



1995

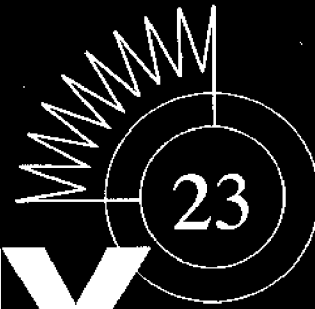
*WESTERN AUSTRALIAN  
YEAR BOOK*

This page was added on 11 January 2013 to include the Disclaimer below.

No other amendments were made to this product.

#### **DISCLAIMER**

Users are warned that this historic issue of this publication series may contain language or views which, reflecting the authors' attitudes or that of the period in which the item was written, may be considered to be inappropriate or offensive today.



# APPENDIX

and

# Index

## Chapter 23

# APPENDIX

---

Contents	Page
ARTICLES PUBLISHED IN PREVIOUS ISSUES (a)	349
STATISTICAL DIVISIONS, SUB DIVISIONS AND COMPONENT LOCAL GOVERNMENT AREAS AT DECEMBER 1994	353
LOCAL GOVERNMENT AREAS AT 30 JUNE 1993	354
MAPS PUBLISHED IN PREVIOUS ISSUES (a)	358
PUBLICATIONS OF THE WESTERN AUSTRALIAN OFFICE OF THE AUSTRALIAN BUREAU OF STATISTICS	359



## Chapter 23

# APPENDIX

### ARTICLES PUBLISHED IN PREVIOUS ISSUES (a)

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
Aboriginal population, history of	1984, pp. 1-8
Agriculture, Institute of, University of Western Australia	1975, pp. 217-8
Air pollution and the weather	1975, pp. 63-5
Albany, Port of	1971, pp. 449-51
ANZAAS Congress: Perth, 1973	1973, pp. 562-4
Australian Security Commissions Regulatory Initiatives Protect Investors	1993, p. 338
Australian Stock Exchange (Perth) Ltd.	1989, pp. 257-9
Basic wage, historical summary—	
Commonwealth	1968, pp. 396-401
State	1968, pp. 403-5
Bicycles in Western Australia	1993, p. 308
Burt, Sir Archibald – A Colonial Legal Eagle	1993, p. 23
Captain Fremantle's Report of Arrival of First Settlers, text of	1976, pp. 541-2
Captain Stirling's 'Narrative of Operations', text of	1974, pp. 533-41
Census of Wholesale Establishments, 1968-69	1976, pp. 434-7
Censuses of population and housing, 1911 to 1966	1972, pp. 547-70
Census of population and housing, 1991	1992, pp. 6-7
Centenary of the discovery of the Collie coalfields	1983, pp. 393-7
Climatic Extremes of Western Australia	1993, p. 37
Community Welfare, Department for, history of	1981, pp. 135-9
Computer Service Centre, Perth	1969, p. 504
Conservation of the fauna	1976, pp. 93-5
Conservation of the flora	1975, pp. 78-80
Court, Hon. Richard, MLA, Premier of Western Australia	1993, p. 86
Cowan, Edith – A Great Dame	1993, p. 25
Crime Victims Survey	1993, pp. 157-8
Crown Law Department, history of	1983, pp. 129-31
Dance Triennium, 1990-92	1992, pp. 6-7
Disability Reform Package – Focus on Ability	1993, p. 355
Education Department, history of	1972, pp. 117-21
Electoral Divisions (Commonwealth)	1971, pp. 97-8
Electoral Divisions (Commonwealth), origin of name of	1970, p. 530
Electoral Provinces and Electoral Districts (State)	1976, pp. 116-17
Esperance, Port of	1973, pp. 444-6
Exploration in Western Australia	1975, pp. 9-28
Export price index	1970, p. 507
Fisheries and Wildlife, Department of, history of	1984, pp. 121-4
Flag of Western Australia, history	1984, p. 120
Flora of Western Australia—	
Acacia	1965, pp. 59-60
'Christmas tree' ( <i>Nuytsia floribunda</i> )	1962, p. 51

