyed<br>(c) | Wages<br>and<br>salaries<br>(d) | Turn-<br>over<br>(e)   | Value<br>added<br>(f)  | Bricks<br>(g)      | Scoured<br>wool<br>(h) | Bacon<br>and<br>ham<br>(i) | Butter<br>(j)  | Flour<br>(plain)   | Cheese<br>(k)  | Timber<br>from<br>loca<br>logs (l) |
|              | No.                         | No.                             | \$'000                          | \$′000                 | \$'000                 | '000               | toppos                 | toppos                     | tonnos         | toppos             | tonnos         | '000                               |
| 1000         |                             |                                 | •                               |                        |                        |                    | tonnes                 | tonnes                     | tonnes         | tonnes             | tonnes         | cu m                               |
| 1900<br>1910 | 632<br>822                  | 11,166<br>14,894                | 2,589<br>3,532                  | n.a.<br>10,158         | n.a.<br>5 <i>.</i> 472 | 25,234<br>23,162   | n.a.<br>n.a.           | n.a.<br>n.a.               | 132<br>291     | 11,375<br>33,401   | n.a.<br>n.a.   | 266<br>412                         |
| 1920         | 998                         | 16,942                          | 6,073                           | 26,283                 | 9,708                  | 31,838             | n.a.                   | 850                        | 553            | 108,976            | n.a.           | 325                                |
| 1930         | 1,466                       | 19,643                          | 8,310                           | 33,783                 | 14,976                 | 47,720             | n.a.                   | 1,180                      |                | 109,402            | n.a.           | 377                                |
| 1940         | 2,129                       | 22,967                          | 9,150                           | 40,615                 | 18,055                 | 43,786             | 2,459                  | 2,106                      | 6,351          | 127,776            | 382            | 360                                |
| 1950         | 3,023                       | 40,733                          | 30,586                          | 172,956                | 522,088                | 58,943             | 7,110                  | 3,599                      |                | 144,691            | 712            | 363                                |
| 1960         | 4,279                       | 49,651                          | 83,285                          | 431,165                | 172,747                | 110,359            | 15,271                 | 3,228                      | 7,494          | 136,780            | 1,466          | 532                                |
| 1961         | 4,334                       | 50,666                          | 90,255                          | 481,140                | 193,262                | 119,998            | 13,420                 | 3,214                      | 7,784          | 152,622            | 1,373          | 496                                |
| 1962         | 4,418                       | 51,033                          | 92,840                          | 486,988                | 196,083                | 119,868            | 14,459                 | 3,556                      | ,              | 128,007            | 1,386          | 505                                |
| 1963         | 4,492                       | 53,435                          | 99,880                          | 517,899                | 216,422                | 131,176            | 13,312                 | 3,899                      | 7,075          | 123,296            | 1,462          | 486                                |
| 1964         | 4,609                       | 55,705                          | 108,515                         | 555,058                | 230,511                | 155,792            | 12,464                 | 3,841                      | 7,026          | 129,996            | 1,530          | 517                                |
| 1965<br>1966 | 4,734<br>4,906              | 58,097<br>60,282                | 119,978<br>134,171              | 616,422<br>678,751     | 260,637<br>288,803     | 146,057<br>140,611 | 12,040<br>12,107       | 4,047<br>4,357             | 7,887<br>8,225 | 121,906<br>103,115 | 1,838<br>1,230 | 550<br>552                         |
| 1967         | 5,167                       | 63,757                          | 153,597                         | 765,224                | 335,788                | 163,166            | 12,107                 | 4,654                      | 6,529          | 91,725             | 1,230          | 533                                |
| 1968         | 5,404                       | 67,335                          | 175,100                         | 887,372                | 388,257                | 207,575            | 12,662                 | 5,173                      | 6,009          | 100,418            | 1,983          | 557                                |
| 1969         | 2,585                       | 59,853                          | 183,168                         | 919,555                | 361,473                | 273,078            | 14,415                 | 5,591                      | 6,332          | 96,641             | 2,022          | 444                                |
| 1970         | 2,705                       | 62,597                          |                                 | 1,028,778              | 414,999                | 288,949            | 14,940                 | 5,399                      | 5,915          | 92,635             | 1,718          | 450                                |
| 1971         |                             |                                 | — (m) -                         |                        |                        | 240,323            | 10,724                 | 4,863                      | 5,425          | 96,411             | 1,917          | 449                                |
| 1972         | 2,727                       | 64,217                          |                                 | 1,240,106              | 472,013                | 227,581            | 17,009                 | 5,116                      | 5,988          | 84,227             | 1,979          | 407                                |
| 1973         | 2,814                       | 64,074                          | 275,455                         | 1,375,859              | 501,034                | 278,610            | 11,987                 | 5,257                      | 5,324          | 77,680             | 1,869          | 405                                |
| 1974         | 2,818                       | 67,884                          | 346,942                         | 1,741,029              | 658,412                | 304,178            | 10,791                 | 5,530                      | 5,223          | 79,114             | 1,922          | 408                                |
| 1975         | 1,974                       | 65,852                          | 434,272                         | 2,032,374              | 779,842                | 262,905            | 11,779                 | 5,294                      | 4,981          | 84,486             | 2,291          | 392                                |
| 1976         | 2,054                       | 65,953                          | 508,931                         | 2,432,654              | 944,459                | 328,356            | 13,969                 | 5,439                      | 4,531          | 78,447             | 2,673          | 388                                |
| 1977<br>1978 | 2,035                       | 66,750                          | 594,514<br>629,095              | 2,882,421<br>3,031,505 | 1,151,619<br>1,208,749 | 385,942            | 15,818<br>13,308       | 5,836                      | 3,340          | n.a.               | 2,074          | 375                                |
| 1978         | 2,037<br>2,202              | 65,740<br>65,232                | 670,772                         | 3,498,828              | 1,208,749              | 357,391<br>381,092 | 16,129                 | 5,666<br>5,516             | 2,212<br>1,373 | n.a.<br>n.a.       | 1,812<br>2,364 | 386<br>341                         |
| 1980         | 2,301                       | 65,987                          |                                 | 4,259,065              | 1,643,325              | 404,954            | 20,128                 | 5,930                      | 995            | n.a.               | 2,866          | 349                                |
| 1981         | 2,426                       | 68,870                          | 869,223                         | 4,902,236              | 1,876,664              | 381,909            | 21.645                 | 6,062                      | 834            | n.a.               | 3,342          | 347                                |
| 1982         | 2,603                       |                                 | 1,013,397                       | 5,490,999              | 2,052,683              | 391,743            | 19,574                 | 6,074                      | 799            | n.a.               | 3,322          | 334                                |
| 1983         | 2,499                       | 64,980                          | 1,038,300                       | 5,596,500              | 2,040,900              | 279,164            | 13,747                 | 6,405                      | 914            | n.a.               | 3,417          | 257                                |
| 1984         | 2,408                       |                                 |                                 | 5, <u>9</u> 22,692     | 2,136,745              | n.p.               | 17,053                 | 6,807                      | 1,269          | n.a.               | 3,665          | 265                                |
| 1985         | 2,451                       | 64,242                          |                                 | 6,788,471              | 2,513,218              | n.p.               | 21,938                 | 7,862                      | 1,582          | n.a.               | 3,736          | 305                                |
| 1986         | 2 660                       | 60 227                          | (m) $-$                         | 0.015.005              | 2 008 404              | n.p.               | 22,992                 | 8,174                      | 1,595          | n.a.               | 3,400          | 329                                |
| 1987<br>1988 | 2,660<br>2,675              |                                 | 1,604,782                       | 8,215,095<br>9,416,932 | 2,998,694<br>n.a.      | n.p.               | 29,109<br>25,820       | 8,502<br>8,377             | 1,400<br>1,505 | n.a.<br>n.a.       | 3,727<br>3,772 | 317<br>319                         |
| 1989         | 2,675                       |                                 |                                 | 10,578,958             | n.a.                   | n.p.<br>n.a.       | 19,475                 | 9,937                      | (r)1.139       | n.a.               | (r)3.586       | 312                                |
|              | (n)2,561                    | 67.0                            | 1,786.7                         | 13,128.4               | 5,728.1                | n.a.               | 19,511                 | 9,937                      | 1,339          | n.a.               | 4,129          | 955                                |
| 1991         | 3,506                       | 64.3                            | 1,776.5                         | 13,140.5               | n.a.                   | n.a.               | 22,815                 | 10.674                     | 1,478          |                    | 5,256          | 263                                |
| 1992         | n.a                         | n.a.                            | n.a.                            | n.a.                   | n.a.                   | n.a.               | 27,320                 | 9,974                      | 1,990          |                    | 5,380          | 259                                |

#### **TABLE 21.8 – SECONDARY PRODUCTION**

(a) From 1930, year ended 30 June. (b) Excludes details of single establishment manufacturing enterprises employing fewer than four persons. For details of breaks in series refer to publications of Censuses of Manufacturing Establishments statistics. (c) Average over whole year including working proprietors. Prior to 1926-27 includes fellers and haulers employed by sawmills. From 1988, employment at 30 June. (d) Figures tor 1929-30 and later exclude amounts drawn by working proprietors. (e) Selling value 'at the tactory'. (f) Value added in course of manufacture, representing sum available for payment of wages, rent, depreciation, other sundry expenses and for interest and profit. (g) For years prior to 1964-65 figures represent clay bricks only (all sizes). (h) Excludes fellemongered, dead or waste wool. (i) From 1977-78 excludes canned bacon and ham. (j) For 1917 and earlier years, includes butter made on farms. Source: from 1977-78 to 1980-81, Western Australian Department of Agriculture; from 1981-82, the Australian Dairy Corporation. (k) Source: 1933-34 to 1967-68, annual manufacturing census; 1968-69 to 1970-71, Commonwealth Dairy Produce Equalisation Committee Limited; from 1977-72 to 1980-81, Form 1978-82, the Australian Department of Agriculture; from 1981-82, the Australian Dairy Corporation. (l) Prior to 1968-69, figures also include hewn timber. (m) No census of manufacturing establishments was conducted for this year. (n) From 1990, persons employed is in '000, wages and salaries in \$ millions and turnover in \$ millions.

| Year<br>ended  | Houses  | (b) (c)   | Other Re<br>building<br>Number of   | a<br>sidential<br>s (b)(c) res   | terations<br>and<br>dditions<br>(f) to<br>sidential<br>uildings                        | 1  | Non-resident  | tial building<br>Edu-   | r (g)  | Total<br>building   |
|--|---|---|---|--|--|--|---|---|--|---|
|  | Number (d)  | Value (e)   |   | Value (e) V  | Value (e)  | Factories  | Offices   | cational  | Total  | (e)   |
|  |   | \$m   |   | \$m  | \$m  | \$m  | \$m   | \$m   | \$m  | \$m   |
| 1947<br>1948<br>1949<br>1950   | 1,792<br>2,771<br>3,244<br>3,509  | 3.5<br>5.8<br>7.6<br>9.0  | <br>101   | 0.2  |  | $0.1 \\ 0.2 \\ 0.4 \\ 0.4$   | n.a.<br>n.a.<br>n.a.<br>n.a.  | n.a.<br>n.a.<br>n.a.<br>n.a.  | 0.7<br>0.9<br>1.8<br>1.5   | 4.2<br>6.7<br>9.4<br>10.7   |
| 1951<br>1952<br>1953<br>1954<br>1955<br>1956<br>1957<br>1958<br>1959<br>1959<br>1960 | 5,160<br>6,577<br>7,965<br>7,627<br>8,792<br>7,760<br>5,030<br>6,196<br>5,846<br>5,997          | 15.0<br>24.5<br>38.0<br>39.8<br>48.4<br>45.1<br>29.1<br>36.5<br>34.4<br>35.5                      | 305<br>215<br>100<br>22<br>316<br>584<br>365<br>171<br>212<br>263                               | $\begin{array}{c} 0.6 \\ 0.3 \\ 0.8 \\ 1.2 \\ 2.6 \\ 1.5 \\ 0.7 \\ 0.8 \\ 1.0 \end{array}$     | (h)  | 2.5<br>2.8<br>2.4  | n.a.<br>n.a.<br>n.a.<br>n.a.<br>0.8<br>2.0<br>3.9<br>2.4<br>1.5                                       | n.a.<br>n.a.<br>n.a.<br>n.a.<br>2.2<br>1.2<br>1.1<br>4.6<br>5.8                                       | $\begin{array}{c} 2.3 \\ 4.1 \\ 7.5 \\ 11.0 \\ 18.6 \\ 19.7 \\ 16.3 \\ 17.3 \\ 25.3 \\ 23.8 \end{array}$ | $\begin{array}{c} 17.9\\ 28.9\\ 45.8\\ 51.6\\ 68.2\\ 67.4\\ 46.8\\ 54.5\\ 60.5\\ 60.2\end{array}$                 |
| 1961<br>1962<br>1963<br>1964<br>1965<br>1966<br>1967<br>1968<br>1969<br>1969<br>1970 | 5,973<br>6,082<br>6,593<br>7,276<br>7,445<br>8,272<br>9,858<br>12,840<br>13,933                 | 38.1<br>39.5<br>45.8<br>51.8<br>57.2<br>58.1<br>78.1<br>97.4<br>133.3<br>151.3                    | 440<br>265<br>642<br>1,295<br>1,841<br>1,624<br>1,742<br>2,392<br>3,491<br>5,596                | $ \begin{array}{r} 1.6\\ 1.3\\ 3.0\\ 5.6\\ 9.0\\ 9.1\\ 9.3\\ 12.6\\ 22.4\\ 40.5\end{array} $   |  | 4.7<br>3.0<br>4.9<br>5.4<br>6.8<br>9.6<br>9.8<br>15.1<br>15.8<br>16.6        | $\begin{array}{c} 4.1 \\ 2.9 \\ 1.6 \\ 6.0 \\ 2.8 \\ 10.6 \\ 7.1 \\ 14.6 \\ 10.9 \\ 14.3 \end{array}$ | $\begin{array}{c} 8.0 \\ 6.0 \\ 7.7 \\ 6.2 \\ 8.0 \\ 8.5 \\ 10.5 \\ 12.1 \\ 14.1 \\ 13.3 \end{array}$ | 32.4<br>27.3<br>37.7<br>35.5<br>40.8<br>63.0<br>74.7<br>85.5<br>99.2<br>111.6                            | 72.0<br>68.1<br>86.4<br>92.9<br>107.1<br>130.2<br>162.1<br>195.4<br>254.8<br>303.4                                |
| 1971<br>1972<br>1973   | 11,900<br>13,209<br>13,660  | 149.3<br>165.5<br>163.4   | 5,013<br>1,595<br>920   | 40.0<br>13.9<br>7.3  | 0.4<br>1.2<br>1.8  | 21.3   | 39.7<br>19.4<br>21.2  | 20.6<br>16.3<br>24.8  | 175.4<br>150.8<br>151.5  | 365.0<br>331.4<br>324.0   |
| 1974<br>1975<br>1976<br>1977<br>1978<br>1979<br>1980                                 | 12,517<br>10,994<br>12,080<br>15,155<br>12,685<br>11,148<br>11,648                              | 176.4<br>198.6<br>253.8<br>395.0<br>378.8<br>349.1<br>380.9                                       | 3,546<br>3,300<br>2,948<br>6,152<br>4,681<br>3,507<br>4,156                                     | 32.8<br>38.9<br>44.0<br>113.9<br>98.9<br>74.9<br>93.2  | 2.8<br>4.4<br>8.7<br>15.4<br>21.5<br>30.5<br>33.3                                      | 18.2<br>22.4<br>26.6<br>34.6<br>44.0<br>51.5                                 | 19.0<br>18.4<br>45.7<br>43.5<br>18.2<br>33.2<br>49.9  | 21.8<br>40.0<br>58.3<br>29.5<br>46.1<br>56.3<br>33.2  | 139.2<br>170.1<br>227.3<br>226.4<br>234.1<br>339.3<br>301.9  | 351.2<br>412.0<br>533.8<br>750.7<br>733.3<br>793.8<br>809.4   |
| 1981<br>1982<br>1983<br>1984<br>1985<br>1986<br>1987<br>1988<br>1989<br>1990<br>1991 | 10,120<br>9,440<br>9,070<br>10,340<br>12,620<br>12,330<br>12,390<br>14,660<br>17,690<br>r11,385 | 375.5<br>398.5<br>372.5<br>407.4<br>583.9<br>615.7<br>651.5<br>694.4<br>906.9<br>1,296.1<br>904.3 | 4,531<br>5,255<br>4,020<br>2,124<br>3,735<br>4,217<br>3,619<br>3,518<br>4,631<br>7,229<br>3,959 | 108.0<br>165.0<br>143.4<br>75.9<br>115.3<br>158.1<br>144.3<br>140.6<br>193.6<br>367.9<br>240.6 | 37.5<br>51.9<br>47.4<br>41.0<br>51.9<br>60.5<br>70.4<br>80.2<br>99.5<br>142.0<br>143.5 | 52.6<br>45.2<br>19.0<br>27.9<br>91.5<br>39.0<br>63.4<br>81.3<br>97.4<br>59.3 | 75.0<br>131.5<br>152.1<br>75.0<br>55.6<br>149.9<br>155.8<br>208.1<br>263.6<br>343.5<br>203.1          | 29.6<br>39.9<br>37.7<br>45.1<br>30.7<br>65.3<br>99.2<br>120.9<br>65.1<br>161.9<br>117.5               | 308.8<br>495.6<br>464.3<br>351.0<br>357.5<br>630.8<br>795.0<br>884.5<br>959.5<br>1,194.0<br>761.4        | 829.7<br>1,111.0<br>1,027.5<br>875.4<br>1,108.6<br>1,465.1<br>1,661.2<br>1,799.7<br>2,159.5<br>3,000.0<br>2,049.8 |
| 1992   | 11,539  | 892.7   | 3,377   | 195.5  | 139.6  | 19.1   | 611.6   | 91.6  | 1,081.0  | 2,308.9   |

#### TABLE 21.9 - BUILDING COMPLETED (a)

(a) From 1981 figures are not strictly comparable with those for earlier periods. (b) Prior to 1970-71 figures include alterations and additions to dwellings. Data for 1970-71 and later years relate to new dwellings only. (c) From July 1973 changes in the classification of residential buildings mean that figures for earlier years are not comparable (d) From 1981 numbers of new houses are rounded to nearest ten units. (e) Excludes the value of land. (f) Valued at \$10,000 and over. (g) From 1 July 1990, valued at \$50,000 and over (includes alterations and additions). From 1 July 1985 to 30 June 1990, valued at \$30,000 and over (includes alterations and additions). (h) Not available separately; included with Houses and Other residential buildings as appropriate.