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
<i>Flora of Western Australia—continued</i>	
Economic value of the flora	1968, pp. 54-5
Grasses	1976, pp. 69-72
Orchids	1968, pp. 48-9
Proteaceae family in Western Australia	1974, pp. 52-4
Rutaceae family in Western Australia	1972, pp. 53-5
Special features of the flora	1962, pp. 51-2
Food Hygiene	1993, p. 142
Forests Department, history of	1976, pp. 125-7
Fremantle, Port of	1970, pp. 441-3
Geraldton, Port of	1972, pp. 447-9
Government administration, Commonwealth	1973, p. 542
Governor Darling's letter to the Earl of Bathurst, text of	1974, pp. 541-2
Governors and Acting Governors of Western Australia	1982, pp. 121-2
Governor Stirling's Commission dated 4 March 1831, text of	1979, pp. 12-16
Greenhouse Effect	1993, p. 41
Heritage Trails of the Goldfields	1993, p. 383
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	1990, pp. 1-5
Housing and Construction, historical review	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
Kalgoorlie/Boulder: Events for Everyone	1993, p. 382
Kuri Bay pearls	1974, pp. 558-9
Labour Force Survey	1971, pp. 508-10
Land settlement schemes, government	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	1992, pp. 5-7
Linseed, area and production	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
Measuring Unemployment	1993, p. 347
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	1990, pp. 290-8
Mines, Department of, history of	1977, pp. 117-25
New Perth Children's Court, The	1993, p. 154

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
One Hundred Years of Responsible Government ... ..	1990, pp. 70-83
Operation Isobella: a rescue that beat the odds ... ..	1993, pp. 164-6
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 ... ..	1980, pp. 43-5
Pest control without insecticides ... ..	1973, pp. 93-5
Pesticides, effect on beneficial forms of life ... ..	1969, pp. 90-1
Physical features and geology ... ..	1986, pp. 7-30
Physical features of Western Australia ... ..	1993, p. 35
Poisonous plants of Western Australia ... ..	1970, pp. 56-9
Police Department, history of ... ..	1973, pp. 113-16
Population in local government areas ... ..	1972, pp. 542-3
Port Hedland, Port of ... ..	1974, pp. 435-8
Premier's Department, history of ... ..	1974, pp. 109-13
Principal events of 1970 ... ..	1971, p. 571
Public Works Department, history of ... ..	1971, pp. 116-9
Pyrites, production of ... ..	1973, pp. 393-4
Railways—	
Origin and development ... ..	1968, pp. 360-1
Private ... ..	1965, p. 365
Timber ... ..	1968, pp. 363-4
Rainfall in agricultural areas, 1969 ... ..	1970, p. 529
Real Estate in 1992 ... ..	1993, pp. 282-3
Rents (weekly) of unfurnished houses and flats ... ..	1973, p. 216
Revamping Secondary Schooling ... ..	1993, p. 176
Ross River Virus— Western Australia ... ..	1993, p. 140
Royal Commission into Commercial Activities of Government and Other Matters	1993, pp. 99-100
Satellites and Meteorology ... ..	1973, pp. 51-4
Settlement at King George's Sound, early history of ... ..	1977, pp. 556-9
Ships of the Dutch East India Company, The ... ..	1993, p. 21
Showing Western Australia to the World ... ..	1993, p. 318
South-West Statistical Division Profile ... ..	1986, pp. 260-9
Sport and Recreation, Department of ... ..	1985, pp. 115-123
Sporting organisations ... ..	1970, pp. 196-200
State Basic Wage ... ..	1976, pp. 485-7
State Government Departments, functions of ... ..	1972, pp. 108-16
Survey of Small Business Opinion ... ..	1993, pp. 294-5
Third Party Claims Tribunal ... ..	1973, p. 254
Tornadoes ... ..	1970, pp. 48-51
Tourism, Department of, history of ... ..	1975, pp. 132-6
Trade, constitutional provisions and legislation ... ..	1973, p. 412
Trade, historical summary of ... ..	1967, pp. 346-7
Trade, overseas, encouragement of ... ..	1973, pp. 412-13
Transport Deregulation ... ..	1993, p. 304
Treasury Department, history of ... ..	1982, pp. 134-9
Tropical cyclones ... ..	1983, pp. 52-61
University — principal benefactions ... ..	1969, p. 173
Use of pesticides in Western Australia ... ..	1971, pp. 87-90