|              | State Gove<br>railway |                  | Private<br>railways |                | ssenger            |                    |                    |                    |
|--------------|-----------------------|------------------|---------------------|----------------|--------------------|--------------------|--------------------|--------------------|
|              | Route<br>kilometres   |                  | Route<br>kilometres | Perth 2        | ements<br>Airport  | Customs and        | d excise gros      | s revenue (c)      |
| Year         | at end of<br>year (b) | Paying<br>goods  | at end of<br>year   | Internal       | Inter-<br>national | Customs            | Excise             | Total              |
|              |                       | ′000 t           |                     | ·000           | <i>'</i> 000       | \$'000             | \$'000             | \$'000             |
| 1870         | _                     | _                | —                   |                |                    | 81                 | _                  | 81                 |
| 1880         | 55                    | 2                | 61                  |                |                    | 186                | _                  | 186                |
| 1890         | 303                   | 62               | 620                 |                |                    | 356<br>1,889       | 63                 | 356                |
| 1900<br>1910 | 2,181<br>3,452        | 1,406<br>2,278   | 1,003<br>1,452      |                |                    | 1,543              | 213                | 1,952<br>1,756     |
| 1920         | 5,695                 | 2,656            | 1,477               |                |                    | 1,311              | 799                | 2,110              |
| 1930         | 6,616                 | 3,587            | 1,363               | n.a.           |                    | 3,882              | 1,527              | 5,409              |
| 1940         | 7,051                 | 2,702            | 1,337               | n.a.           |                    | 3,769              | 2,395              | 6,164              |
| 1950         | 6,843                 | 2,889            | 1,246               | n.a.           |                    | 10,166             | 10,943             | 21,109             |
| 1951         | 6,804                 | 3,082            | 1,210               | n.a.           |                    | 10,839             | 11,973             | 22,812             |
| 1952         | 6,619                 | 3,112            | 1,210               | n.a.           | n.a.               | 14,045             | 16,312             | 30,357             |
| 1953<br>1954 | 6,611<br>6,616        | 2,661<br>3,257   | 1,165<br>1,220      | n.a.<br>n.a.   | n.a.<br>n.a.       | 9,908<br>12,241    | 18,395<br>19,447   | 28,303<br>31,688   |
| 1955         | 6,616                 | 3,461            | 1,204               | n.a.           | n.a.               | 12,196             | 21,812             | 34,008             |
| 1956         | 6,629                 | 3,854            | 1,168               | n.a.           | n.a.               | 8,473              | 24,092             | 32,565             |
| 1957         | 6,626                 | 4,291            | 1,136               | n.a.           | n.a.               | 5,504              | 30,078             | 35,582             |
| 1958         | 6,626                 | 3,647            | 925                 | n.a.           | n.a.               | 5,476              | 32,547             | 38,023             |
| 1959<br>1960 | 6,626<br>6,630        | 3,976<br>4,605   | 925<br>832          | n.a.<br>n.a.   | n.a.<br>n.a.       | 4,800<br>5,614     | 32,398<br>33,634   | 37,198<br>39,248   |
|              |                       |                  |                     |                |                    | -                  | -                  |                    |
| 1961<br>1962 | 6,635<br>6,198        | 4,911<br>5,428   | 755<br>898          | n.a.<br>n.a.   | n.a.<br>n.a.       | 7,470<br>7,156     | 33,835<br>35,705   | 41,305<br>42,861   |
| 1963         | 6,111                 | 4,870            | 888                 | n.a.           | n.a.               | 8,996              | 35,944             | 44,940             |
| 1964         | 5,918                 | 5,271            | 665                 | n.a.           | n.a.               | 10,369             | 37,839             | 48,208             |
| 1965         | 6,008                 | 5,133            | 34                  | n.a.           | n.a.               | 10,692             | 43,349             | 54,041             |
| 1966         | 6,030                 | 6,486            | 460                 | 270            | 26                 | 15,251             | 53,536             | 68,787             |
| 1967<br>1968 | 6,140<br>6,140        | 7,999<br>9,053   | 455<br>455          | 294<br>340     | 36<br>49           | 13,569<br>19,468   | 58,176<br>62,903   | 71,745<br>82,371   |
| 1969         | 6,157                 | 9,078            | 882                 | 382            | 54                 | 21,202             | 69,289             | 90,490             |
| 1970         | 6,161                 | 10,837           | 884                 | 467            | 69                 | 24,649             | 76,637             | 101,286            |
| 1971         | 6,175                 | 13,457           | 884                 | 541            | 84                 | 32,262             | 88,978             | 121,240            |
| 1972         | 6,116                 | 13,867           | 884                 | 524            | 105                | 30,072             | 101,883            | 131,955            |
| 1973         | 6,168                 | 13,706           | 1,220               | 596            | 117                | 25,714             | 106,054            | 131,768            |
| 1974         | 6,192                 | 15,059           | 1,222               | 668            | 139                | 30,612             | 138,197            | 168,809            |
| 1975<br>1976 | 6,075<br>6,163        | 16,348<br>17,812 | 1,181<br>1,179      | 681<br>658     | 165<br>197         | 44,114<br>46,767   | 148,310<br>183,838 | 192,424<br>230,605 |
| 1977         | 6,165                 | 19,003           | 1,155               | 746            | 206                | 63,037             | 203,852            | 266,889            |
| 1978         | 5,764                 | 18,625           | 1,150               | 815            | 225                | 68,118             | 216,929            | 285,047            |
| 1979         | 5,764                 | 19,288           | 1,155               | 879            | 261                | 71,704             | 256,486            | 328,190            |
| 1980         | 5,773                 | 21,388           | 1,159               | 928            | 325                | 83,620             | 260,299            | 343,919            |
| 1981         | 5,773                 | 20,271           | 1,160               | 960            | 377                | 110,939            | 283,499            | 394,438            |
| 1982         | 5,609                 | 19,776           | 1,181               | 1,027          | 434                | 128,866            | 198,397            | 327,263            |
| 1983<br>1984 | 5,610<br>5,623        | 19,791<br>19,870 | 1,177<br>1,177      | 1,005<br>1,075 | 414<br>455         | 130,752<br>133,088 | 379,889<br>492,117 | 510,641<br>625,205 |
| 1985         | 5,563                 | 22,085           | 1,285               | 1,195          | 502                | 176,416            | 496,172            | 672,588            |
| 1986         | 5,553                 | 20,877           | 1,185               | 1,264          | 569                | 196,027            | 444,311            | 640,338            |
| 1987         | 5,553                 | 21,264           | 1,185               | 1,432          | 649                | 213,647            | 284,677            | 498,324            |
| 1988         | 5,553                 | 21,946           | 1,191               | 1,471          | 714                | 232,397            | 330,699            | 563,096            |
| 1989<br>1990 | 5,553                 | 24,294           | 1,198               | 1,140          | 812                | 260,204            | 326,816            | 587,020            |
| 1990         | 5,554<br>5,554        | 24,906<br>24,410 | n.a.<br>n.a.        | 1,399<br>1,939 | 861<br>824         | 258,328<br>n.a.    | 376,293<br>n.a.    | 634,621<br>n.a.    |
|              | 0,001                 | 24,410           | 11.4.               | 1,555          | 024                | 11.4.              |                    |                    |

TABLE 21.10 - TRANSPORT; CUSTOMS AND EXCISE

(a) From 1900, year ended 30 June. (b) Open for general and passenger traffic. (c) From 1915, year ended 30 June.

|              | Net              | v motor vehic                                    | les register           | ed (a)           | 1                  | Motor vehicles                                   | er (d)                 |                    |                |                      |
|--------------|------------------|--|------------------------|------------------|--------------------|--|------------------------|--------------------|----------------|----------------------|
| Year         |                  | Utilities,<br>panel vans,<br>trucks and<br>buses | Motor<br>cycles<br>(c) | Total            |                    | Utilities,<br>panel vans,<br>trucks<br>and buses | Motor<br>cycles<br>(c) | Total              |                | rts of–<br>Sheep (f) |
|              |                  |  |                        |                  |                    |  |                        |                    | \$'000         | \$'000               |
| 1860         | n.a.             | n.a.   | n.a.                   | n.a.             | n.a.               | n.a.   | n.a.                   | n.a.               | _              | 4                    |
| 1870         | n.a.             | n.a.   | n.a.                   | n.a.             | n.a.               | n.a.   | n.a.                   | n.a.               | _              |                      |
| 1880         | n.a.             | n.a.   | n.a.                   | n.a.             | n.a.               | n.a.   | n.a.                   | n.a.               | _              | _                    |
| 1890         | n.a.             | n.a.   | n.a.                   | n.a.             | n.a.               | n.a.   | n.a.                   | n.a.               | 1              | 2                    |
| 1900<br>1910 | n.a.<br>n.a.     | n.a.<br>n.a.                                     | n.a.<br>n.a.           | n.a.<br>n.a.     | n.a.<br>n.a.       | n.a.<br>n.a.                                     | n.a.<br>n.a.           | n.a.<br>n.a.       | 16             | 2<br>2<br>9          |
| 1920         | n.a.             | n.a.   | n.a.                   | n.a.             | 3,404              | n.a.   | n.a.                   | 73                 |                | 28                   |
| 1930         | n.a.             | n.a.   | n.a.                   | n.a.             | 31,130             | 11,358   | 7,707                  | 50,195             | 1              | $\frac{1}{46}$       |
| 1940         | 2,871            | 1,517  | 399                    | 4,787            | 38,907             | 25,026   | 6,789                  | 70,222             | _              | 65                   |
| 1950         | 8,926            | 4,707  | 2,346                  | 15,979           | 48,632             | 43,206   | 12,897                 | 104,735            | 5              | 426                  |
| 1951         | 8,201            | 6,610  | 2,802                  | 17,613           | 56,235             | 47,908   | 14,535                 | 118,678            | 9              | 616                  |
| 1952         | 8,836            | 5,750  | 2,740                  | 17,326           | 64,277             | 52,627   | 16,047                 | 132,951            | 23             | 631                  |
| 1953         | 6,879            | 4,881  | 1,416                  | 13,176           | 69,917             | 56,445   | 15,565                 | 141,927            | 23             | 501                  |
| 1954         | 9,926            | 5,601  | 1,258                  | 16,785           | 78,312             | 60,362   | 15,243                 | 153,917            | 29             | 568                  |
| 1955         | 12,394           | 5,993  | 1,202                  | 19,589           | 90,255             | 63,870   | 14,662                 | 168,787            | 68             | 612                  |
| 1956         | 10,100           | 5,203  | 1,089                  | 16,392           | 99,206             | 62,809   | 12,959                 | 174,974            | 177            | 625                  |
| 1957<br>1958 | 9,321<br>10,140  | 4,418<br>5,562                                   | 1,192<br>1,702         | 14,931<br>17,404 | 104,506<br>111,825 | 63,315<br>63,598                                 | 12,731<br>12,631       | 180,552<br>188,054 | 243<br>308     | 923<br>841           |
| 1958         | 10,140           | 5,140  | 2,071                  | 17,600           | 119,957            | 65,588   | 12,031                 | 198,359            | 396            | 764                  |
| 1960         | 13,492           | 5,695  | 1,949                  | 21,136           | 130,476            | 68,702   | 12,876                 | 212,054            | 325            | 845                  |
| 1961         | 15,161           | 5,542  | 1,080                  | 21,783           | 141,612            | 70,974   | 12,589                 | 225,175            | 318            | 881                  |
| 1962         | 17,082           | 5,833  | 902                    | 23,817           | 155,447            | 74,224   | 12,390                 | 242,061            | 55             | 1,254                |
| 1963         | 23,175           | 6,367  | 754                    | 30,296           | 169,800            | 75,500   | 11,500                 | 256,800            | 160            | 1,495                |
| 1964         | 24,958           | 7,013  | 628                    | 32,599           | 186,200            | 77,700   | 10,200                 | 274,100            | 331            | 1,433                |
| 1965         | 23,304           | 6,897  | 553                    | 30,754           | 197,800            | 78,500   | 8,900                  | 285,200            | 427            | 1,376                |
| 1966         | 23,418           | 9,170  | 706                    | 33,294           | 212,600            | 83,300   | 8,400                  | 304,300            | 283            | 1,633                |
| 1967         | 27,922           | 9,404  | 1,158                  | 38,484           | 231,200            | 86,300   | 8,400                  | 325,900            | 381            | 1,771                |
| 1968         | 33,368           | 10,448   | 1,525                  | 45,341           | 252,300            | 90,800   | 8,900                  | 352,000            | 1,229          | 2,191                |
| 1969<br>1970 | 35,379<br>37,764 | 11,018<br>11,138                                 | 1,539<br>1,945         | 47,936<br>50,847 | 275,300<br>301,000 | 94,500<br>99,900                                 | 9,600<br>10,800        | 379,400<br>411,700 | 972<br>760     | 2,943<br>2,876       |
|              |                  |  |                        |                  | -                  | ,  |                        | -                  |                |                      |
| 1971         | 37,769           | 10,872   | 2,718                  | 51,359           | 328,500            | <u>104,900</u>                                   | 12,200                 | 445,600            | 1,159          | 2,710                |
| 1972         | 37,274           | 9,819  | 3,985                  | 51,078           | 346,300            | 104,600  | 14,200                 | 465,100            | 1,865          | 3,871                |
| 1973<br>1974 | 36,904           | 11,425   | 4,914<br>7,062         | 53,243<br>59,605 | 364,400            | 107,400  | 16,800                 | 488,600<br>523,000 | 1,661<br>2,111 | 7,959<br>12,539      |
| 1974<br>1975 | 40,302<br>41,474 | 12,241<br>13,693                                 | 6,613                  | 61,780           | 389,300<br>414,800 | 112,700<br>125,000                               | 21,000<br>24,600       | 564,400            | 1,498          | 12,862               |
| 1976         | 40,338           | 15,863   | 5,731                  | 61,932           | 437,200            | 140,000  | 27,600                 | 604,800            | 1,464          | 14,436               |
| 1977         | 44,363           | 17,362   | 3,887                  | 65,612           | 473,731            | 153,174  | 28,022                 | 654,927            | 2,533          | 34,905               |
| 1978         | 40,990           | 16,538   | 3,339                  | 60,867           | 500,365            | 167,107  | 28,051                 | 695,523            | 3,071          | 35,985               |
| 1979         | 40,882           | 14,025   | 2,713                  | 57,620           | 518,705            | 174,064  | 26,916                 | 719,685            | 3,182          | 45,915               |
| 1980         | 40,232           | 13,716   | 4,600                  | 58,548           | 535,613            | 179,844  | 29,531                 | 744,988            | 1,748          | 91,763               |
| 1981         | 41,660           | 15,223   | 6,088                  | 62,971           | 552 <i>,</i> 552   | 187,599  | 33,009                 | 773,160            | 2 <i>,</i> 899 | 100,340              |
| 1982         | 42,329           | 16,079   | 5,835                  | 64,243           | 573 <i>,</i> 400   | 197,344  | 35,213                 | 805,957            | 3,039          | <b>94,82</b> 5       |
| 1983         | 38,812           | 15,043   | 5,147                  | 59,002           | 576,893            | 196,539  | 35,852                 | 809,284            | 5,476          | 94,630               |
| 1984         | 39,737           | 15,199   | 3,969                  | 58,905           | 592,495            | 201,754  | 35,770                 | 830,019            | 5,824          | 92,700               |
| 1985         | 46,070           | 17,956   | 4,310                  | 68,336           | 615,442            | 214,649  | 36,229                 | 866,320            | 3,432          | 82,430               |
| 1986         | 42,645           | 13,676   | 3,350                  | 59,671<br>46 145 | 632,182            | 218,851  | 36,324                 | 887,357            | 5,339          | 84,317               |
| 1987<br>1988 | 33,642<br>36,040 | 10,198<br>10,617                                 | 2,305<br>2,215         | 46,145<br>48,872 | 647,734<br>670,158 | 223,030<br>230,161                               | 35,287<br>35,442       | 906,051<br>935,761 | 4,969          | 105,015              |
| 1989         | 44,100           | 14,149   | 2,215                  | 60,771           | 708,253            | 241,698  | 36,294                 | 986,245            | (g)<br>3,371   | (g)<br>62,256        |
| 1990         | 42,728           | 13,735   | 2,875                  | 59,338           | 746,194            | 254,009  | 37,452                 | 1,037,655          | 6,094          | 62,046               |
| 1991         | 36,926           | 10,874   | 2,784                  | 50,584           | 764,157            | 259,246  | 38,240                 | 1,061,643          | 7,663          | 43,432               |
| 1992         | 41,979           | 9,573  | 1,814                  | 53,366           | 781,600            | 262,294  | 37,816                 | 1,081,710          | 4,712          | 67,636               |

#### TABLE 21.11 - MOTOR VEHICLE REGISTRATIONS; EXPORTS OF CATTLE AND SHEEP

(a) Year ended 30 June. (b) From 1959, includes station wagons previously included with commercial vehicles. (c) Including motor scooters. (d) From 1929, at 30 June; for earlier years, at various dates. For years before 1946, excludes Commonwealth Government-owned vehicles; from 1946, includes Commonwealth Government-owned vehicles other than those of defence services. From 1956 to 1976, series based on the results of the periodic census of motor vehicles. Improvements in the methodology used to produce statistics of motor vehicles on register have resulted in a break in the continuity of the series from 30 June 1983. (e) From June 1956, includes station wagons previously included with commercial vehicles. (f) Excludes interstate exports. Details are not available for publication. (g) Details not available.

|              | Beef an          |                  | s—Fresh, chu<br>Mutton ar |                  |                | ment           | Rock lob       | sters (c)          | Wheat e                | xports (d)         |
|--------------|------------------|------------------|---------------------------|------------------|----------------|----------------|----------------|--------------------|------------------------|--------------------|
| Year (b)     | Quantity         | Value            | Quantity                  |                  | Quantity       | Value          | Quantity       | Value              | Quantity               | Value              |
|              | tonnes           | \$'000           | tonnes                    | \$'000           | tonnes         | \$'000         | tonnes         | \$'000             | tonnes                 | \$'000             |
| 1840<br>1850 | _                | _                |                           | _                | _              | _              |                | _                  | 1                      | _                  |
| 1850         | _                | _                |                           | _                | _              | _              | _              | _                  |                        | _                  |
| 1870         | _                | _                | -                         | _                | _              | _              |                | —                  | 408                    | 8                  |
| 1880<br>1890 | _                | _                |                           | _                | _              | _              | _              | _                  | 27                     | _                  |
| 1900         |                  |                  |                           |                  |                |                |                | _                  | 54,839                 | 813                |
| 1910         |                  |                  | _                         |                  | _              | _              | _              | -                  | 249,049                | 5,083              |
| 1920<br>1930 | 300<br>5,162     | 33<br>272        | _                         |                  | _              | _              | _              |                    | 679,109                | 12,258             |
| 1940         | 4,826            | 329              | 4,665                     | 533              | 2,263          | 324            | _              |                    | 417,214                | 4,669              |
| 1950         | 8,625            | 1,183            | 2,392                     | 485              | 163            | 59             | 518            | 463                | 585,406                | 33,384             |
| 1951         | 7,699            | 1,221            | 939                       | 217              | 279            | 113            | 1,436          | 1,517              | 830,346                | 51,688             |
| 1952<br>1953 | 6,028<br>5,016   | 1,135<br>1,437   | 1,044<br>6,589            | 301<br>1,463     | 424<br>463     | 232<br>303     | 1,311<br>1,329 | 1,861<br>2,085     | 730,002<br>634,639     | 45,728<br>40,347   |
| 1954         | 6,148            | 1,748            | 3,309                     | 875              | 215            | 152            | 1,461          | 2,342              | 185,066                | 11,272             |
| 1955         | 6,776            | 2,038            | 3,225                     | 1,328            | 1,049          | 532<br>482     | 1,532          | 2,490              | 526,212<br>619,779     | 27,478<br>28,860   |
| 1956<br>1957 | 7,601<br>4,127   | 2,343<br>1,221   | 6,602<br>5,788            | 2,156<br>1,741   | 743<br>733     | 402<br>588     | 1,601<br>1,618 | 3,022<br>3,514     | 1,273,578              | 61,291             |
| 1958         | 11,025           | 3,302            | 5,083                     | 1,900            | 2,324          | 1,462          | 2,136          | 3,965              | 725,131                | 40,861             |
| 1959<br>1960 | 10,535<br>13,597 | 4,342<br>6,742   | 9,944<br>8,735            | 3,177<br>2,378   | 1,983<br>1,188 | 1,178<br>953   | 2,715<br>2,996 | 5,281<br>6,499     | 639,647<br>999,164     | 33,113<br>49,442   |
| 1961         | 12,413           | 6,141            | 11,367                    | 3,901            | 1,894          | 1,501          | 2,316          | 5,881              | 1,428,272              | 71,280             |
| 1962         | 12,544           | 6,299            | 8,468                     | 2,436            | 3,151          | 2,025          | 3,607          | 9,778              | 2,010,766              | 104,356            |
| 1963<br>1964 | 17,268<br>20,528 | 9,382<br>11,497  | 7,428<br>5,385            | 2,401<br>1,895   | 2,061<br>861   | 1,404<br>718   | 3,490<br>3,416 | 8,910<br>9,211     | 1,380,372<br>1,497,453 | 72,197<br>77,881   |
| 1965         | 20,328           | 11,497           | 5,040                     | 1,995            | 571            | 516            | 2,672          | 10,592             | 1,102,420              | 56,955             |
| 1966         | 18,115           | 12,108           | 10,319                    | 4,357            | 420            | 376            | 3,193          | 13,821             | 1,887,996              | 96,515             |
| 1967<br>1968 | 16,912<br>16,821 | 11,987<br>12,995 | 9,652<br>13,153           | 3,723<br>4,745   | 565<br>547     | $470 \\ 474$   | 3,643<br>3,919 | 13,873<br>17,989   | 2,312,777<br>2,373,195 | 126,918<br>121,764 |
| 1969         | 20,210           | 16,939           | 21,523                    | 7,218            | 642            | 564            | 3,038          | 17,133             | 1,521,376              | 77,987             |
| 1970         | 23,645           | 21,508           | 29,661                    | 11,271           | 1,437          | 1,175          | 2,976          | 15,695             | 1,814,787              | 86,593             |
| 1971<br>1972 | 20,257<br>24,435 | 17,626<br>22,528 | 24,244<br>42,994          | 9,396<br>17,645  | 1,126<br>2,503 | 895<br>1,995   | 3,155<br>3,425 | 19,413<br>24,626   | 2,670,890<br>2,587,504 | 130,564<br>128,132 |
| 1972         | 33,325           | 36,614           | 39,853                    | 26,103           | 7,630          | 6,382          | 3,171          | 20,919             | 2,249,934              | 111,744            |
| 1974         | 34,778           | 43,039           | 27,189                    | 23,682           | 5,939          | 5,772          | 2,656          | 18,511             | 2,139,973              | 211,333            |
| 1975<br>1976 | 31,083<br>35,732 | 25,993<br>32,693 | 33,240<br>52,120          | 22,107<br>34,009 | 2,283<br>2,451 | 3,037<br>3,696 | 3,328<br>3,128 | 25,258<br>27,777   | 3,241,895<br>3,215,792 | 409,758<br>375,897 |
| 1977         | 53,051           | 53,291           | 60,373                    | 48,913           | 1,292          | 1,968          | 4,071          | 47,061             | 3,009,101              | 316,258            |
| 1978         | 57,827           | 64,896           | 42,532                    | 40,885           | 620            | 984            | 3,902          | 48,043             | 3,795,969              | 351,190            |
| 1979<br>1980 | 51,932<br>41,372 | 90,216<br>93,547 | 26,250<br>44,699          | 31,059<br>51,230 | 382<br>204     | 693<br>460     | 4,170<br>3,626 | 51,064<br>50,448   | 2,208,985<br>4,205,774 | 257,414<br>615,944 |
| 1981         | 40,672           | 87,669           | 44,142                    | 57,515           | 144            | 334            | 2,858          | 42,480             | 2,634,951              | 422,433            |
| 1982         | 38,399           | 73,673           | 25,367                    | 37,057           | 225            | 446            | 4,849          | 77,930             | 3,826,760              | 594,992            |
| 1983<br>1984 | 41,659<br>32,492 | 88,972<br>80,442 | 29,073<br>26,000          | 43,133<br>39,114 | 99<br>282      | 344<br>829     | 5,424<br>6,506 | 88,175<br>111,954  | 5,031,977<br>3,637,624 | 845,855<br>632,247 |
| 1985         | 30,327           | 77,403           | 21,329                    | 33,808           | 150            | 567            | 4,778          | 126,644            | 4,543,782              | 850,090            |
| 1986         | 28,012           | 76,709           | 27,055                    | 41,766           | 122            | 373            | 4,267          | 114,568            | 5,342,611              | 989,144            |
| 1987<br>1988 | 29,928           | 88,348           | 31,010                    | 50,305           | 481            | 1,542<br>(g)   | 4,884          | 143,665            | 4,872,265              | 697,557            |
| 1989         | 24,980           | 74,722           | 19,844                    | 38,006           | 36             | 133            | 7,750          | 172,779            | 4,995,551              | 1,009,103          |
| 1990         | 31,576           | 104,210          | 31,928                    | 57,682           | 68             | 136            | 6,835          | 181,047            | 4,244,130              | 946,683            |
| 1991<br>1992 | 32,038<br>25,899 | 90,710<br>83,634 | 45,219<br>27,946          | 81,803<br>50,439 | 74<br>48       | 180<br>86      | 6,854<br>9,316 | 195,603<br>282,124 | 5,013,047<br>1,764,475 | 708,217<br>276,779 |
|              |                  |                  |                           |                  | 10             |                |                |                    |                        |                    |

#### TABLE 21.12 - EXPORTS OF CERTAIN COMMODITIES (a)

(a) From 1980 figures relate to foreign exports only.
 (b) From 1920, year ended 30 June.
 (c) For years 1950 to 1952, foreign exports only. Figures relate to rock lobster tails only until 1982. From 1982 figures include whole rock lobsters and tails.
 (d) From 1920, year ended 30 June; from 1978, excludes interstate exports.
 (e) Separate details not available. Total exports of fresh meats were 84 tonnes valued at \$9,164.
 (f) Estimated.
 (g) Details not available; see Chapter 11.

|                 |                    |                  |                      |                    | Fresh<br>fruit    | Hides<br>and          |   |                  |                    |                      |
|-----------------|--------------------|------------------|----------------------|--------------------|-------------------|-----------------------|---|------------------|--------------------|----------------------|
| 24 (1)          | Flou               |                  |                      | itoes              | $\frac{(d)}{(d)}$ | skins                 | Timbe                                     |                  |                    | <u>pol (f)</u>       |
| Year (b)        | Quantity           | Value            | Quantity             | Value              | Value             | Value                 | Quantity                                  | Value            | Quantity           | Value                |
|                 |                    |                  |                      |                    |                   |                       | <i>'</i> 000'                             |                  |                    |                      |
|                 | tonnes             | \$′000           | tonnes               | \$'000             | \$'000            | \$'000                | cu m                                      | \$'000           | tonnes             | \$'000               |
| 1860<br>1870    | 11                 | _                | 71<br>26             | 1                  | _                 | 1                     | 2   | 2<br>10          | 141<br>298         | 31<br>99             |
| 1870            | n.a.               | 2                | 20                   | _                  | _                 | _                     | 6   | 35               | 298<br>811         | 99<br>179            |
| 1890            | _                  | _                |                      | _                  | _                 | 8                     | 19  | 133              | 1,970              | 543                  |
| 1900<br>1910    | 47<br>2,559        | 1<br>49          | 113<br>18            | 1                  | 1<br>11           | 49<br>150             | 33<br>162                                 | 164<br>916       | 3,161<br>4,125     | 523<br>541           |
| 1920            | 117,254            | 5,045            | 1,637                | 54                 | 300               | 482                   | 342                                       | 1,945            | 11,883             | 1,934                |
| 1930<br>1940    | 62,659<br>83,159   | 1,540<br>1,301   | 5,037<br>11,953      | 151<br>214         | 312<br>740        | 1,246<br>745          | 143<br>143                                | 931<br>1.251     | 27,034             | 7,875<br>5,558       |
| 1940            | 105,065            | 8,335            | 10,090               | 384                | 1,780             | 2,329                 | 81  | 1,949            | 28,487<br>45,766   | 50,923               |
| 1951            | 144,914            | 11,774           | 11,181               | 506                | 2,295             | 5,294                 | 66  | 1,783            | 41,633             | 112,559              |
| 1952<br>1953    | 146,584<br>159,883 | 13,669<br>15,090 | 13,514<br>12,860     | 733<br>750         | 2,853<br>4,556    | 3,194<br>3,942        | 68<br>112                                 | 2,075<br>4,147   | 46,633<br>51,489   | 67,680<br>79,122     |
| 1954            | 134,126            | 11,704           | 16,026               | 1,300              | 3,300             | 3,295                 | 109                                       | 4,480            | 51,083             | 82,260               |
| 1955<br>1956    | 109,172<br>117,409 | 7,219<br>7,766   | 9,020<br>2,275       | 512<br>171         | 3,845<br>3,393    | 2,921<br>3,274        | 99<br>129                                 | 3,847<br>5,598   | 49,811<br>58,982   | 70,563<br>70,313     |
| 1957            | 115,658            | 7.474            | 7,728                | 736                | 4,598             | <i>3,274</i><br>4,650 | 129                                       | 6,215            | 57,755             | 87,510               |
| 1958            | 101,448            | 6,907            | 13,998               | 832                | 3,725             | 3,898                 | 158                                       | 7,496            | 52,167             | 72,686               |
| 1959<br>1960    | 94,854<br>79,697   | 6,337<br>5,100   | 8,577<br>9,612       | 368<br>436         | 3,609<br>2,437    | 3,489<br>4,767        | 183<br>174                                | 8,415<br>7,760   | 60,280<br>62,838   | 58,537<br>77,957     |
| 1961            | 122,839            | 7,840            | 7,821                | 437                | 4,636             | 3,828                 | 157                                       | 7,175            | 71,681             | 74,842               |
| 1962<br>1963    | 88,889<br>67,652   | 5,891<br>4,645   | 10,328<br>18,032     | 632<br>810         | 2,818<br>4,982    | 4,580<br>4,339        | 161<br>155                                | 7,528<br>7,241   | 73,584<br>71,058   | 83,865<br>82,107     |
| 1963            | 62,677             | 4,396            | 9,925                | 353                | 4,016             | 4,966                 | 133                                       | 6,813            | 82,628             | 114,239              |
| 1965            | 83,826             | 5,926            | 12,935               | 841                | 5,165             | 4,177                 | 133                                       | 6,279            | 79,106             | 98,294               |
| 1966<br>1967    | 49,130<br>34,804   | 3,378<br>2,507   | 21,362<br>17,478     | 1,393<br>692       | 4,838<br>5,704    | 5,447<br>5,377        | 69<br>139                                 | 3,687<br>7,475   | 97,698<br>106,886  | 115,128<br>126,995   |
| 1968            | 41,918             | 2,944            | 13,142               | 622                | 4,068             | 4,699                 | 85  | 4,947            | 124,708            | 126,417              |
| 1969<br>1970    | 35,100<br>31,173   | 2,433<br>2,257   | 21,944<br>19,888     | 1,149<br>831       | 6,552<br>6,054    | 6,013<br>7,968        | 88<br>96                                  | 5,068<br>5,666   | 144,388<br>132,778 | 157,950<br>134,796   |
| 1971            | 26,670             | 1,958            | 9,390                | 510                | 7,208             | 5,395                 | 79  | 4,808            | 128,388            | 98,289               |
| 1972<br>1973    | 18,882<br>9,798    | 1,345            | 8,600                | 371                | 5,245             | 5,356                 | 101                                       | 6,440            | 159,284            | 120,460              |
| 1973            | 11.232             | 859<br>1,380     | (g)4,911<br>(g)9,576 | (g)334<br>(g)1,113 | 6,135<br>5,835    | 13,945<br>13,536      | $\begin{array}{c} 113 \\ 100 \end{array}$ | 7,087<br>7,407   | 146,456<br>121,113 | 220,719<br>263,330   |
| 1975            | 19,281             | 3,439            | 8,527                | 1,217              | 7,547             | 11,195                | 109                                       | 9,252            | 114,069            | 167,631              |
| 1976<br>1977    | 11,658<br>11,355   | 2,022<br>2,051   | 12,196<br>7,190      | 1,636<br>1,127     | 6,047<br>5,285    | 13,728<br>24,708      | 94<br>78                                  | 9,823<br>10,152  | 153,248<br>169,674 | 231,301<br>331,164   |
| 1978            | 8,291              | 1,481            | 5,853                | 390                | 5,976             | 21,147                | 59  | 8,885            | 123,071            | 251,321              |
| 1979<br>1980(h) | 7,872<br>4,342     | 1,660<br>1,055   | 2,735<br>5,292       | 373<br>616         | 8,703<br>10,314   | 29,280<br>34,716      | 66<br>72                                  | 10,508<br>12,226 | 150,185<br>141,262 | 326,466<br>378,557   |
| 1981            | 4,952              | 1,000            | 3,824                | 585                | 9,506             | 17,467                | 32  | 7,050            | 135,529            | 398,051              |
| 1982            | 1,578              | 594              | 5,466                | 947                | 10,783            | 16,736                | 25  | 5,830            | 127,308            | 394,367              |
| 1983<br>1984    | 1,086<br>3,127     | 343<br>833       | 7,274<br>2,806       | 1,278<br>756       | 12,655<br>10,013  | 18,783<br>23,998      | 18<br>20                                  | 4,813<br>5,251   | 123,953<br>121,511 | 392,144<br>406,207   |
| 1985            | 3,140              | 876              | 5,084                | 946                | 10,220            | 629, 27               | 22  | 7,173            | 140,675            | 523,304              |
| 1986<br>1987    | 1,750<br>1,879     | 550<br>528       | 2,338<br>2,311       | 511<br>570         | 12,573<br>13,879  | 13,979<br>40,292      | 22<br>10                                  | 7,330<br>4,199   | 153,987<br>161,085 | 614,202<br>731,352   |
| 1988            |                    | · · · · · ·      |                      |                    |                   | - (i) —               |   | ,                |                    | ·····                |
| 1989<br>1990    | 1,957<br>650       | 642<br>276       | 740<br>4,271         | 153<br>1,000       | 8,338<br>10,575   | 32,009<br>39,078      | 13<br>20                                  | 5,497<br>7,556   | 153,548<br>124,308 | 1,167,056<br>779,639 |
| 1991            | 1,388              | 389              | 12,112               | 3,651              | 1,252             | 24,779                | 13  | 6,670            | 102,570            | 462,849              |
| 1992            | 994                | 367              | 12,364               | 3,725              | 13,352            | 21 <i>,</i> 678       | 41  | 10,307           | 160,120            | 660,221              |

#### TABLE 21.12 - EXPORTS OF CERTAIN COMMODITIES (a) - continued

(a) From 1981 figures relate to foreign exports only. (b) From 1920, year ended 30 June. (c) From 1973, figures include meal and flour of wheat or meslin; from 1978, figures include meal and flour of all cereal grains. (d) Includes tomatoes for 1933 and earlier years. (e) Excludes plywood and veneers and small quantities of timber for which details are not recorded. (f) Includes greasy and degreased wool. (g) Some interstate details for 1973 included in 1974. (h) Figures for flour, potatoes, fresh fruit, and hides and skins represent foreign exports only. (i) Details not available; see Chapter 11.