## 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
Waterfront Reform	1993, p. 312
West Australian Ballet	1989, pp. 140-1
West Australian Economy, 1959 to 1973	1973, pp. 565-71
Western Australia: History of,	1989, pp. 1-10
Western Australia in Peril	1992, p. 1-10
Western Australian Economy, Retrospect and Prospect	1984, pp. 471-7
Western Australian Tourism Commission Offices	1993, p. 319
Wheat, development of production	1968, p. 270

(a) Commencing with the present series: No. 1 1957

**STATISTICAL DIVISIONS, SUB DIVISIONS  
AND COMPONENT LOCAL GOVERNMENT AREAS  
AT DECEMBER 1994**

<b>PERTH</b>	<b>PRESTON</b>	<b>LAKES</b>	<b>CENTRAL</b>
<b>CENTRAL METROPOLITAN</b>	Bunbury (C) Capel (S) Collie (S) Dardanup (S) Donnybrook-Balingup (S) Harvey (S)	Corrigin (S) Kondinin (S) Kulin (S) Lake Grace (S)	<b>GASCOYNE</b>  Carnarvon (S) Exmouth (S) Shark Bay (S) Upper Gascoyne (S)
Cambridge (T) Claremont (T) Cottesloe (T) Mosman Park (T) Nedlands (C) Peppermint Grove (S) Perth (C) - Inner Perth (C) - Remainder Subiaco (C) Victoria Park (T) Vincent (T)	<b>VASSE</b>  Augusta-Margaret River (S) Busselton (S)	<b>MIDLANDS</b>  <b>MOORE</b> Chittering (S) Dandaragan (S) Gingin (S) Moora (S) Victoria Plains (S)	<b>CARNEGIE</b>  Cue (S) Meekatharra (S) Mount Magnet (S) Murchison (S) Ngaanyatjarraku (S) Sandstone (S) Wiluna (S) Yalgoo (S)
<b>EAST METROPOLITAN</b>	<b>BLACKWOOD</b>  Boyup Brook (S) Bridgetown-Greenbushes (S) Manjimup (S) Nannup (S)	<b>AVON</b>  Beverley (S) Cunderdin (S) Dalwallinu (S) Dowerin (S) Goomalling (S) Koorda (S) Northam (T) Northam (S) Quairading (S) Tammin (S) Toodyay (S) Wongan-Ballidu (S) Wyalkatchem (S) York (S)	<b>GREENOUGH RIVER</b>  Carnamah (S) Chapman Valley (S) Coorow (S) Geraldton (C) Greenough (S) Irwin (S) Mingenew (S) Morawa (S) Mullewa (S) Northampton (S) Perenjori (S) Three Springs (S)
Bassendean (T) Bayswater (C) Kalamunda (S) Mundaring (S) Swan (S)	<b>LOWER GREAT SOUTHERN</b>		
<b>NORTH METROPOLITAN</b>	<b>PALLINUP</b>  Broomehill (S) Cnowangerup (S) Jerramungup (S) Katanning (S) Kent (S) Kojonup (S) Tambellup (S) Woodanilling (S)	<b>CAMPION</b>  Bruce Rock (S) Kellerberrin (S) Merredin (S) Mount Marshall (S) Mukinbudin (S) Narembeen (S) Nungarin (S) Trayning (S) Westonia (S) Yilgarn (S)	<b>PILBARA</b>  <b>DE GREY</b>  East Pilbara (S) Port Hedland (T)
<b>SOUTH WEST METROPOLITAN</b>	<b>KING</b>  Albany (T) Albany (S) Cranbrook (S) Denmark (S) Plantagenet (S)		<b>FORTESCUE</b>  Ashburton (S) Roebourne (S)
Cockburn (C) East Fremantle (T) Fremantle (C) - Inner Fremantle (C) - Remainder Kwinana (T) Melville (C) Rockingham (C)	<b>UPPER GREAT SOUTHERN</b>	<b>SOUTH EASTERN</b>	<b>KIMBERLEY</b>
<b>SOUTH EAST METROPOLITAN</b>	<b>HOTHAM</b>  Brookton (S) Cuballing (S) Dumbleyung (S) Narrogin (T) Narrogin (S) Pingelly (S) Wagin (S) Wandering (S) West Arthur (S) Wickepin (S) Williams (S)	<b>LEFROY</b>  Coolgardie (S) Kalgoorlie/Boulder (C) Laverton (S) Leonora (S) Menzies (S)	<b>ORD</b>  Halls Creek (S) Wyndham- East Kimberley (S)
Armadale (C) Belmont (C) Canning (C) Gosnells (C) Serpentine-Jarrahdale (S) South Perth (C)		<b>JOHNSTON</b>  Dundas (S) Esperance (S) Ravensthorpe (S)	<b>FITZROY</b>  Broome (S) Derby-West Kimberley (S)
<b>SOUTH WEST</b>			
<b>DALE</b>  Boddington (S) Mandurah (C) Murray (S) Waroona (S)			