#### TABLE 21.12 – EXPORTS OF CERTAIN COMMODITIES (a) – continued

|              |                  | ore and<br>centrates   | Lead<br>and<br>zinc<br>ores<br>(c) (d) | Tin ore<br>and<br>concen-<br>trates | Ilme<br>concen<br>(inclu<br>leucoxen | trate<br>ding    | Iron<br>and<br>steel (f) | Gold<br>bull     | mint<br>lion (g)       |
|--------------|------------------|------------------------|--|-------------------------------------|--------------------------------------|------------------|--------------------------|------------------|------------------------|
| Year (       | b) Quantity      | Value                  | Value                                  | Value                               | Quantity                             | Value            | Value                    | Quantity         | Value (h)              |
|              |                  |                        |  |                                     |                                      |                  |                          |                  |                        |
|              | <i>'</i> 000     |                        |  |                                     | <b>'</b> 000                         |                  |                          |                  |                        |
|              | tonnes           | \$'000                 | \$'000                                 | \$'000                              | tonnes                               | \$'000           | \$'000                   | kg               | \$′000                 |
| 1870         |                  | _                      | 29                                     | _                                   | _                                    | _                | _                        |                  | _                      |
| 1880         | _                | _                      | 31                                     | _                                   | _                                    | —                |                          |                  | _                      |
| 1890         | —                | —                      | 4                                      | 11                                  |                                      | _                |                          | 715              | 173                    |
| 1900         | _                | _                      |  | 76                                  |                                      | _                | 7                        | 31,103           | 7,589                  |
| 1910         |                  | —                      | 4                                      | 93                                  |                                      |                  | 5                        | 10,389           | 2,835                  |
| 1920         |                  | —                      | 102                                    | 129                                 |                                      |                  | 16                       | 1,275            | 452                    |
| 1930<br>1940 |                  | -                      | 19<br>2                                | 29<br>14                            |                                      |                  | 3<br>31                  | 26 220           | 1<br>24,056            |
| 1940         |                  |                        | 272                                    | 49                                  | _                                    | _                | 95                       | 36,329<br>2      | 24,036                 |
|              | _                | _                      |  |                                     | _                                    | _                |                          | Z                | 2                      |
| 1951         | 53               | 102                    | 263                                    | 62<br>107                           |                                      | _                | 83                       | 12.286           | 12 1 12                |
| 1952<br>1953 | 553              | 1.079                  | 1,369<br>1,681                         | 107                                 |                                      | _                | 58<br>357                | 12,286<br>23,608 | 13,143<br>24,798       |
| 1955         | 592              | 1,157                  | 270                                    | 97                                  | _                                    | _                | 279                      | 13,001           | 13,280                 |
| 1955         | 589              | 1,149                  | 108                                    | 146                                 | _                                    |                  | 602                      | 19,222           | 19,338                 |
| 1956         | 480              | 936                    | 888                                    | 322                                 |                                      | _                | 530                      | 12,752           | 12,842                 |
| 1957         | 334              | 649                    | 960                                    | 293                                 |                                      | _                | 1,174                    | 23,950           | 24,119                 |
| 1958         | 446              | 870                    | 410                                    | 166                                 | 89                                   | 1,011            | 2,470                    | 6,470            | 6,511                  |
| 1959         | 598              | 1,169                  | 238                                    | 304                                 | 66                                   | 648              | 4,218                    | 4,106            | 4,118                  |
| 1960         | 809              | 1,601                  | 229                                    | 415                                 | 90                                   | 713              | 11,198                   | 18,662           | 18 <i>,</i> 738        |
| 1961         | 1,035            | 2,101                  | 83                                     | 325                                 | 132                                  | 1,198            | 12,781                   | 78,754           | 79,271                 |
| 1962         | 1,069            | 2,209                  | 45                                     | 563                                 | 159                                  | 1,441            | 13,826                   | 14,090           | 12,195                 |
| 1963         | 1,495            | 2,898                  | 33                                     | 532                                 | 183                                  | 1,717            | 15,107                   | 12,970           | 13,048                 |
| 1964         | 1,381            | 2,743                  | 18                                     | 1,080                               | 263                                  | 2,571            | 15,029                   | 11,975           | 12,045                 |
| 1965<br>1966 | 1,562<br>2.657   | 3,040<br>6,967         | 662<br>124                             | 1,229<br>1,521                      | 330<br>430                           | 3,194<br>4.181   | 17,933<br>14,458         | 15,956<br>25,909 | 16,127<br>26,147       |
| 1966         | 8,530            | 50,890                 | 124                                    | 2,214                               | 430<br>443                           | 4,181            | 14,458                   | 14,930           | 15,107                 |
| 1968         | 14,563           | 104,506                | 58                                     | 2,330                               | 462                                  | 4,645            | 11,442                   | 11,602           | 11,816                 |
| 1969         | 19,898           | 151,797                | 161                                    | 1,843                               | 557                                  | 5,751            | 27,002                   | 11,228           | 12,701                 |
| 1970         | 31,542           | 233,580                | 41                                     | 1,386                               | 573                                  | 6,068            | 34,306                   | 12,037           | 13,874                 |
| 1971         | 46,273           | 341,702                |  | 1,511                               | 563                                  | 6,631            | 34,571                   | 14,665           | 15,760                 |
| 1972         | 48,658           | 347,500                | _                                      | 2,043                               | 580                                  | 7,416            | 36,415                   | 17,646           | 21,950                 |
| 1973         | 66,036           | 420,255                | 6                                      | 2,277                               | 595                                  | 7,696            | 36,529                   | 16,314           | 30,193                 |
| 1974         | 79,286           | 488,239                | 15                                     | 2,732                               | 728                                  | 9,774            | 60,811                   | 10,093           | 27,393                 |
| 1975         | 88,070           | 699,843                |  | 3,019                               | 672                                  | 9,893            | 71,493                   | 9,263            | 36,666                 |
| 1976         | 83,090           | 772,199                | <u> </u>                               | 2,538                               | 647                                  | 9,995            | 60,765                   | 13,659           | 50,527                 |
| 1977         | 84,939           | 900,987                |  | 3,939                               | 1,184                                | 20,155           | 74,508                   | 9,980            | 36,863                 |
| 1978<br>1979 | 80,128           | 935,018<br>978,315     |  | 4,947<br>5.074                      | 986                                  | 17,653           | 50,285                   | 10,344           | 50,906                 |
| 1979         | 84,016<br>76,725 | 1,025,660              | 220                                    | 5,074<br>5,841                      | 883<br>1,119                         | 17,475<br>25,433 | 72,591<br>83,447         | n.a.<br>n.a.     | (i)99,708<br>(i)56,317 |
|              | ,                |                        | 220                                    |                                     | ,                                    |                  |                          |                  |                        |
| 1981         | 72,756           | 1,069,087              | 11 205                                 | 2,469                               | 929                                  | 23,726           | 42,423                   | 1,279            | 22,024                 |
| 1982<br>1983 | 72,532<br>64,551 | 1,195,486<br>1,405,840 | 11,285<br>14,925                       | 1,057<br>1,234                      | 890<br>780                           | 25,003<br>21,986 | 6,645<br>2,959           | 5,054<br>9,536   | 72,060<br>141,340      |
| 1983         | 80,942           | 1,551,299              | 14,923                                 | 1,234                               | 1,068                                | 35,176           | 2,959                    | 21,312           | 308,580                |
| 1985         | 87,670           | 1,796,578              | 17,407                                 |                                     | 1,008                                | 36,473           | 741                      | 23,036           | 308,424                |
| 1986         | 80,309           | 1,861,779              | 6,040                                  | _                                   | 999                                  | 45,149           | 747                      | 28,483           | 458,728                |
| 1987         | 74,321           | 1,701,851              |  |                                     | 864                                  | 55,398           | 916                      | 23,247           | 479,790                |
| 1988         |                  |                        |  |                                     | — (j) —                              | ,                |                          |                  | , -                    |
| 1989         | (k)94,949        | (k)1,718,621           | 31,891                                 | _                                   | 825                                  | 73,075           | 944                      | 26,539           | 414,025                |
| 1990         | (k)101,017       | (k)2,142,511           | 52,171                                 |                                     | 752                                  | 73,146           | 1,087                    | 19,844           | 331,658                |
| 1991         | n.a.             | n.a.                   | 124,836                                | 22                                  | 907                                  | 90,823           | 5,096                    | 95,874           | 1,519,559              |
| 1992         | 102,906          | 2,701,384              | 218,117                                | _                                   | 580                                  | 54,897           | 2,673                    | 166,241          | 2,465,878              |
| _            |                  |                        |  |                                     |                                      |                  |                          |                  |                        |

(a) From 1980, figures relate to foreign exports only.
(b) From 1920, year ended 30 June.
(c) Includes silver-lead and silver-lead-zinc ores and concentrates.
(d) Between 1971 and 1988, the value of foreign exports of lead was nil. From 1973, figures exclude interstate exports of lead ores and concentrates, and from 1978 interstate exports of zinc ores and concentrates.
(e) From 1972, figures exclude foreign exports of beneficiated ilmenite; from 1978, figures also exclude interstate exports of all ilmenite and leucoxene. From April 1987 figures exclude ilmenite ores and concentrates in bags, drums and similar containers.
(f) Principally pig-iron, cast iron and basic shapes and sections of iron and steel.
(g) Gold sold abroad before consignment is not recorded as an export until actually shipped.
(h) Includes additional premiums on sales of industrial gold.
(i) Includes all processed gold, but excludes gold ores and concentrates.
(j) Details not available See Chapter 19.
(k) Source: Western Australian Department of Mines.

|              |                        | Imports (              | b)                      |                          | Exports (b)            | (c)                     | Exe                | cess of –              | Ships'             |
|--------------|------------------------|------------------------|-------------------------|--------------------------|------------------------|-------------------------|--------------------|------------------------|--------------------|
| Year(a       | ) Foreign              | Interstate             | Total                   | Foreign                  | Interstate             | Total                   | Imports            | Exports                | stores             |
| 1850<br>1860 | n.a.<br>318            | n.a.<br>20             | 125<br>338              | n.a.<br>160              | n.a.<br>16             | 44<br>175               | 80<br>163          |                        | n.a.<br>3          |
| 1870<br>1880 | 260<br>349             | 167<br>358             | 427<br>707              | 348<br>736               | 46<br>252              | 394<br>988              | 33                 | 280                    | 8<br>11            |
| 1890<br>1900 | 1,025<br>6,574         | 724<br>5,350           | 1,749<br>11,924         | 961<br>11,246            | 369<br>2,250           | 1,330<br>13,496         | 419                | 1,572                  | 14<br>208          |
| 1910         | 8,750                  | 7,067                  | 15,817                  | 11,679                   | 4,627                  | 16,306                  | <br>               | 489                    | 294                |
| 1920<br>1930 | 9,918<br>17,758        | 14,819<br>19,805       | 24,737<br>37,563        | 28,918<br>32,009         | 2,392<br>2,213         | 31,311<br>34,223        | <br>3,341          | 6,574<br>              | 827<br>1,316       |
| 1940<br>1941 | 12,568<br>9,710        | 27,450<br>27,519       | 40,017<br>37,229        | 19,256<br>16,900         | 28,518<br>30,808       | 47,774<br>47,708        |                    | 7,756<br>10,479        | 1,380<br>1,971     |
| 1942         | 10,391                 | 26,110                 | 36,501                  | 23,157                   | 25,241                 | 48,398                  | <br>1,445          | 11,897                 | 2,305              |
| 1943<br>1944 | 7,383<br>7,770         | 24,803<br>26,628       | 32,186<br>34,399        | 10,625<br>22,845         | 20,117<br>13,472       | 30,741<br>36,317        | ,<br>              | 1,919                  | 1,983<br>2,747     |
| 1945<br>1946 | 9,215<br>11,018        | 26,863<br>32,238       | 36,079<br>43,256        | 24,765<br>38,917         | 11,533<br>11,662       | 36,298<br>50,579        |                    | 219<br>7,322           | 2,508<br>2,511     |
| 1947<br>1948 | 18,929<br>34,311       | 42,253<br>51,329       | 61,182<br>85,640        | 46,015<br>97,389         | 11,459<br>11,599       | 57,474<br>108,989       | 3,708              |                        | 1,966<br>2,474     |
| 1949<br>1950 | 44,075<br>68,844       | 61,182<br>70,044       | 105,258<br>138,887      | 96,982<br>106,590        | 9,495<br>12,421        | 106,477<br>119,011      | <br>19,876         | 1,220                  | 4,710<br>4,720     |
| 1951         | 80,517                 | 95,828                 | 176,345                 | 197,686                  | 18,780                 | 216,466                 |                    | 40,122                 | 7,249              |
| 1952<br>1953 | 120,474<br>59,748      | 124,209<br>137,213     | 244,683<br>196,961      | 151,562<br>166,286       | 35,404<br>49,659       | 186,966<br>215,945      |                    | 18,984                 | 8,419<br>10,321    |
| 1954<br>1955 | 85,051<br>101,295      | 165,374<br>182,110     | 250,425<br>283,405      | 136,849<br>137,013       | 39,190<br>47,310       | 176,039<br>184,323      | 74,386<br>99,082   |                        | 7,266<br>7,865     |
| 1956<br>1957 | 92,963<br>80,423       | 177,952<br>188,680     | 270,915<br>269,103      | 152,286<br>216,599       | 68,466<br>81,545       | 220,752<br>298,144      | 50,164             |                        | 10,592<br>12,902   |
| 1958<br>1959 | 91,775<br>89,972       | 195,103<br>202,430     | 286,879<br>292,402      | 179,516<br>174,585       | 79,836<br>68,919       | 259,352<br>243,504      | 27,527<br>48,898   |                        | 11,602<br>9,482    |
| 1960         | 92,363                 | 246,696                | 339,059                 | 231,766                  | 77,278                 | 309,043                 | 30,016             |                        | 8,954              |
| 1961<br>1962 | 110,531<br>100,178     | 245,474<br>245,208     | 356,005<br>345,386      | 309,332<br>287,619       | 89,922<br>84,626       | 399,254<br>372,245      |                    | 43,249<br>26,859       | 10,285<br>9,379    |
| 1963<br>1964 | 112,640<br>121,677     | 313,712<br>323,176     | 426,351<br>444,854      | 246,823<br>286,132       | 91,636<br>101,811      | 338,459<br>387,943      | 87,892<br>56,911   |                        | 7,904<br>9,733     |
| 1965<br>1966 | 153,540<br>175,690     | 343,899<br>403,054     | 497,439<br>578,744      | 243,078<br>314,404       | 119,954<br>119,619     | 363,033<br>434,023      | 134,407<br>144,721 |                        | 9,009<br>10,058    |
| 1967<br>1968 | 159,390<br>206,980     | 474,852<br>527,052     | 634,242<br>734,031      | 421,325<br>475,260       | 116,030<br>124,505     | 537,355<br>599,765      | 96,887<br>134,266  |                        | 10,936<br>14,824   |
| 1969         | 203,533                | 562,312                | 765,846                 | 546,366                  | 149,892                | 696,258                 | 69,588             |                        | 14,327             |
| 1970<br>1971 | 242,299<br>278,344     | 640,189<br>726,778     | 882,487<br>1,005,122    | 675,027<br>862,421       | 149,861<br>163,812     | 824,888<br>1,026,233    | 57,600<br>         | <br>21,111             | 15,092<br>20,561   |
| 1972<br>1973 | 283,263<br>227,305     | 787,788<br>786,177     | 1,071,051<br>1,013,483  | 946,504<br>1,154,359     | 156,303<br>173,839     | 1,102,807 1,328,198     |                    | 31,756<br>314,715      | 22,477<br>17,542   |
| 1974<br>1975 | 368,910<br>577,416     | 939,361<br>1,134,510   | 1,308,272<br>1,711,926  | 1,414,968<br>1,880,082   | 222,208<br>253,424     | 1,637,176<br>2,133,506  |                    | 328,904<br>421,580     | 29,224<br>50,157   |
| 1976         | 637,439                | 1,418,726              | 2,056,165               | 2,117,898                | 290,733                | 2,408,631               |                    | 352,466                | 46,638             |
| 1977<br>1978 | 829,411<br>937,350     | 1,641,545<br>1,828,510 | 2,470,955<br>2,765,860  | 2,596,107<br>2,588,954   | 305,836<br>355,151     | 2,901,943<br>2,944,105  |                    | 430,987<br>178,245     | 64,141<br>71,009   |
|              | 1,161,164<br>1,449,694 | 2,044,447<br>2,337,808 | 3,205,611<br>3,787,502  | 2,820,134<br>3,854,047   | 446,208<br>635,388     | 3,266,343<br>4,489,434  | <br>               | 60,732<br>701,933      | 72,611<br>126,176  |
|              | 1,663,378<br>2,535,112 | 2,841,110<br>3,141,096 | 4,504,488<br>5,676,208  | 3,595,048<br>3,907,623   | 812,996<br>888,540     | 4,408,044<br>4,796,163  | 96,444<br>880,045  |                        | 144,285<br>134,198 |
| 1983         | 2,523,046<br>1,935,552 | 3,160,789<br>3,638,883 | 5,683,835<br>5,574,436  | 4,797,766<br>5,062,112   | 1,155,698<br>1,410,145 | 5,953,464<br>6,466,257  |                    | 269,129<br>891,822     | 129,484<br>110,706 |
| 1985         | 2,155,270              | 4,291,229              | 6,446,499               | 6,028,430                | 1,507,370              | 7 <i>,</i> 535,850      |                    | 1,089,351              | 123,237            |
| 1987         | 2,202,948<br>2,768,663 | 4,783,474<br>5,071,476 | 6,986,422<br>7,840,139  | 6,529,348<br>6,911,427   | 1,623,017<br>1,805,667 | 8,152,365<br>8,717,094  |                    | 1,165,943<br>876,955   | 87,674<br>84,476   |
| 1988<br>1989 | 3,216,985<br>3,581,772 | 5,404,518<br>6,430,737 | 8,621,503<br>10,012,509 | 7,491,773<br>8,856,643   | 1,808,478<br>1,777,058 | 9,300,251<br>10,633,701 |                    | 678,748<br>621,291     | 87,220<br>72,455   |
| 1990         | 3,984,818              | 6,515,966              | 10,500,784              | 10,227,858               | 2,282,389              | 12,510,247              |                    | 2,282,389<br>4,899,574 | 90,093             |
|              | 3,635,752<br>3,548,198 | 5,861,550<br>n.a       | 9,497,302<br>n.a        | 12,426,818<br>14,039,464 | 1,970,058<br>n.a       | 14,396,876<br>n.a       |                    | 4,899,574<br>n.a       | 91,871<br>55,953   |

### TABLE 21.13 – EXTERNAL TRADE (\$'000)

(a) From 1920, year ended 30 June. (b) From 1976, excludes interstate value of horses. Details are not available for publication. (c) Excludes ships' stores up to and including 1982. Ships' and aircraft stores for foreign owned vessels and aircraft are included in foreign and total exports from 1983 onwards. From 1982, excludes value of re-exports.

|              |                          | Industrial                 | disputes (a)             | - 1   |  | tes of pay           | <b>D</b>                                       |
|--------------|--------------------------|----------------------------|--------------------------|---|--|----------------------|--|
| Year         | Number<br>of<br>disputes | Workers<br>involved<br>(b) | <u>vvorkin</u><br>Number | g days lost_<br>Average<br>per worker<br>involved | index nu<br>Adult mali<br>salary ear<br>Weekly | e wage and           | Persons<br>on Un-<br>employment<br>benefit (f) |
|              |                          | <i>'000</i>                | <i>'</i> 000             | No.   |  |                      |  |
| 1930         | 2                        | 0.5                        | 27.1                     | 57.85   | n.a.   | n.a.                 |  |
| 1940         | 4                        | 3.0                        | 7.4                      | 2.44  | 36.8   | 33.1                 |  |
| 1950         | 15                       | 2.0                        | 5.7                      | 2.93  | 71.0   | 71.7                 | 267  |
| 1951         | 10                       | 4.2                        | 5.1                      | 1.22  | 85.5   | 85.7                 | 60   |
| 1952         | 21                       | 19.2                       | 127.8                    | 6.67  | 97.5   | 97.7                 | 57   |
| 1953         | 11                       | 3.7                        | 5.0                      | 1.36  | 100.4  | 100.7                | 844  |
| 1954         | 15                       | 5.5                        | 21.7                     | 3.94  | 101.7  | 101.9                | 427  |
| 1955<br>1956 | 16<br>14                 | 9.8<br>11.1                | 9.6<br>31.9              | 0.97<br>2.87                                      | 106.3<br>110.8                                 | 106.6<br>111.0       | 157<br>473                                     |
| 1956         | 14 14                    | 5.4                        | 3.1                      | 0.57  | 113.9  | 111.0                | 1,940  |
| 1958         | 20                       | 11.0                       | 3.0                      | 0.27  | 114.7  | 114.1                | 2,330  |
| 1959         | 20                       | 11.0                       | 11.2                     | 1.00  | 120.7  | 120.8                | 2,852  |
| 1960         | 43                       | 25.7                       | 27.3                     | 1.06  | 126.8  | 127.1                | 2,512  |
| 1961         | 22                       | 9.7                        | 23.2                     | 2.40  | 128.8  | 129.0                | 2,154  |
| 1962         | 28                       | 8.4                        | 6.3                      | 0.75  | 129.5  | 129.7                | 2,932  |
| 1963         | 28                       | 42.6                       | 32.0                     | 0.75  | 132.8  | 133.0                | 2,674  |
| 1964         | 26                       | 6.2                        | 7.1                      | 1.16  | 137.5  | 137.6                | 2,677  |
| 1965         | 33                       | 12.6                       | 10.0                     | 0.79  | 143.5  | 143.5                | 1,679  |
| 1966         | 25<br>26                 | 2.9<br>5.1                 | 6.2                      | 2.17  | 153.6  | 153.8                | 785<br>718                                     |
| 1967<br>1968 | 20<br>70                 | 18.7                       | 6.0<br>21.8              | $1.18 \\ 1.16$                                    | 159.6<br>169.0                                 | 159.9<br>168.7       | 608  |
| 1969         | 104                      | 59.1                       | 101.4                    | 1.72  | 179.5  | 179.3                | 524  |
| 1970         | 125                      | 46.5                       | 141.1                    | 3.03  | 198.2  | 198.0                | 474  |
| 1971         | 132                      | 35.8                       | 69.4                     | 1.94  | 219.5  | 219.4                | 872  |
| 1972         | 105                      | 28.3                       | 94.6                     | 3.34  | 234.2  | 232.5                | 2,808  |
| 1973         | 160                      | 37.6                       | 117.3                    | 3.12  | 267.9  | 266.3                | 4,960  |
| 1974         | 257                      | 188.1                      | 256.9                    | 1.37  | 357.7  | 356.5                | 2,863  |
| 1975         | 236                      | 53.8                       | 100.7                    | 1.87  | $\frac{401.2}{104.8}$                          | 398.5<br>104.8       | 9,317<br>13,598                                |
| 1976<br>1977 | 250<br>229               | 100.7<br>54.9              | 252.1<br>220.5           | 2.50<br>4.02                                      | 104.8  | 104.8                | 15,598   |
| 1978         | 306                      | 76.1                       | 197.9                    | 2.60  | 125.3  | 125.3                | 20,470   |
| 1979         | 252                      | 169.5                      | 348.1                    | 2.06  | 131.7  | 131.7                | (g)29,000                                      |
| 1980         | 368                      | 69.4                       | 191.0                    | 2.75  | 145.7  | 145.8                | (g)29,800                                      |
| 1981         | 364                      | 72.9                       | 244.0                    | 3.35  | 166.1  | 166.2                | 28,638   |
| 1982         | 436                      | 63.6                       | 158.9                    | 2.50  | 187.6  | 190.3                | 31,636   |
| 1983         | 300                      | 42.3                       | 270.6                    | 6.40  | 197.2  | 200.9                | 50,992   |
| 1984         | 406                      | 69.2                       | 119.2                    | 1.72  | 205.9  | $\frac{210.7}{1000}$ | (g)57,514                                      |
| 1985         | 361                      | 48.7                       | 92.9                     | 1.91  | 103.8  | 103.8                | (g)54,028                                      |
| 1986<br>1987 | 267<br>245               | 50.6<br>43.1               | 143.1<br>115.3           | 2.83<br>2,68                                      | 106.3<br>110.0                                 | 106.5<br>110.3       | 55,089<br>52,755                               |
| 1987<br>1988 | 245<br>221               | 43.1<br>60.9               | 115.3                    | 2.68  | 110.0  | 110.3<br>119.1       | 52,755<br>46,091                               |
| 1989         | 221                      | 54.7                       | 100.0                    | 1.87  | 118.5  | 119.1                | 37,285   |
| 1990         | 190                      | 73.2                       | 108.4                    | 1.48  | 129.1  | 132.3                | 36,240   |
| 1991         | 156                      | 63.1                       | 119.1                    | 1.89  | 134.0  | 134.7                | 55,756   |