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 1993

<i>Local government area (a)</i>	<i>Statistical division in which situated</i>	<i>Local government area (a)</i>	<i>Statistical division in which situated</i>
Albany (T)	Lower Great Southern	Kwinana (T)	Perth
Albany	Lower Great Southern	Lake Grace	Upper Great Southern
Armada (C)	Perth	Laverton	South-Eastern
Ashburton	Pilbara	Leonora	South-Eastern
Augusta-Margaret River	South-West	Mandurah (C)	South-West
Bassendean (T)	Perth	Manjimup	South-West
Bayswater (C)	Perth	Meekatharra	Central
Belmont (C)	Perth	Melville (C)	Perth
Beverley	Midlands	Menzies	South-Eastern
Boddington	Upper Great Southern	Merredin	Midlands
Boypup Brook	South-West	Mingenew	Central
Bridgetown-Greenbushes	South-West	Moorra	Midlands
Brookton	Upper Great Southern	Morawa	Central
Broome	Kimberley	Mosman Park (T)	Perth
Broomehill	Lower Great Southern	Mount Magnet	Central
Bruce Rock	Midlands	Mount Marshall	Midlands
Bunbury (C)	South-West	Mukinbudin	Midlands
Busselton	South-West	Mullewa	Central
Cambridge (T)	Perth	Mundaring	Perth
Canning (C)	Perth	Murchison	Central
Capel	South-West	Murray	South-West
Carimah	Central	Nannup	South-West
Carnarvon	Central	Narembeen	Midlands
Chapman Valley	Central	Narrogin (T)	Upper Great Southern
Chittering	Midlands	Narrogin	Upper Great Southern
Claremont (T)	Perth	Nedlands (C)	Perth
Cockburn (C)	Perth	Ngaanyatjaraku	Central
Collie	South-West	Northam (T)	Midlands
Coolgardie	South-Eastern	Northam	Midlands
Coorow	Central	Northampton	Central
Corrigin	Upper Great Southern	Nungarin	Midlands
Cottesloe (T)	Perth	Peppermint Grove	Perth
Cranbrook	Lower Great Southern	Perenjori	Central
Cuballing	Upper Great Southern	Perth (C)	Perth
Cue	Central	Pingelly	Upper Great Southern
Cunderdin	Midlands	Plantagenet	Lower Great Southern
Dalwallinu	Midlands	Port Hedland (T)	Pilbara
Dandaragan	Midlands	Quairading	Midlands
Dardanup	South-West	Ravensthorpe	South-Eastern
Denmark	Lower Great Southern	Rockingham (C)	Perth
Derby-West Kimberley	Kimberley	Roebourne	Pilbara
Donnybrook-Balingup	South-West	Sandstone	Central
Dowerin	Midlands	Serpentine-Jarrahdale	Perth
Dumbleyung	Upper Great Southern	Shark Bay	Central
Dundas	South-Eastern	South Perth (C)	Perth
East Fremantle (T)	Perth	Stirling (C)	Perth
East Pilbara	Pilbara	Subiaco (C)	Perth
Esperance	South-Eastern	Swan	Perth
Exmouth	Central	Tambellup	Lower Great Southern
Fremantle (C)	Perth	Tammin	Midlands
Geraldton (C)	Central	Three Springs	Central
Gingin	Midlands	Toodyay	Midlands
Gnowangerup	Lower Great Southern	Trayning	Midlands
Goomalling	Midlands	Upper Gascoyne	Central
Gosnells (C)	Perth	Victoria Park (T)	Perth
Greenough	Central	Victoria Plains	Midlands
Halls Creek	Kimberley	Vincent (T)	Perth
Harvey	South-West	Wagin	Upper Great Southern
Irwin	Central	Wandering	Upper Great Southern
Jerramungup	Lower Great Southern	Wanneroo (C)	Perth
Kalamunda	Perth	Waroona	South-West
Kalgoorlie-Boulder (C)	South-Eastern	West Arthur	Upper Great Southern
Katanning	Lower Great Southern	Westonia	Midlands
Kellerberrin	Midlands	Wickepin	Upper Great Southern
Kent	Lower Great Southern	Williams	Upper Great Southern
Kojonup	Lower Great Southern	Wiluna	Central
Kondinin	Upper Great Southern	Wongan-Ballidu	Midlands
Koorda	Midlands	Woodanilling	Lower Great Southern
Kulin	Upper Great Southern	Wyalkatchem	Midlands

(a) Shire, unless marked (C) indicating city, or (T) indicating Town.