#### TABLE 21.14 — INDUSTRIAL DISPUTES; WAGE RATES; UNEMPLOYMENT BENEFIT

(a) Excludes disputes involving cessation of work of less than 10 man-days. Details of the number of disputes and workers involved in disputes which commenced in any year and were still in progress during the following year are included in the figures for both years. (b) Includes workers indirectly involved, i.e. those put out of work at an establishment where a stoppage occurred but not themselves parties to the dispute. (c) End of December. Prior to 1976 - Base: weighted average wage rate for Australia, June 1985 = 100. (d) Excludes workers in rural industry. (e) Prior to June 1985, index related to wage earners only. From June 1985, relates to wage and salary earners. (f) year ended 30 June, average number of persons on benefit at end of each week. As from 1 January 1988 includes persons receiving job search allowance. (g) Estimated.

|               |                  | Group index numbers—Perth |                 |                            |                |                  |                  |                  |   |                                   |                       |  |
|---------------|------------------|---------------------------|-----------------|----------------------------|----------------|------------------|------------------|------------------|---|-----------------------------------|-----------------------|--|
| Year          |                  |                           |                 | nusehold<br>uipment<br>and |                |                  |                  |                  | 4.73                                      | of eight<br>capital<br>cities (b) |                       |  |
| ended<br>June | Food C           | Clothing                  | Housing         | oper-<br>ation             | port-<br>ation | and<br>alcohol   | personal<br>care | edu-<br>cation   | All<br>groups                             | All<br>groups                     | Per cent<br>change(c) |  |
| 1950          | 7.0              | 9.9                       | 5.6             | n.a.                       | n.a.           | n.a.             | n.a.             | n.a.             | 7.6                                       | 7.5                               |                       |  |
| 1960<br>1970  | 13.5<br>17.7     | 15.5<br>18.3              | 11.2<br>17.4    | n.a.<br>19.5               | n.a.<br>17.5   | n.a.<br>14.3     | n.a.<br>12.8     | n.a.<br>n.a.     | $\begin{array}{c} 13.4\\ 17.4\end{array}$ | 13.5<br>17.2                      |                       |  |
| 1971          | 18.4             | $19.0 \\ 20.1$            | 18.3            | 20.3                       | 18.2           | 15.4             | 13.0             | n.a.             | 18.1                                      | 18.0                              | 4.6                   |  |
| 1972          | 19.0             |                           | 19.4            | 21.5                       | 19.1           | 16.7             | 14.5             | n.a.             | 19.1                                      | 19.3                              | 7.2                   |  |
| 1973          | 20.4             | 21.3                      | 20.3            | 22.5                       | 19.5           | 17.8             | 15.4             | n.a.             | 20.2                                      | 20.4                              | 5.7                   |  |
| 1974          | 23.2             | 24.2                      | 21.7            | 24.2                       | 21.0           | 18.9             | 17.6             | n.a.             | 22.3                                      | 23.0                              | 12.7                  |  |
| 1975          | 26.3             | 29.5                      | 25.3            | 28.6                       | 25.0           | 22.7             | 22.7             | n.a.             | 26.3                                      | 26.9                              | 17.0                  |  |
| 1976          | 29.5             | 34.2                      | 30.4            | 34.0                       | 29.3           | 28.0             | 18.9             | n.a.             | 30.0                                      | 30.4                              | 13.0                  |  |
| 1977          | 33.6             | 39.4                      | 35.5            | 36.8                       | 32.6           | 30.7             | 37.2             | n.a.             | 34.8                                      | 34.6                              | 13.8                  |  |
| 1978          | 38.6             | 43.8                      | 39.1            | 40.3                       | 35.6           | 32.2             | 44.1             | n.a.             | 38.6                                      | 37.9                              | 9.5                   |  |
| 1979          | 42.6             | 46.9                      | 41.0            | 43.2                       | 39.5           | 37.6             | 40.7             | n.a.             | 41.6                                      | 41.0                              | 8.2                   |  |
| 1980          | 47.6             | 50.1                      | 42.5            | 46.5                       | 44.1           | 40.7             | 46.5             | n.a.             | 45.6                                      | 45.2                              | 10.2                  |  |
| 1981          | 51.9             | 53.9                      | 46.0            | 52.1                       | 48.7           | 43.1             | 48.7             | n.a.             | 49.6                                      | 49.4                              | 9.3                   |  |
| 1982          | 57.2             | 57.8                      | $50.1 \\ 54.5$  | 57.0                       | 54.5           | 47.0             | 63.0             | n.a.             | 55.1                                      | 54.6                              | 10.5                  |  |
| 1983          | 62.1             | 61.4                      |                 | 62.7                       | 60.2           | 52.9             | 76.9             | 64.5             | 60.7                                      | 60.8                              | 11.4                  |  |
| 1984          | 66.9             | $65.1 \\ 69.4$            | 57.1            | 67.2                       | 65.2           | 60.7             | 75.5             | 68.1             | 64.9                                      | 65.0                              | 6.9                   |  |
| 1985          | 70.6             |                           | 60.5            | 70.1                       | 69.6           | 66.0             | 60.5             | 70.1             | 67.5                                      | 67.8                              | 4.3                   |  |
| 1986          | 75 <i>.</i> 9    | 75.5                      | 65.2            | 75.9                       | 74.9           | 72.7             | 65.4             | 75.5             | 72.9                                      | 73.5                              | 8.4                   |  |
| 1987          | 81.5             | 83.2                      | 71.1            | 82.8                       | 84.0           | 81.0             | 75.1             | 82.7             | 80.2                                      | 80.4                              | 9.4                   |  |
| 1988          | 86.3             | 89.3                      | 75.2            | 88.7                       | 89.9           | 87.4             | 84.3             | 89.3             | 85.9                                      | 86.3                              | 7.3                   |  |
| 1989          | 94.0             | 95.6                      | (d)84.9         | 94.4                       | 93.3           | 91.7             | 91.8             | 94.7             | 92.3                                      | 92.6                              | 7.3                   |  |
| 1990          | 100.0            | 100.0                     | 100.0           | 100.0                      | 100.0          | 100.0            | 100.0            | 100.0            | 100.0                                     | 100.0                             | 8.0                   |  |
| 1991<br>1992  | $104.5 \\ 107.0$ | $104.4 \\ 107.4$          | $102.9 \\ 94.0$ | 105.3<br>107.5             | 106.3<br>109.1 | $107.4 \\ 110.6$ | 108.6<br>117.2   | $104.3 \\ 104.8$ | $105.1 \\ 105.9$                          | 105.3<br>107.3                    | 5.3<br>1.9            |  |

#### TABLE 21.15 - CONSUMER PRICE INDEX (a)

(a) The base of each index is Year 1989-90 = 100 (b) Prior to 1980-81, weighted average of six State capital cities. (c) Per cent change is change on previous year (d) These series have been affected by the adoption of a new approach to the treatment of mortgage interest charges. For more detail refer to the information paper, *The Australian Consumer Price Index: Treatment of Mortgage Interest Charges* (ABS Catalogue No. 6442.0).

### TABLE 21.16 – STATE AND LOCAL AUTHORITIES: RECEIPTS AND OUTLAY (a) (\$m)

|                          |                          | Receip                           | nts and find           | ancing trai                   | isactions                      |       |                              |                         | Outlay                    |                         |                |
|--------------------------|--------------------------|----------------------------------|------------------------|-------------------------------|--------------------------------|-------|------------------------------|-------------------------|---------------------------|-------------------------|----------------|
| Varu                     | Taura                    | Net<br>operating<br>surpluses    | Property               | Grants<br>from the<br>Common- |                                | T-1-1 | Final<br>con-                | Capital                 | Turnefou                  | <u>ک</u> ارد            |                |
| Year<br>ended<br>30 June | Taxes,<br>fees,<br>fines | public<br>trading<br>enterprises | and<br>other<br>income | Govern-<br>ment               | inancing-<br>trans-<br>actions |       | sumption<br>expendi-<br>ture | ture on<br>goods(b)     | Transfer<br>pay-<br>ments | Net<br>advances<br>paid | Tota<br>outlay |
| 1976                     | 322                      | 66                               | 99                     | 772                           | 53                             |       | 728                          | 435                     | 131                       | 18                      | 1,312          |
| 1977<br>1978             | 371<br>423               | 37<br>80                         | 120<br>168             | 844<br>974                    | 155<br>259                     |       | 871<br>1,005                 | 483<br>551              | 157<br>330                | 17<br>19                | 1,528<br>1,905 |
| 1979<br>1980             | 466<br>519               | 90<br>98                         | 172<br>185             | 1,056<br>1,168                | 315<br>352                     |       | 1,113<br>1,267               | 608<br>646              | 363<br>409                | 16                      | 2,100<br>2,321 |
| 1981                     | 590                      | 130                              | 212                    | 1,307                         | 281                            | 2,520 | 1,425                        | 627                     | 466                       | 2                       | 2,520          |
| 1982<br>1983             | 690<br>772               | 155<br>194                       | 249<br>316             | 1,430<br>1,619                | 316<br>857                     |       | 1,609<br>1,864               | 717<br>1,196            | 516<br>677                | -1<br>20                | 2,841<br>3,757 |
| 1984                     | 924                      | 274                              | 355                    | 1,874                         | 835                            | 4,262 | 2,096                        | 1,252                   | 850                       | 63                      | 4,262          |
| 1985<br>1986             | 1,062<br>1,145           | 301<br>401                       | 394<br>510             | 2,067<br>2,214                | 585<br>644                     |       | 2,313<br>2,581               | 1,102<br>1,147          | 972<br>1,110              | 22<br>76                | 4,409<br>4,915 |
| 1987<br>1988             | 1,397<br>1,699           | 518<br>563                       | 529<br>600             | 2,395<br>2,594                | 679<br>432                     | 5,518 | 2,815<br>3,134               | 1,328<br>1,222          | 1,294<br>1,482            | 81<br>50                | 5,518<br>5,888 |
| 1989<br>1990             | 1,999<br>1,984<br>2,133  | 601<br>651                       | 793<br>1,028           | 2,594<br>2,586<br>2,768       | 805<br>866                     | 6,769 | 3,505<br>3,730               | 1,222<br>1,414<br>1,900 | 1,402<br>1,601<br>1,845   | 60<br>-25               | 6,769<br>7,446 |

(a) This series replaces 'Public Revenue and Expenditure: Consolidated Revenue Fund' and 'Net Expenditure from Loan Funds; Public Debt' on later pages. (b) Includes gross fixed capital expenditure, increase in stocks and expenditure on land and intangible assets (net).

TABLE 21.17 – PUBLIC REVENUE AND EXPENDITURE: CONSOLIDATED REVENUE FUND<br/>(\$'000)

|              |                                |                          | Reven                    | 112                |                         |                    |                          | Expenditure            |                         |                  |                    |                           |  |
|--------------|--------------------------------|--------------------------|--------------------------|--------------------|-------------------------|--------------------|--------------------------|------------------------|-------------------------|------------------|--------------------|---------------------------|--|
| -            |                                |                          |                          | lle                | <i>m</i> ·              |                    |                          | Interest Departmental  |                         |                  | tal                |                           |  |
| Year         | Common-<br>wealth<br>(a) funds | Public<br>utili-<br>ties | Depart-<br>mental<br>(b) | Taxa-<br>tion      | Terri-<br>torial<br>(c) | Total<br>revenue   | Public<br>utili-<br>ties | and<br>sinking<br>fund | Educa-<br>tion          | Health           | Other              | Total<br>expen-<br>diture |  |
| 1840         | n.a.                           | n.a.                     | n.a.                     | n.a.               | 5                       | 34                 | n.a.                     | n.a.                   | n.a.                    | n.a.             | n.a.               | 30                        |  |
| 1850<br>1860 | n.a.<br>n.a.                   | n.a.<br>n.a.             | n.a.<br>n.a.             | n.a.<br>n.a.       | 4<br>35                 | 38<br>140          | n.a.<br>n.a.             | n.a.<br>n.a.           | n.a.<br>3               | n.a.<br>n.a.     | n.a.<br>n.a.       | 33<br>123                 |  |
| 1870         | n.a.                           | n.a.                     | n.a.                     | n.a.               | 40                      | 196                | n.a.                     | n.a.                   | 7                       | n.a.             | n.a.               | 226                       |  |
| 1880         | n.a.                           | n.a.                     | n.a.                     | n.a.               | 72                      | 360                | n.a.                     | 40                     | 19                      | n.a.             | n <i>.</i> a.      | 409                       |  |
| 1890<br>1900 | n.a.<br>n.a.                   | n.a.<br>2,612            | n.a.<br>182              | n.a.<br>244        | 217<br>380              | 829<br>5,751       | n.a.<br>1,863            | 144<br>880             | 23<br>138               | n.a.<br>198      | n.a.<br>2,049      | 803<br>5,231              |  |
| 1910         | 1,407                          | 3,916                    | 551                      | 673                | 649                     | 7,315              | 2,440                    | 2,006                  | 367                     | 328              | 1,533              | 6,895                     |  |
| 1920<br>1930 | 1,197<br>1,547                 | 6,364<br>10,596          | 1,188<br>3,134           | 1,688<br>2,906     | 818<br>950              | 11,727<br>19,501   | 5,156<br>8,073           | 4,124<br>6,891         | 829<br>1,385            | 642<br>649       | 1,931<br>2,872     | 13,063<br>20,537          |  |
| 1931         | 1,547                          | 9,228                    | 3,279                    | 2,269              | 678                     | 17,374             | 6,654                    | 7,243                  | 1,346                   | 486              | 3,950              | 20,215                    |  |
| 1932<br>1933 | 1,547<br>1,947                 | 8,818<br>8,873           | 2,766<br>2,701           | 2,014<br>2,257     | 585<br>558              | 16,071<br>16,664   | 5,724<br>5,682           | 7,015<br>7,009         | 1,098<br>1,108          | 328<br>333       | 4,543<br>3,761     | 19,186<br>18,392          |  |
| 1934         | 2,147                          | 8,867                    | 2,240                    | 2,737              | 626                     | 16,963             | 5,870                    | 7,095                  | 1,153                   | 309              | 3,560              | 18,541                    |  |
| 1935         | 2,413                          | 9,837                    | 1,562                    | 3,804              | 812                     | 18,663             | 6,391                    | 7,100                  | 1,225                   | 326              | 3,342              | 18,997                    |  |
| 1936<br>1937 | 2,617<br>2,013                 | 10,366<br>10,633         | 1,677<br>1,727           | 4,372<br>4,807     | 767<br>773              | 20,067<br>20,371   | 6,756<br>7,247           | 7,135<br>7,237         | 1,331<br>1,432          | 341<br>381       | 3,595<br>4,024     | 19,891<br>21,113          |  |
| 1938         | 2,097                          | 11,148                   | 1,980                    | 5,190              | 749                     | 21,638             | 7,249                    | 7,579                  | 1,474                   | 380              | 4,158              | 21,659                    |  |
| 1939<br>1940 | 2,087                          | 11,159<br>11,102         | 1,786<br>1,942           | 5,728<br>5,992     | 634<br>632              | 21,899<br>22,240   | 7,857                    | 7,779<br>8,021         | 1,514<br>1,545          | $401 \\ 416$     | 3,992              | 22,340                    |  |
| 1940<br>1941 | 2,137<br>2,247                 | 11,102                   | 1,942                    | 6,255              | 638                     | 22,240             | 7,662<br>7,534           | 8,114                  | 1,545                   | 410              | 4,070<br>4,262     | 22,534<br>22,842          |  |
| 1942         | 2,207                          | 12,133                   | 2,204                    | 6,222              | 620                     | 23,880             | 8,282                    | 8,204                  | 1,662                   | 436              | 4,293              | 23,877                    |  |
| 1943<br>1944 | 7,852<br>7,935                 | 13,518<br>13,626         | 2,497                    | 1,330<br>1,553     | 634<br>700              | 26,303<br>27,178   | 9,377<br>9,870           | 8,183                  | 1,627<br>1,747          | 458<br>506       | 5,564              | 26,254<br>27,102          |  |
| 1945         | 8,044                          | 13,618                   | 2,868<br>3,402           | 1,715              | 697                     | 27,908             | 10,064                   | 8,185<br>8,251         | 1,778                   | 485              | 5,780<br>6,261     | 27,102                    |  |
| 1946         | 9,960                          | 13,303                   | 2,519                    | 1,936              | 709                     | 28,815             | 10,825                   | 8,168                  | 2,005                   | 1,010            | 5,621              | 28,815                    |  |
| 1947<br>1948 | 11,461<br>14,515               | 11,769<br>13,242         | 3,105<br>3,575           | 2,138<br>2,354     | 1,053<br>1,202          | 29,962<br>35,421   | 10,866<br>13,996         | 8,012<br>8,089         | 2,447<br>3 <i>,</i> 298 | 1,369<br>1,841   | 5,910<br>7,280     | 30,057<br>36,125          |  |
| 1949         | 17,136                         | 15,032                   | 4,564                    | 2,683              | 1,106                   | 41,121             | 16,720                   | 8,215                  | 3,519                   | 2,613            | 9,942              | 42,756                    |  |
| 1950         | 22,975                         | 17,792                   | 5,733                    | 3,240              | 1,225                   | 51,622             | 20,237                   | 8,508                  | 4,160                   | 3,633            | 13,096             | 51,574                    |  |
| 1951<br>1952 | 25,343<br>29,923               | 19,085<br>24,335         | 5,911<br>6,863           | 3,912<br>4,633     | 1,230<br>1,300          | 56,312<br>67,910   | 21,974<br>27,490         | 8,994<br>9,741         | 5,269<br>7,262          | 4,465<br>6,269   | 13,180<br>15,696   | 55,994<br>69,094          |  |
| 1953         | 39,056                         | 22,385                   | 8,557                    | 5,247              | 1,513                   | 77,768             | 32,044                   | 10,611                 | 8,686                   | 6,926            | 17,639             | 78,784                    |  |
| 1954         | 38,342                         | 29,860                   | 8,378                    | 6,468              | 1,929                   | 86,292             | 35,234                   | 12,147                 | 9,503                   | 7,675            | 18,797             | 86,497                    |  |
| 1955<br>1956 | 38,759<br>43,373               | 32,645<br>33,969         | 9,433<br>9,779           | 7,258<br>8,036     | 2,014<br>2,498          | 91,440<br>99,225   | 36,089<br>39,184         | 13,857<br>15,451       | 11,217<br>12,482        | 8,026<br>9,344   | 19,838<br>21,501   | 92,408<br>102,886         |  |
| 1957         | 46,759                         | 37,133                   | 12,548                   | 9,027              | 2,433                   | 108,662            | 42,022                   | 17,043                 | 13,636                  | 10,067           | 33,645             | 112,487                   |  |
| 1958<br>1959 | 51,808<br>55,496               | 34,525<br>36,080         | 13,640<br>14,522         | 10,729<br>10,368   | 2,516<br>2,783          | 114,108<br>120,136 | 40,103<br>40,317         | 19,303<br>20,844       | 15,172<br>15,819        | 11,026<br>11,967 |                    | 116,355<br>123,506        |  |
| 1960         | 58,8 <b>7</b> 1                | 38,575                   | 15,696                   | 11,834             | 2,878                   | 120,130            | 42,418                   | 23,053                 | 17,282                  | 13,565           | 29,244             | 131,587                   |  |
| 1961         | 65,519                         | 40,830                   | 16,372                   | 12,079             | 2,797                   | 138,665            | 41,072                   | 24,628                 | 19,541                  | 15,018           |                    | 141,075                   |  |
| 1962         | 73,430                         | 42,456                   | 16,549                   | 12,926             | 3,283                   | 149,852            | 42,097                   | 27,250                 | 21,417                  | 14,935           | 40,131             | 151,780                   |  |
| 1963<br>1964 | 75,847<br>78,988               | 43,559<br>45,376         | 18,134<br>20,948         | 14,762<br>17,604   | 3,501<br>3,751          | 157,182<br>167,888 | 42,267<br>44,247         | 29,980<br>31,771       | 22,850<br>25,880        | 16,073<br>18,705 |                    | 158,687<br>170,681        |  |
| 1965         | 88,565                         | 39,778                   | 26,712                   | 19,512             | 4,107                   | 180,143            | 43,360                   | 34,669                 | 29,133                  | 21,160           | 49,401             | 184,840                   |  |
| 1966<br>1967 | 103,459<br>106,748             | 45,683<br>52,787         | 28,753<br>31,461         | 22,574<br>27,536   |                         | 206,655<br>228,146 | 47,106<br>53,182         | 37,926                 | 34,016<br>36,746        | 23,086<br>26,429 |                    | 206,665<br>228,174        |  |
| 1968         | 112,617                        | 56,226                   | 33,135                   | 34,916             |                         | 250,738            | 60,728                   | 41,662<br>43,864       | 41,224                  | 26,429           |                    | 249,909                   |  |
| 1969         | 126,621                        | 54,407                   | 33,035                   | 41,602             | 17,301                  | 275,081            | 64,016                   | 47,083                 | 46,441                  | 33,613           | 74,822             | 276,135                   |  |
| 1970<br>1971 | 141,326<br>170,396             | 62,921<br>68,350         | 36,905<br>45,583         | 50,865<br>48,434   |                         | 318,189<br>367,252 | 71,166<br>79,717         | 51,427<br>54,178       | 55,839<br>66,341        | 41,343<br>52 575 | 87,660<br>107,129  | 318,901                   |  |
| 1972         | 180,132                        | 73,446                   | 54,131                   | 78,490             | 34,992                  | 423,999            | 82,410                   | 62,029                 | 82,472                  | 59,862           | 125,260            | 424,890                   |  |
| 1973         | 200,633                        | 69,158                   | 66,711                   | 97,141             |                         | 473,840            | 88,372                   | 65,280                 | 94,547                  |                  | 144,005            |                           |  |
| 1974<br>1975 | 232,111<br>313,846             | 85,291<br>108,921        | 76,306<br>96,930         | 126,929<br>160,307 |                         | 567,683<br>734,240 | 104,178<br>121 494       |                        | 115,982                 |                  | 168,122<br>213,042 |                           |  |
|              |                                | 100,721                  |                          | 100,007            |                         | 7.54,240           | 141,474                  | , 5,500                | 100,700                 | 140,101          | -10,042            |                           |  |

(a) From 1900, year ended 30 June. (b) Reimbursements, fees, etc. (c) Revenue from sales, leases, licences and royalties relating to land, mining and timber.

NOTE: This table has been replaced by a new series 'State and Local Authorities: Receipts and Outlays' on previous page.

| TABLE 21.18 - NET EXPENDITURE FROM LOAN FUNDS; PUBLIC DEBT |
|--|
| (\$'000)   |

|  | Net  | expenditure j  | from loan fun  | Water  | works and s  | ervices (b)  |  |  | ic debt<br>1 of year)  |
|--|--|--|--|--|--|--|--|--|--|
| Year (a)   | Railways,<br>tramways<br>and<br>buses  | Electricity<br>supply  | Harbours,<br>rivers,<br>light-<br>houses,<br>etc.                                      | supplies<br>sewerage,<br>drainage<br>and<br>irrigation                                 | Public<br>buildings  | Other  | Total  | Gross<br>amount<br>out-<br>standing  | Sinking<br>fund  |
| 1860   |  | _  |  | _  | _  | _  | _  | 4  | _  |
| 1870<br>1880<br>1890<br>1900<br>1910<br>1920<br>1930                         | x  |  | (d)38<br>6<br>395<br>174<br>204<br>529   |  | (e)76<br>152<br>21<br>108  | n.a.<br>n.a.<br>110<br>626<br>4,765<br>4,226   | (d)802<br>32<br>1,757<br>2,058<br>5,327<br>7,291   | 722<br>2,735<br>23,349<br>46,575<br>93,644<br>142,389  | n.a.<br>170<br>754<br>5,139<br>13,656<br>2,081                                 |
| 1931<br>1932<br>1933<br>1934<br>1935<br>1936<br>1937<br>1938<br>1939<br>1940 |  | 878<br>263<br>374<br>659<br>997<br>946<br>491<br>950<br>441<br>200                   | 257<br>155<br>485<br>492<br>610<br>602<br>352<br>201<br>184<br>104                     | 420<br>1,152<br>1,355<br>1,606<br>2,155<br>2,487<br>2,303<br>1,843<br>1,777<br>1,615   |  | 1,457<br>1,055<br>1,838<br>2,344<br>1,103<br>700<br>741<br>1,144<br>640<br>974         | 3,012<br>2,624<br>4,121<br>5,297<br>5,076<br>4,903<br>4,064<br>4,321<br>3,272<br>3,624           | 153,130<br>159,416<br>167,029<br>171,696<br>177,180<br>180,688<br>184,666<br>187,424<br>190,945<br>192,461 | 2,621<br>2,618<br>2,693<br>743<br>1,048<br>1,138<br>1,292<br>614<br>719<br>608 |
| 1941<br>1942<br>1943<br>1944<br>1945<br>1946<br>1947<br>1948<br>1949<br>1950 | 214<br>110<br>157<br>49<br>140<br>142<br>535<br>676<br>913<br>4,496                              | 18<br>25<br>92<br>31<br>11<br>208<br>332<br>1,471<br>2,131<br>4,691                  | 152<br>111<br>133<br>Cr. 143<br>61<br>75<br>173<br>316<br>449<br>804                   | 1,649<br>605<br>100<br>75<br>150<br>473<br>1,453<br>1,453<br>1,626<br>2,002            | 306<br>70<br>55<br>166<br>241<br>451<br>772<br>1,097<br>1,099<br>1,357                           | 480<br>437<br>217<br>34<br>492<br>276<br>821<br>125<br>942<br>2,859                    | 2,819<br>1,359<br>754<br>212<br>1,094<br>1,625<br>4,087<br>5,074<br>7,161<br>16,209              | 195,583<br>194,718<br>193,976<br>192,957<br>191,790<br>193,852<br>198,005<br>200,549<br>207,377<br>219,100 | 1,147<br>535<br>347<br>140<br>254<br>1,008<br>1,091<br>309<br>126<br>142       |
| 1951<br>1952<br>1953<br>1954<br>1955<br>1956<br>1957<br>1958<br>1959<br>1960 | 3,723<br>15,198<br>13,533<br>11,295<br>9,752<br>6,139<br>5,519<br>4,209<br>5,711<br>4,953        | 6,591<br>6,684<br>179<br>1,406<br>1,410<br>2,049<br>4,200<br>2,480<br>2,200<br>1,553 | 1,164<br>2,694<br>2,422<br>2,328<br>1,920<br>1,638<br>950<br>1,398<br>1,428<br>1,423   | 4,091<br>4,803<br>4,858<br>3,939<br>5,661<br>5,516<br>7,119<br>7,694<br>8,395<br>9,547 | 2,003<br>2,729<br>5,432<br>3,144<br>3,993<br>4,187<br>5,599<br>5,891<br>7,410<br>8,723           | 3,081<br>3,409<br>8,787<br>6,276<br>6,726<br>7,098<br>9,169<br>6,599<br>7,199<br>6,355 | 20,653<br>35,517<br>35,213<br>28,388<br>29,462<br>26,629<br>32,556<br>28,272<br>32,342<br>32,504 | 246,374<br>276,577<br>306,144<br>331,565<br>355,763<br>377,465<br>410,290<br>436,857<br>464,237<br>493,575 | 17<br>647<br>1,861<br>822<br>442<br>245<br>112<br>147<br>173<br>171            |
| 1961<br>1962<br>1963<br>1964<br>1965<br>1966<br>1967<br>1968<br>1969<br>1970 | 4,221<br>5,432<br>6,204<br>7,496<br>6,800<br>7,628<br>9,068<br>9,068<br>9,750<br>10,547<br>6,331 | 400<br>300<br>500<br>794<br>1,434<br>2,427<br>4,542<br>5,679<br>4,566                | 1,966<br>2,587<br>2,438<br>3,028<br>2,822<br>2,583<br>1,746<br>2,402<br>1,190<br>2,055 | 10,314<br>10,952<br>10,770<br>10,537<br>12,667<br>13,642<br>14,552<br>12,560<br>13,330 | 10,479<br>12,032<br>13,420<br>15,630<br>19,948<br>19,908<br>18,230<br>18,816<br>20,116<br>24,627 | 8,037<br>6,449<br>5,563<br>6,409<br>5,457<br>3,580<br>5,902<br>5,115<br>4,765<br>8,594 | 35,418<br>37,751<br>38,894<br>43,100<br>46,779<br>47,800<br>51,015<br>53,177<br>54,859<br>59,504 | 523,070<br>555,130<br>587,336<br>626,045<br>665,620<br>705,514<br>748,601<br>792,969<br>840,343<br>886,778 | 94<br>222<br>485<br>442<br>473<br>267<br>216<br>408<br>3,015<br>182            |
| 1971<br>1972<br>1973<br>1974<br>1975   | 7,194<br>5,919<br>4,179<br>5,569<br>6,185  | 27<br>3,666<br>4,104<br>3,467<br>4,069   | 2,202<br>1,902<br>2,371<br>2,505<br>3,728  | 15,176<br>18,369<br>23,598<br>26,708<br>24,487   | 25,549<br>23,994<br>32,872<br>34,324<br>45,262   | 13,492<br>32,606<br>21,882<br>3,291<br>6,140   | 63,640<br>86,456<br>89,006<br>75,863<br>89,871   | 924,111<br>975,958<br>1,030,060<br>1,074,111<br>1,120,313  | 582<br>1,216<br>265<br>4,899<br>1,037  |

(a) From 1900, year ended 30 June. Sinking fund at 31 March from 1900 to 1928. (b) From 1928 includes expenditure from Loan Suspense Account. (c) Total amount for the years 1877 to 1881. (d) Total amount for the years 1872 to 1881. (e) Includes expenditure prior to 1890.

NOTE: This table has been replaced by a new series 'State and Local Authorities: Receipts and Outlay' on an earlier page.

| TABLE 21.19 - | BANKING | AND | PERMANENT | BUILDING | SOCIETIES |
|---------------|---------|-----|-----------|----------|-----------|
|               |         |     |           |          |           |

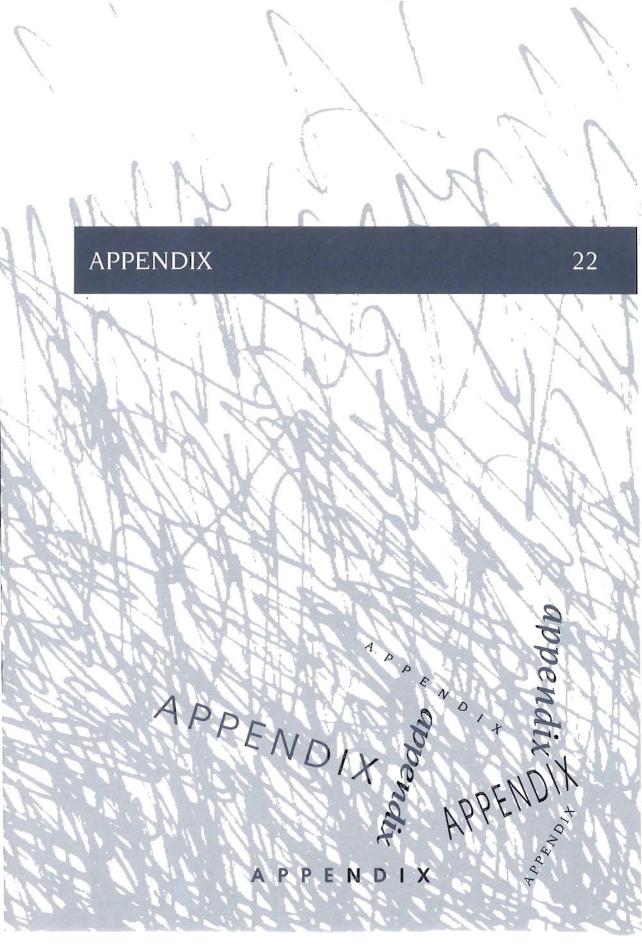
|              |                    | Trading bank<br>Loans | s<br>Weekly    | Saninac                | hauke (c)                |              | Dormanaut                               | building societie | ac (d)       |
|--------------|--------------------|-----------------------|----------------|------------------------|--------------------------|--------------|---|-------------------|--------------|
|              |                    | advances              | debits to      | Operative              | banks (c)<br>Depositors' | Liah         | ilities                                 |                   | sets         |
|              | Depositors'        |                       | customers'     | accounts               | balances                 | With-        | 111111111111111111111111111111111111111 | Amount            | 155615       |
|              | balances           | discounted            | accounts       | at end of              | at end of                | drawable     |   | due on            |              |
| Year         | (a)                | (a)                   | (b)            |                        |                          |              | Danaaita                                | loans             | Total        |
| 1 001        | ( <i>u</i> )       | (11)                  | (0)            | year                   | year                     | shares       | Deposits                                |                   | 10111        |
|              | \$'000             | \$'000                | \$m            | No.                    | \$'000                   | \$'000       | \$′000                                  | \$'000            | \$'000       |
| 1870         | n.a.               | n.a.                  | n.a.           | 895                    | 27                       | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1880         | n.a.               | n.a.                  | n.a.           | 1,299                  | 45                       | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1890         | 1,904              | 2,809                 | n.a.           | 3,014                  | 69                       | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1900         | 8,781              | 5,514                 | n.a.           | 33,646                 | 2,598                    | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1910         | 12,627             | 12,228                | n.a.           | 84,262                 | 6,955                    | n.a.         | n.a.                                    | n.a.              | n,a.         |
| 1920         | 24,742             | 21,594                | n.a.           | 211,415                | 14,516                   | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1930         | 25,524             | 41,773                | n.a.           | 367,665                | 23,457                   | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1940         | 42,219             | 47,529                | n.a.           | 233,649                | 23,720                   | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1950         | 116,458            | 55,301                | 27.4           | 378,670                | 79,225                   | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1951         | 149,244            | 66,680                | 38.6           | 392,790                | 89,345                   | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1952         | 170,923            | 83,353                | 43.6           | 403,678                | 94,342                   | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1953         | 170,234            | 87,353                | 44.2           | 414,288                | 99,589                   | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1954         | 181,863            | 106,429               | 50.8           | 422,480                | 105,229                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1955         | 180,895            | 137,830               | 52.4           | 426,637                | 107,258                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1956         | 174,070            | 142,156               | 53.9           | 446,419                | 115,868                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1957         | 185,576            | 135,074               | 57.1           | 473,548                | 125,386                  | n.a.         | n.a.                                    | n.a.              | n,a.         |
| 1958         | 186,478            | 141,198               | 60.4           | 497,690                | 131,896                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1959         | 180,300            | 147,106               | 61.5           | 527,079                | 142,998                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1960         | 192,076            | 142,064               | 69.7           | 550,966                | 157,246                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1961         | 190,094            | 146,244               | 75.7           | 577,619                | 161,424                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1962         | 209,274            | 139,204               | 80.4           | 625,070                | 181,056                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1963         | 219,952            | 153,528               | 88.2           | 683,417                | 208,812                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1964         | 242,268            | 164,878               | 96.4           | 736,009                | 239,766                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1965         | 272,430            | 186,000               | 106.3          | 786,340                | 261,654                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1966         | 310,432            | 195,190               | 122.4          | 848,562                | 292,871                  | n.a.         | n.a.                                    | n.a.              | n,a.         |
| 1967         | 355,899            | 212,023               | 138.6          | 905,349                | 330,807                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1968         | 398,837            | 252,627               | 169.1          | 970,120                | 373,602                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1969<br>1970 | 462,559<br>558,017 | 280,147<br>323,824    | 209.0<br>246.4 | 1,036,180<br>1,096,466 | 412,984<br>431,877       | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1970         | ,                  | •                     | 240.4<br>295.3 |                        | ,                        | n.a.         | n.a.                                    | n <i>.</i> a.     | n.a.         |
| 1971         | 544,732<br>552,546 | 351,110<br>357,410    | 295.5<br>318.4 | 1,153,420<br>1,205,448 | 464,611<br>511,457       | n.a.<br>n.a. | n.a.<br>n.a.                            | n.a.<br>n.a.      | n.a.<br>n.a. |
| 1973         | 693,456            | 443,330               | 355.9          | 1,250,576              | 608,133                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1974         | 829,002            | 604,460               | 439.4          | 1,327,699              | 684,974                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1975         | 906,589            | 673,526               | 515.9          | 1,401,485              | 779,427                  | n.a.         | n.a.                                    | n.a.              | n.a.         |
| 1976         | 1,092,350          | 791,376               | 680.0          | 1,443,883              | 897,693                  | 522.517      | 286,320                                 | 632,929           | 849,182      |
| 1977         | 1,376,813          | 927,709               | 814.4          | 1,466,200              | 960,548                  | 646,176      | 383,451                                 | 851,896           | 1,078,720    |
| 1978         | 1,448,206          | 1,163,207             | 975.9          | 1,511,092              | 1.048.510                | 747,307      | 508,710                                 | 1,046,718         | 1,308,935    |
| 1979         | 1,621,852          | 1,368,657             | 1,173.7        | 1,539,416              | 1,133,627                | 858,380      | 681,851                                 | 1,270,625         | 1,601,527    |
| 1980         | 1,742,801          | 1,678,121             | 1,463.3        | 1,579,722              | 1,216,182                | 966,319      | 812,817                                 | 1,491,983         | 1,849,490    |
| 1981         | 2,026,507          | 1,943,299             | 1,826.3        | 1,647,837              | 1,360,315                | 1,020,465    | 994,100                                 | 1,650,304         | 2,100,204    |
| 1982         | 2,521,072          | 2,288,020             | 2,283.4        | 1,741,114              | 1,514,207                | 1,129,730    | 1,030,780                               | 1,793,793         | 2,261,263    |
| 1983         | 2,877,685          | 2,571,177             | 2,651.2        | 1,835,917              | 1,910,538                | 1,265,212    | 948,426                                 | 1,743,068         | 2,312,162    |
| 1984         | 3,004,651          | 2,874,000             | 3,043.7        | 1,961,811              | 2,214,373                | 1,374,872    | 861,647                                 | 1,664,158         | 2,345,479    |
| 1985         | 3,622,307          | 3,342,663             | 3,857.6        | 2,051,681              | 2,402,828                | 1,463,808    | 908,036                                 | 1,807,865         | 2,468,670    |
| 1986         | 4,653,781          | 4,032,226             | 4,846.9        | 2,153,457              | 2,649,943                | 1,534,979    | 1,058,426                               | 1,977,938         | 2,702,788    |
| 1987         | 5,143,047          | 4,652,428             | 5,133.2        | 2,618,596              | 3,975,333                | 1,685,760    | 1,104,696                               | 2,056,374         | 2,913,559    |
| 1988         | 5,881,611          | 5,440,095             | 6,167.8        | 2,638,557              | 5,442,147                | 1,105,345    | 518,082                                 | 1,222,144         | 1,707,310    |
| 1989         | (e)                | (e)                   | 5,382.4        | (e)                    | (e)                      | 1,469,005    | 396,992                                 | 1,480,756         | 2,010,820    |
| 1990         | (e)                | (e)                   | (e)            | (e)                    | (e)                      | 1,469,192    | 381,433                                 | 1,398,739         | 2,061,966    |
|              |                    |                       |                |                        |                          |              |   |                   |              |