# STATISTICAL AREAS WESTERN AUSTRALIA

At 30 June 1993

MAP 1






STATISTICAL DIVISION BOUNDARY  
STATISTICAL SUB-DIVISION BOUNDARY  
STATISTICAL LOCAL AREA BOUNDARY  
INCORPORATED TOWN

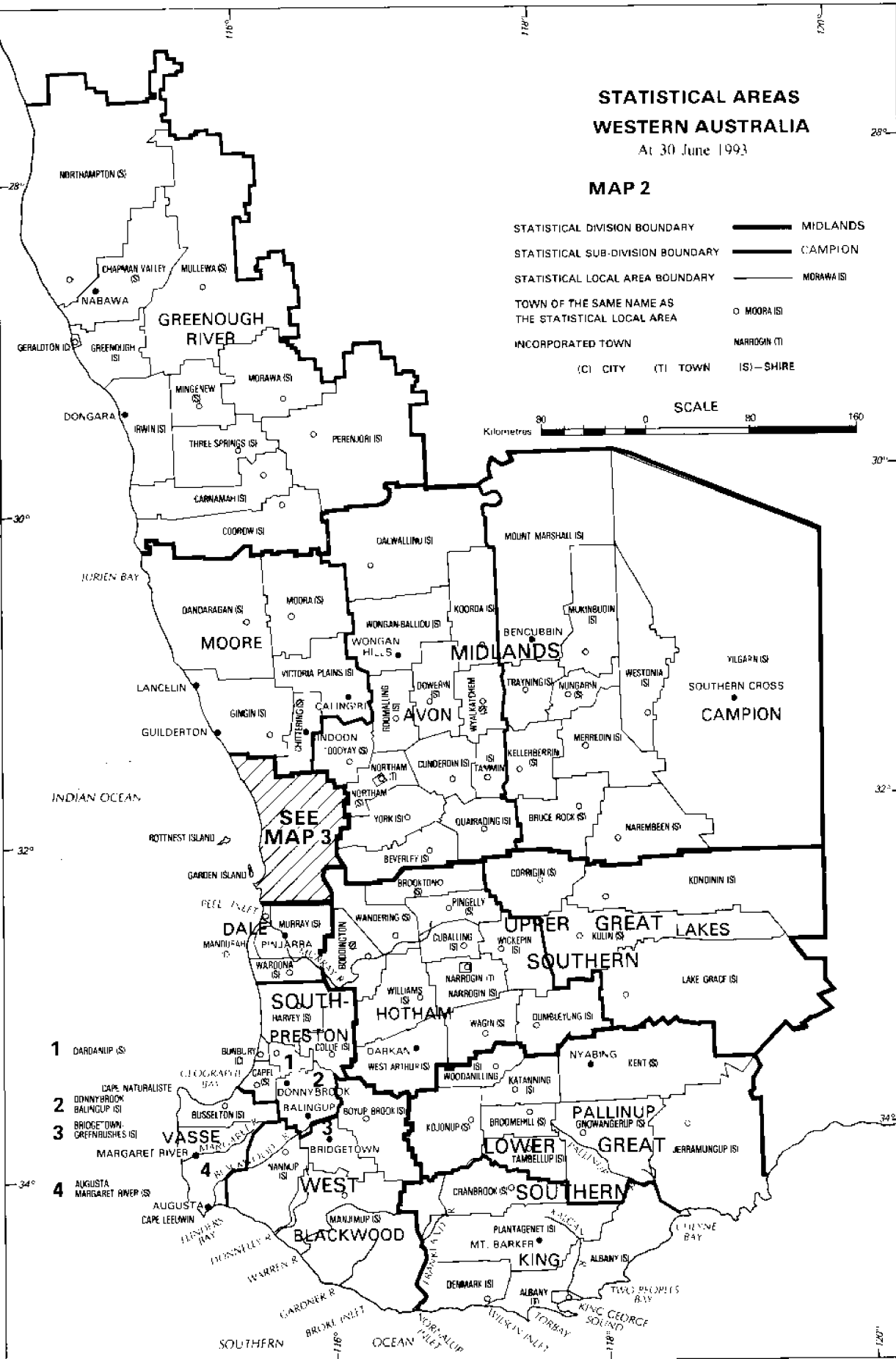
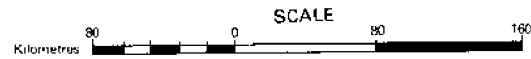
KIMBERLEY  
FITZROY  
BROOME (S)  
PORT HEDLAND (M)