(a) Average based on amounts as at close of business each week. From 1927, year ended 30 June. (b) Weekly average for year ended 30 June. Excludes debits to Commonwealth Government accounts at city branches. From 1946-47, includes The Rural and Industries Bank of Western Australia (General Banking Department). (c) From 1900, year ended 30 June. (d) At 30 June. (e) No longer available.

| TABLE 21.20 – WESTERN | AUSTRALIA IN | <b>RELATION TO</b> | AUSTRALIA |
|-----------------------|--------------|--------------------|-----------|
|-----------------------|--------------|--------------------|-----------|

|  | Unit                           | Date or<br>period      | Western<br>Australia | Australia       | Percentage   |
|--|--------------------------------|------------------------|----------------------|-----------------|--------------|
| Area   | sq km                          | ••                     | 2,525,500            | 7,682,300       | 32.9         |
| Proportion of area having rainfall -               |                                |                        |                      |                 |              |
| Under 250 mm                                       | per cent                       |                        | 58.0                 | 39.0            |              |
| 250 mm and under 500 mm                            | per cent                       |                        | 29.2                 | 31.8            |              |
| 500 mm and over                                    | per cent                       | 20 T 1000              | 12.8                 | 29.2            |              |
| Population (a)                                     | number                         | 30 June 1992p          | 1,662,777            | 17,528,982      | 9.6          |
| Population increase<br>Rate of population increase | number<br>per cent             | 1991-1992<br>1991-1992 | 25,994<br>1.28       | 236,942<br>1.15 | 13.8         |
| Births registered (b)                              | number                         | 1991-1992              | 25,331               | 257,247         | 9.8          |
| Deaths registered (b)                              | number                         | 1991                   | 9,420                | 119,146         | 7.9          |
| Marriages registered                               | number                         | 1991                   | 10,659               | 113,869         | 9.3          |
| Divorce - Dissolutions granted                     | number                         | 1991                   | 4,446                | 45,630          | 9.7          |
| Employed labour force (c)                          | '000                           | July 1992              | 766.6                | 7,749.2         | 9.9          |
| Average weekly earnings –                          |                                | <b>,</b> ,             |                      | .,              |              |
| all male employees(d)                              | number                         | February 1992          | 610.20               | 598.90          |              |
| Unemployed on benefit                              | "                              | 30 June 1991           | 58,262               | 535,946         | 10.9         |
|  | ost '000                       | 1991                   | 119.1                | ,               | 7.4          |
| Industrial disputes – Working days I               |                                |                        |                      | 1,610.5         |              |
| Area under crop                                    | '000 hectares                  | 1990-91                | 5,359                | 17,382          | 30.8         |
| Area under sown pasture                            | '000 hectares                  | 1990-91                | 6,803                | 28,275          | 24.1         |
| Area of —  | 1000 hastanas                  | 1000.01                | 2 (22                | 0.010           | 20.4         |
| Wheat for grain                                    | ′000 hectares<br>′000 hectares | 1990-91<br>1990-91     | 3,632<br>324         | 9,218           | 39.4         |
| Oats for grain<br>Barley for grain                 | '000 hectares                  | 1990-91                | 498                  | 1,044<br>2,556  | 31.0<br>19.5 |
| Hay  | '000 hectares                  | 1990-91                | 223                  | 1,368           | 19.3         |
| Fruit and vineyards                                | '000 hectares                  | 1990-91                | 7                    | 173             | 4.0          |
| Livestock —  | ooo neemes                     | 1//0 /1                |                      | 1,0             | 1.0          |
| Sheep  | <b>'000</b>                    | 31 March 1991          | 36,465               | 163,238         | 22.3         |
| Cattle   | <i>'</i> 000                   | 31 March 1991          | 1,584                | 23,662          | 6.7          |
| Pigs   | <b>′000</b>                    | 31 March 1991          | 271                  | 2,531           | 10.7         |
| Production —                                       |                                |                        |                      |                 |              |
| Wheat for grain                                    | '000 tonnes                    | 1990-91                | 5,449                | 15,066          | 36.1         |
| Wool (e)   | '000 tonnes                    | 1990-91                | 222                  | 843             | 26.3         |
| Meat (f)   | '000 tonnes                    | 1990-91                | 263                  | 3,123           | 8.4          |
| Whole milk (g)                                     | mil. litres                    | 1990-91                | 283                  | 6,403           | 4.4          |
| Butter (g)   | tonnes                         | 1989-90                | 1,339                | 104,158         | 1.3          |
| Value of agricultural                              | ¢.                             | 1000.01                | 0.545                |                 | 100          |
| commodities produced                               | \$m                            | 1990-91                | 2,715                | 21,168          | 12.8         |
| Mining establishments - Value added                | l \$m                          | 1990-91                | (h)7,200.0           | 20,289.3        | 35.5         |
| Iron ore production                                | '000 tonnes                    | 1990-91                | 107,673              | 111,475         | 96.6         |
| Coal production                                    | '000 tonnes                    | 1990-91                | (i)5,218             | 166,505         | 3.1          |
| Crude oil production (j)                           | megalitres                     | 1990-91                | 7,004                | 29,189          | 24.0         |
| Manufacturing establishments (k) —                 |                                |                        |                      |                 |              |
| Number   |                                | 1989-90                | 2,561                | 30,471          | 8.4          |
| Employment - At 30 June                            | 2000                           | 1989-90                | 67.0                 | 1,006.1         | 6.7          |
| Wages and salaries paid                            | \$m                            | 1989-90                | 1,786.7              | 26,968.7        | 6.6          |
| Turnover   | \$m                            | 1989-90                | 13,128.4             | 165,886.4       | 7.9          |
| New dwelling units commenced (l)                   | number                         | 1991-92                | 16,323               | 140,247         | 11.6         |
| Value of all building commenced                    | \$m                            | 1990-91                | 1,728.3              | 21,573.5        | 8.0          |
| Foreign imports                                    | \$m f.o.b.                     | 1991-92                | 3,548.2              | 50,983.0        | 7.0          |
| Foreign exports                                    | \$m f.o.b.                     | 1991-92                | 14,039.5             | 55,074.8        | 25.5         |
| Motor vehicles on register                         | <i>'</i> 000                   | 30 June 1992           | 1,081.7              | 10,246.9        | 10.6         |
| New motor vehicles registered                      | <b>'000</b>                    | 1991-92                | 53.4                 | 537.7           | 9.9          |
| Road traffic accidents—                            |                                |                        |                      |                 |              |
| Persons killed                                     | number                         | 1992                   | 200                  | 1,977           | 10.1         |
| Retail turnover (excluding                         | number                         | 1772                   | 200                  | 1,777           | 10.1         |
|  |                                |                        |                      |                 |              |
| motor vehicles, etc.)                              | \$m                            | 1991-92                | 8,597.2              | 93,373.0        | 9.2          |

(a) Based on estimated resident population. (b) Based on State of usual residence. (c) In civilian employment. Excludes defence forces and employees in agriculture and private domestic service, and trainee teachers. (d) Not comparable with 'Average weekly earnings per employed male unit' previously published. (e) In terms of greasy wool. Comprises shorn wool, dead wool, fellmongered wool and wool exported on skins. (f) Comprises sheep, cattle, pig and poultry meat. Excluding Tasmanian poultry production. Dressed carcass weight. Excludes offal. (g) *Source:* Australian Dairy Corporation. (h) Excludes establishments predominantly engaged in quarrying sand and gravel. (i) *Source:* Department of Mines. (j) *Source:* Department of Primary Industries and Energy. (k) Excludes details for manufacturing establishments employing fewer than four persons. Excludes electricity and gas establishments. (l) Number of new dwelling units has been rounded to nearest ten.



## Chapter 22

# APPENDIX

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# APPENDIX

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|   | histowy of            |          |         |         |        |      |     |     |       | 1004 and 1.0                        |
| boriginal population,   | , history or          |          |         | <br>A   |        | •••  |     |     | •••   | 1984, pp. 1-8                       |
| griculture, Institute c   |                       |          |         |         |        | •••  |     | ••• | •••   | 1975, pp. 217-18                    |
| ir pollution and the  |                       |          | •••     | •••     |        |      |     | ••• |       | 1975, pp. 63-5                      |
| <i>,</i>  |                       | •••      | •••     |         | •••    |      |     |     | • • • | 1971, pp. 449-51                    |
| NZAAS Congress: Pe  |                       |          | •••     | •••     |        | •••  |     |     |       | 1973, pp. 562-4                     |
| ustralian Stock Excha   | ange (Perth) I        | .td.     | •••     |         |        |      |     |     |       | 1989, pp. 257-9                     |
| asic wage, historical s   | summary—              |          |         |         |        |      |     |     |       |                                     |
| Commonwealth  |                       |          |         |         |        |      |     |     |       | 1968, pp. 396-401                   |
| State   |                       |          |         |         |        |      |     |     |       | 1968, pp. 403-5                     |
|   |                       |          |         |         |        |      |     |     |       | .,, FL                              |
| aptain Fremantle's Re   | eport of Arriv        | al of F  | First S | ettlers | text o | f    |     |     |       | 1976, pp. 541-2                     |
| Captain Stirling's 'Nar   |                       |          |         |         |        |      |     |     |       | 1974, pp. 533-41                    |
| ensus of Wholesale E  |                       |          |         |         |        |      |     |     |       | 1976, pp. 434-7                     |
| ensuses of population   |                       |          |         |         |        |      |     |     |       | 1970, pp. 434-7<br>1972, pp. 547-70 |
| ensus of population a   |                       |          |         |         |        |      |     |     |       | 1972, pp. 547-70<br>1992, pp. 6-7   |
| ensus of population a<br>entenary of the disco                                    |                       |          |         | <br>de  | •••    |      |     |     |       | 1982, pp. 0-7                       |
|   |                       |          |         |         |        |      |     |     |       | 1983, pp. 393-7                     |
| ommunity Welfare, [   | Jepartment to         |          |         |         |        |      |     |     |       | 1981, pp. 135-9                     |
| omputer Service Cen   |                       | •••      |         |         |        |      |     |     |       | 1969, p. 504                        |
| onservation of the fa   |                       |          | •••     | •••     |        | •••  | ••• |     |       | 1976, pp. 93-5                      |
| Conservation of the flo   |                       | •••      |         |         |        |      |     |     |       | 1975, pp. 78-80                     |
| rown Law Departme   | nt, history of        |          |         |         |        |      |     | ••• |       | 1983, pp. 129-31                    |
| Dance Triennium, 1990   | )-92                  |          |         |         |        | •••• |     |     |       | 1992, pp. 6-7                       |
| ducation Department   | history of            |          |         |         |        |      |     |     |       | 1972, pp. 117-21                    |
|   |                       | `        | •••     |         | •••    |      |     |     |       |                                     |
| lectoral Divisions (Co  |                       |          |         |         |        |      |     |     |       | 1971, pp. 97-8                      |
| lectoral Divisions (Co  |                       |          |         |         |        |      |     | ••• | •••   | 1970, p. 530                        |
| lectoral Provinces and  |                       |          |         |         | •••    |      | ••• | ••• |       | 1976, pp. 116-17                    |
|   |                       | •••      |         |         |        |      |     | ••• | •••   | 1973, pp. 444-6                     |
| xploration in Westerr   |                       |          |         |         |        |      |     |     |       | 1975, pp. 9-28                      |
| xport price index   |                       |          |         |         |        |      |     | ••• |       | 1970, p. 507                        |
| isheries and Wildlife,  | Department            | of, hist | tory o  | ť       |        |      |     |     |       | 1984, рр. 121-4                     |
| lag of Western Austra   |                       |          |         |         |        |      |     |     |       | 1984, p. 120                        |
| lora of Western Austr   |                       |          |         |         |        |      |     |     |       | · 1                                 |
| Acacia  |                       |          |         |         |        |      |     |     |       | 1965, pp. 59-60                     |
| 'Christmas tree' (Nuy   |                       | da)      |         |         |        |      |     |     |       | 1962, p. 51                         |
| Economic value of th  |                       |          |         |         |        |      |     |     |       | 1968, pp. 54-5                      |
| Grasses   |                       |          |         |         |        |      |     |     |       | 1976, pp. 69-72                     |
|   |                       |          |         |         |        |      |     |     |       | 1968, pp. 48-9                      |
| Urchids   |                       |          | •••     |         |        |      |     |     |       | 1974, pp. 52-4                      |
|   |                       |          |         |         |        |      |     |     |       |                                     |
|   |                       |          |         |         |        |      |     |     |       |                                     |
| Proteaceae family in  |                       | ed       |         |         |        |      |     |     |       |                                     |
| Orchids<br>Proteaceae family in<br>Plora of Western Austr<br>Rutaceae family in W | ralia <i>—continu</i> |          |         |         |        |      |     |     |       | 1972, pp. 53-5                      |

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#### Articles Published in Previous Issues (a) (continued)

In cases where an article has been published in more than one previous issue, the reference to its last appearance only is given. Article Year Book Forests Department, history of 1976, pp. 125-7 ... ... ... ... Fremantle, Port of ... ... 1970, pp. 441-3 ... ... ... ... ... ... Geraldton, Port of ... ... ... ... ... ... Government administration, Commonwealth ... ... ... 1972, pp. 447-9 ... ... ... 1973, p. 542 ... ... ... ... Governor Darling's letter to the Earl of Bathurst, text of Governors and Acting Governors of Western Australia 1974, pp. 541-2 ... ... ... ... 1982, pp. 121-2 ... ... ... ... 1979, pp. 12-16 Governor Stirling's Commission dated 4 March 1931, text of ... ... Historical review — chronological notes from 1829 1967, pp. 2-33 ... ... ... ... ... Historical survey of Western Australia ... ... 1973, pp. 1-15 ... ... ... History of the Royal Agricultural Society of Western Australia (Inc.) 1991, pp. 181-4 ... History of Western Australia ... ... ... ... ... Housing and Construction, historical review ... ... ... 1990, pp. 1-5 ... ... ... 1986, pp. 367-9 ... ... ... Hydrocarbon Exploration on the North-West Shelf 1976, pp. 37-9 ... ... ... ... ... Industrial development, Department of 1974, p. 403 . . . ... . . . ... ... ... Integrated Economic Censuses, 1968-69 1971, pp. 552-64 ... . . . ... ... ... ... ... Jesus People 1989, pp. 115-6 ... ... ... ... ... ... Kuri Bay pearls 1974, pp. 558-9 ... . . . ... ... ... ... ... ... . . . Labour Force Survey ... ... ... Land settlement schemes, government ... 1971, pp. 508-10 ... ... ... ... ... . . . 1976, pp. 328-9 ... ... ... ... ... ... Land tenure system, origin and development of 1960, pp. 198-9 ... ... ... ... ... Lands and Surveys Department, history of .... 1980, pp. 128-31 ... ... ... ... ... Lawrence M.L.A., Hon Carmen ... ... ... Linseed, area and production ... ... 1992, pp. 5-7 ... ... ... ... ... ... ... 1973, pp. 349-50 ... ... ... Local government in Western Australia, development of 1971, pp. 565-70 ... ... ... ... Lower Great Southern Statistical Division Profile .... 1989, pp. 260-71 ... ... ... ... McNess Housing Trust 1969, p. 205 ... ... ... ... ... ... ... . . . ... Major Lockyer's letter to Colonial Secretary MacLeay, text of 1977, pp. 553-7 . . . ... ... Maritime Museum, Western Australian ... ... 1986, pp. 237-8 ... ... ... ... Meteorites, Western Australian ... 1973, pp. 34-5 ... ... ... ... ... ... ... Meteorological services— History of ... ... ... 1960, pp. 34-5 ... ... ... ... ... ... ... ... ... Provision of 1966, pp. 46-7 ... ... ... ... ... ... ... Metric conversion for Australia ... 1972, pp. 571-4 ... ... ... . . . ... . . . Midlands Statistical Division Profile ... ... Mines, Department of, history of ... ... 1990, pp. 290-8 ... ... ... ... ... 1977, pp. 117-25 ... ... ... ... ... ... ... One Hundred Years of Responsible Government 1990, pp. 70-83 ... ... ... ... ... Overseas arrivals and departures ... ... 1971, pp. 145-6 ... ... ... ... ... Parliamentary procedure and administrative machinery 1970, pp. 106-9 ... . . . ... ... Perth Landfill Gas Project ... ... ... ... 1992, p. 15-5 . . . . . . ... ... 

 Perth's underground water
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 Pest control without insecticides
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 Pesticides, effect on beneficial forms of life
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 Perth's underground water 1980, pp. 43-5 ... ... ... ... 1973, pp. 93-5 ... ... ... ... 1969, pp. 90-1 • • • ... ... ... Physical features and geology .... ... ... 1986, pp. 7-30 ... ... ... ... Poisonous plants of Western Australia ... ... 1970, pp. 56-9 ... ... ... ...

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In cases where an article has been published in more than one previous issue the reference to its last appearance only is given.

| Article   |          |        |     | <br> | <br>    |     | Year Book         |
|---|----------|--------|-----|------|---------|-----|-------------------|
| Police Department history of                              |          |        |     |      |         |     | 1072 pp 112 16    |
| Police Department, history of                             |          | •••    |     | <br> | <br>••• | ••• | 1973, pp. 113-16  |
| Population in local government areas                      |          | •••    |     | <br> | <br>    |     | 1972, pp. 542-3   |
| Port Hedland, Port of<br>Premier's Department, history of | •••      | •••    |     | <br> | <br>    | ••• | 1974, pp. 435-8   |
| Premier's Department, history of                          |          | •••    |     | <br> | <br>    |     | 1974, pp. 109-13  |
|   |          |        |     | <br> | <br>    |     | 1971, p. 571      |
| Public Works Department, history of                       |          | •••    |     | <br> | <br>    |     | 1971, рр. 116-19  |
| Pyrites, production of                                    | •••      |        | ••• | <br> | <br>    |     | 1973, рр. 393-4   |
| Railways—   |          |        |     |      |         |     |                   |
| Origin and development                                    |          |        |     | <br> | <br>    |     | 1968, рр. 360-1   |
| Private   |          |        |     | <br> | <br>    |     | 1965, p. 365      |
| TT: 1   |          |        |     | <br> | <br>    |     | 1968, pp. 363-4   |
| Rainfall in agricultural areas, 1969                      |          |        |     | <br> | <br>    |     | 1970, p. 529      |
| Rents (weekly) of unfurnished house                       |          |        |     | <br> | <br>    |     | 1973, p. 216      |
| nemb (weekly) or unumbried house                          | lo una   | iiuto  |     | <br> | <br>    |     | 1970, p. 210      |
| Satellites and Meteorology                                |          |        |     | <br> | <br>    |     | 1973, pp. 51-4    |
| Settlement at King George's Sound,                        | earlv ŀ  | ustorv |     | <br> | <br>    |     | 1977, pp. 556-9   |
| South-West Statistical Division Profil                    | le       |        |     | <br> | <br>    |     | 1986. pp.260-9    |
| Sport and Recreation, Department of                       | f        |        |     | <br> | <br>    |     | 1985, pp. 115-123 |
| Sporting organisations                                    |          |        |     | <br> | <br>    |     | 1970, pp. 196-200 |
| State Basic Wage  |          |        |     | <br> | <br>    |     | 1976, pp. 485-7   |
| State Government Departments, fund                        | ctions ( |        |     |      |         |     | 1972, pp. 108-16  |
| State Government Departments, func                        |          | 01     |     | <br> | <br>    |     | 1772, pp. 100-10  |
| Third Party Claims Tribunal                               |          |        |     | <br> | <br>    |     | 1973, p. 254      |
| Tornadoes   |          |        |     | <br> | <br>    |     | 1970, pp. 48-51   |
| Tourism, Department of, history of                        |          |        |     | <br> | <br>    |     | 1975, pp. 132-6   |
| Trade, constitutional provisions and                      | legisla  | tion   |     | <br> | <br>    |     | 1973, p. 412      |
| Trade, historical summary of                              |          |        |     | <br> | <br>    |     | 1967, pp. 346-7   |
| Trade, overseas, encouragement of                         |          |        |     | <br> | <br>    |     | 1973, pp. 412-13  |
|   |          |        |     | <br> | <br>    |     | 1982, pp. 134-9   |
| m i i i   |          |        |     | <br> | <br>    |     | 1983, pp. 52-61   |
| i j iii   |          |        |     |      |         |     | - / 11            |
| University — principal benefactions                       |          |        |     | <br> | <br>    |     | 1969, р. 173      |
| Use of pesticides in Western Austral                      | ia       |        |     | <br> | <br>    |     | 1971, pp. 87-90   |
|   |          |        |     |      |         |     |                   |
| West Australian Ballet                                    |          |        |     | <br> | <br>    |     | 1989, pp. 140-1   |
| West Australian Economy, 1959 to 19                       | 973      |        |     | <br> | <br>    |     | 1973, pp. 565-71  |
| Western Australia: History of,                            |          |        |     | <br> | <br>    |     | 1989, pp. 1-10    |
|   |          |        |     | <br> | <br>    |     | 1992, p. 1-10     |
| Western Australian Economy, Retros                        |          |        |     |      | <br>    |     | 1984, pp. 471-7   |
|   |          |        |     |      |         |     |                   |
| Wheat, development of production                          | -Feer a  |        |     | <br> | <br>    |     | 1968, p. 270      |

(a) Commencing with the present series: No. 1 1957

|  | At June                          | e 1993                                   |                             |
|--|----------------------------------|--|-----------------------------|
| PERTH  | SOUTH-WEST<br>(continued)        | UPPER GREAT<br>SOUTHERN                  | <i>CENTRAL</i><br>GASCOYNE  |
| CENTRAL  | PRESTON                          | (continued)                              | GASCOTTE                    |
| METROPOLITAN                                       |                                  | LAKES                                    | Carnaryon (S)               |
|  | Bunbury (C)                      |  | Exmouth (S)                 |
| Claremont (T)                                      | Capel (S)                        | Corrigin (S)                             | Shark Bay (S)               |
| Cottesloe (T)                                      | Collie (S)                       | Kondinin (S)                             | Upper Gascoyne (S)          |
| Mosman Park (T)                                    | Dardanup (S)                     | Kulin (S)                                | CARNEGIE                    |
| Nedlands (C)                                       | Donnybrook-Balingup (S)          | Lake Grace (S)                           |                             |
| Peppermint Grove (S)                               | Harvey (S)                       | MIDLANDS                                 | Cue (S)                     |
| Perth (C) – Inner                                  | VASSE                            | MOORE                                    | Meekatharra (S)             |
| Perth (C) – North<br>Perth (C) – Outer             |                                  | meene                                    | Mount Magnet (S)            |
| Perth (C) – South                                  | Augusta-Margaret River (S)       | Chittering (S)                           | Murchison (S)               |
| Perth (C) –  | Busselton (S)                    | Dandaragan (S)                           | Sandstone (S)               |
| Wembley-Coastal                                    | BLACKWOOD                        | Gingin (Š)                               | Wiluna (S)                  |
| EAST   |                                  | Moora (S)                                | Yalgoo (S)                  |
| METROPOLITAN                                       | Boyup Brook (S)                  | Victoria Plains (S)                      | GREENOUGH RIVER             |
| METROFOLITAN                                       | Bridgetown-Greenbushes (S)       | AVON                                     |                             |
| Bassendean (T)                                     |                                  |  | Carnamah (S)                |
| Bayswater (C)                                      | Manjimup (S)                     | Beverley (S)                             | Chapman Valley (S)          |
| Kalamunda (Ś)                                      | Nannup (S)                       | Cunderdin (S)                            | Coorow (S)<br>Geraldton (C) |
| Mundaring (S)                                      |                                  | Dalwallinu (S)                           | Greenough (S)               |
| Swan (S)   | LOWER GREAT                      | Dowerin (S)                              | Irwin (S)                   |
| NORTH  | SOUTHERN                         | Goomalling (S)                           | Mingenew (S)                |
| METROPOLITAN                                       | PALLINUP                         | Koorda (S)<br>Northam (T)                | Morawa (S)                  |
|  |                                  | Northam (S)                              | Mullewa (Ś)                 |
| Stirling (C) – Central                             | Broomehill (S)                   | Quairading (S)                           | Northampton (S)             |
| Stirling (C) – West                                | Gnowangerup (S)                  | Tammin (S)                               | Perenjori (S)               |
| Stirling (C) – South-Eastern                       | Jerramungup (S)<br>Katanning (S) | Toodyay (S)                              | Three Springs (S)           |
| Wanneroo (C)                                       | Kent (S)                         | Wongan-Ballidu (S)                       | PILBARA                     |
| SOUTH-WEST   | Kojonup (S)                      | Wyalkatchem (S)                          | DE GREY                     |
| METROPOLITAN                                       | Tambellup (S)                    | York (S)                                 | DE GREI                     |
|  | Woodanilling (S)                 | CAMPION                                  | East Pilbara (S)            |
| Cockburn (C)                                       | KING                             |  | Port Hedland (T)            |
| East Fremantle (T)                                 | NING                             | Bruce Rock (S)                           | FORTESCUE                   |
| Fremantle (C) – Inner<br>Fremantle (C) – Remainder | Albany (T)                       | Kellerberrin (S)                         | TORTESCOL                   |
| Kwinana (T)  | Albany (S)                       | Merredin (S)                             | Roebourne (S)               |
| Melville (C)                                       | Cranbrook (S)                    | Mount Marshall (S)                       | Ashburton (S)               |
| Rockingham (C)                                     | Denmark (S)                      | Mukinbudin (S)                           | KIMBERLEY                   |
| SOUTH-EAST   | Plantagenet (S)                  | Narembeen (S)<br>Nungarin (S)            |                             |
| METROPOLITAN                                       |                                  | Trayning (S)                             | ORD                         |
| Merker oernav                                      | UPPER GREAT                      | Westonia (S)                             | Halls Creek (S)             |
| Armadale (C)                                       | SOUTHERN                         | Yilgarn (S)                              | Wyndham-                    |
| Belmont (C)  | НОТНАМ                           | SOUTH-EASTERN                            | East Kimberley (S)          |
| Canning (C)  |                                  |  | FITZROY                     |
| Gosnells (C)                                       | Boddington (S)                   | LEFROY                                   | FITZROT                     |
| Serpentine-Jarrahdale (S)                          | Brookton (S)                     |  | Broome (S)                  |
| South Perth (C)                                    | Cuballing (S)                    | Coolgardie (S)<br>Kalgoorlie-Boulder (C) | Derby-West Kimberley (S)    |
| SOUTH-WEST   | Dumbleyung (S)                   | Laverton (S)                             | ,                           |
| DALE   | Narrogin (T)                     | Leonora (S)                              |                             |
|  | Narrogin (S)                     | Menzies (S)                              |                             |
| Mandurah (C)                                       | Pingelly (S)<br>Wagin (S)        | IOHNSTON                                 |                             |
| Waroona (S)  | Wagin (S)<br>Wandering (S)       | JOHNSTON                                 |                             |
| Murray (S)   | West Arthur (S)                  | Dundas (S)                               |                             |
|  |                                  |  |                             |
| ,  | Wickepin (S)                     | Esperance (S)                            |                             |

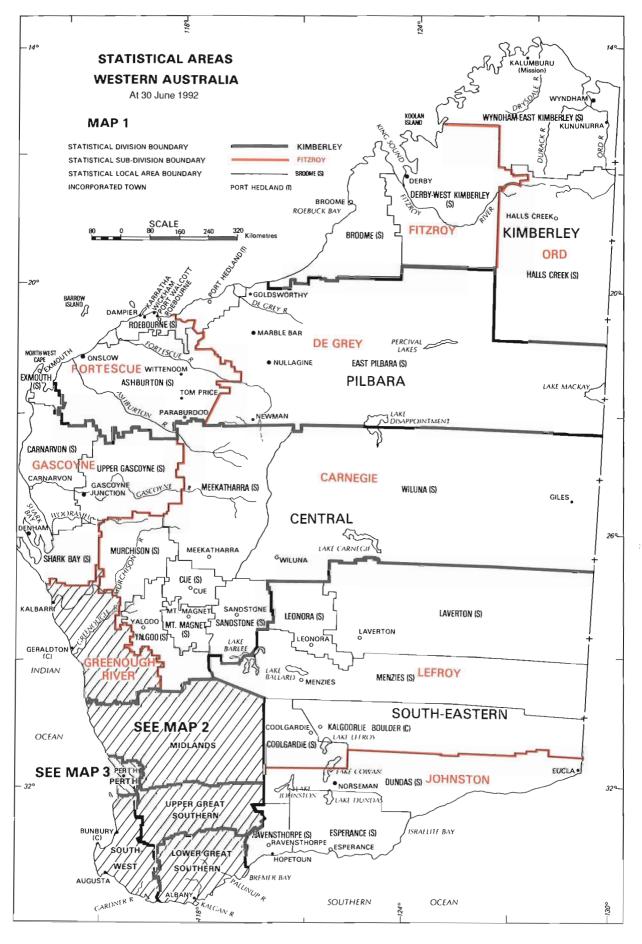
#### Statistical Divisions, Sub Divisions and Component Local Government Areas At June 1993

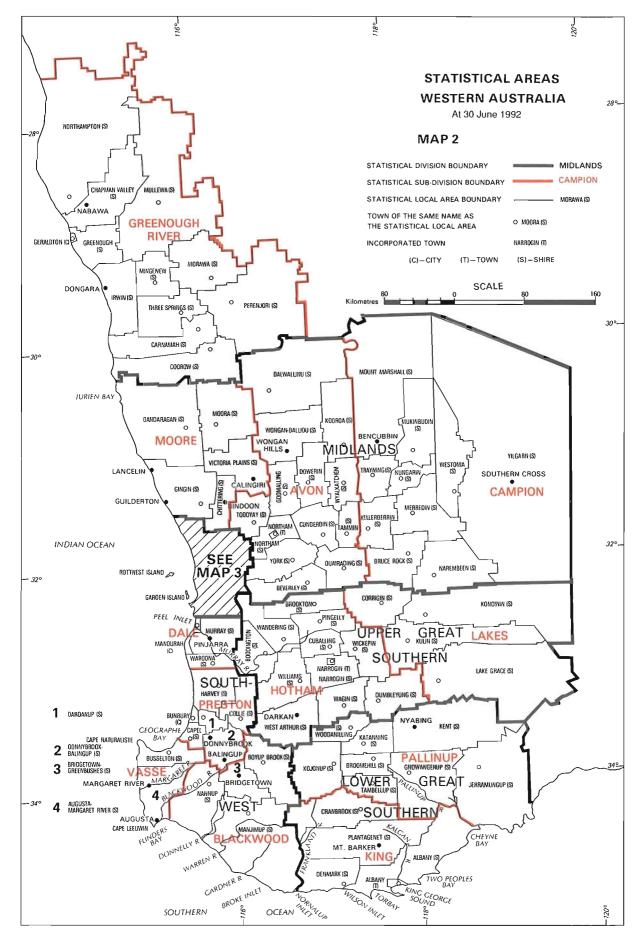
Statistical divisions are indicated thus: SOUTH-WEST; sub-divisions thus: BLACKWOOD; statistical local areas thus: Manjimup (S). Cities are marked (C), Towns (T) and Shires (S).

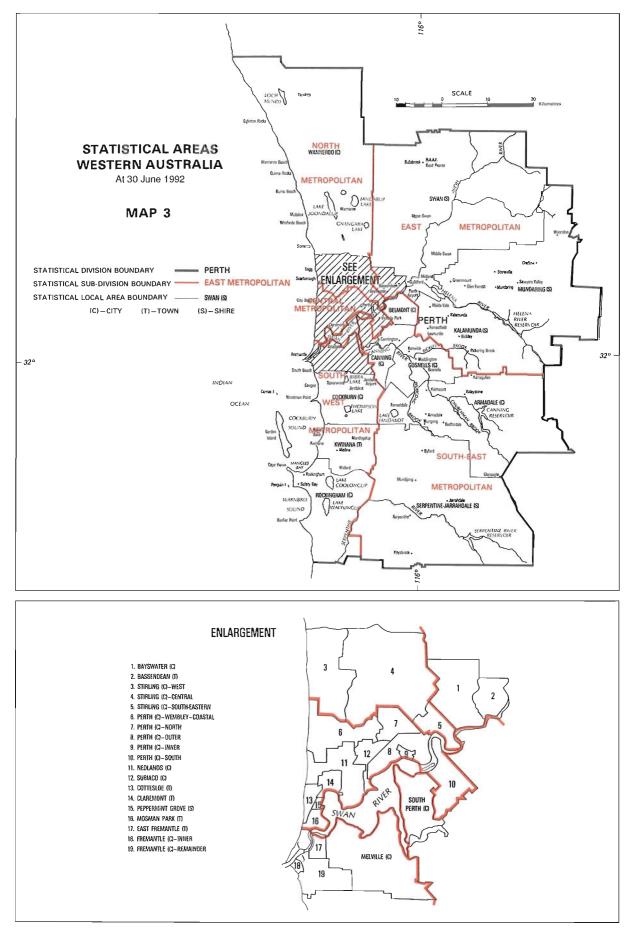
| Local | Government | Areas | At 30 | June 19 | 93 |
|-------|------------|-------|-------|---------|----|
|-------|------------|-------|-------|---------|----|

| Local government<br>rrea (a)          | Statistical division<br>in which situated | Local government<br>area (a)          | Statistical division<br>in which situated |
|---------------------------------------|---|---------------------------------------|---|
| Albany (T)                            | Lower Great Southern                      | Lake Grace                            | Upper Great Southern                      |
| Albany                                | Lower Great Southern                      | Laverton                              | South-Eastern                             |
| Armadale (C)                          | Perth                                     | Leonora                               | South-Eastern                             |
| Ashburton                             | Pilbara                                   | Mandurah(C)                           | South-West                                |
| Augusta-Margaret River                | South-West                                | Manjimup                              | South-West                                |
| Bassendean (T)                        | Perth                                     | Meekatharra                           | Central                                   |
| Bayswater (C)                         | Perth                                     | Melville (C)                          | Perth                                     |
| Belmont (C)                           | Perth                                     | Menzies                               | South-Eastern                             |
| Beverley                              | Midlands                                  | Merredin                              | Midlands                                  |
| Boddington<br>Bouwn Brook             | Upper Great Southern<br>South-West        | Mingenew<br>Moora                     | Central<br>Midlanda                       |
| Boyup Brook<br>Bridgetown-Greenbushes | South-West                                | Morawa                                | Midlands<br>Central                       |
| Brookton                              | Upper Great Southern                      | Mosman Park (T)                       | Perth                                     |
| Broome                                | Kimberley                                 | Mount Magnet                          | Central                                   |
| Broomehill                            | Lower Great Southern                      | Mount Marshall                        | Midlands                                  |
| Bruce Rock                            | Midlands                                  | Mukinbudin                            | Midlands                                  |
| Bunbury (C)                           | South-West                                | Mullewa                               | Central                                   |
| Busselton                             | South-West                                | Mundaring                             | Perth                                     |
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