SCALE  
0 80 160 240 320 Kilometres



At 30 June 1993

STATISTICAL DIVISION BOUNDARY		MIDLANDS
STATISTICAL SUB-DIVISION BOUNDARY		CAMPION
STATISTICAL LOCAL AREA BOUNDARY		MORAWA (S)
TOWN OF THE SAME NAME AS THE STATISTICAL LOCAL AREA		MORAWA (S)
INCORPORATED TOWN		NARROGIN (T)
(C) CITY	(T) TOWN	(S) — SHIRE



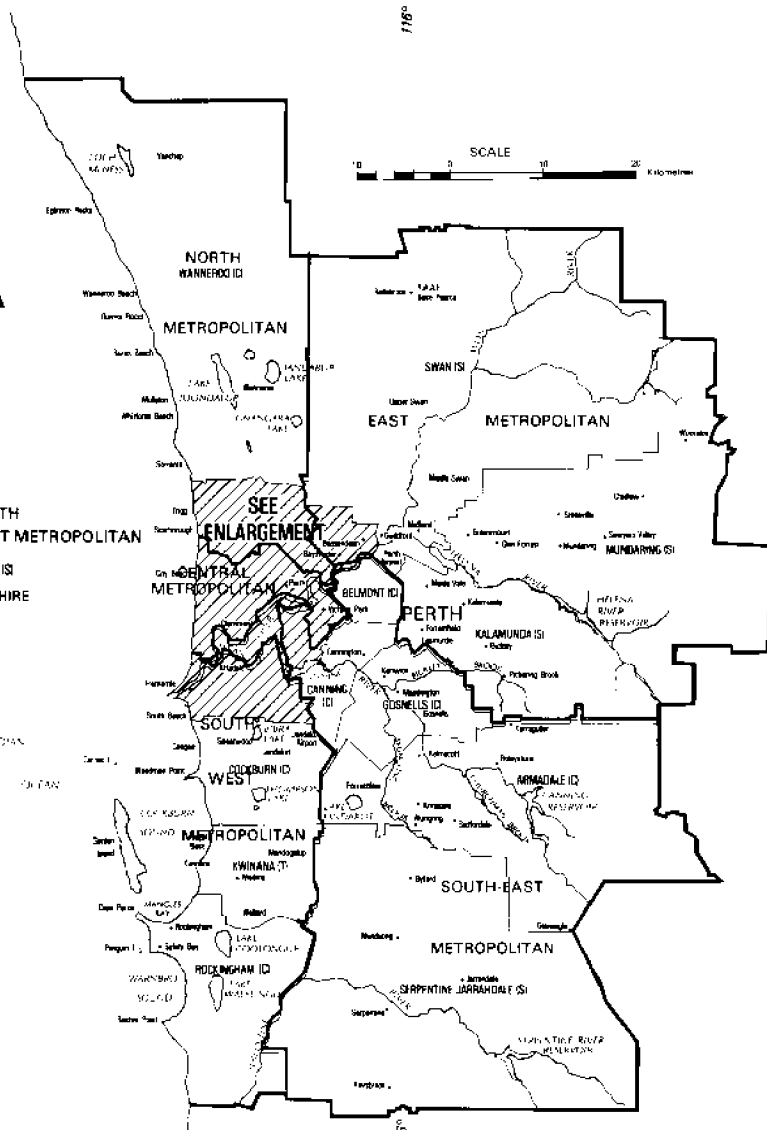


# **STATISTICAL AREAS WESTERN AUSTRALIA**

At 30 June 1993

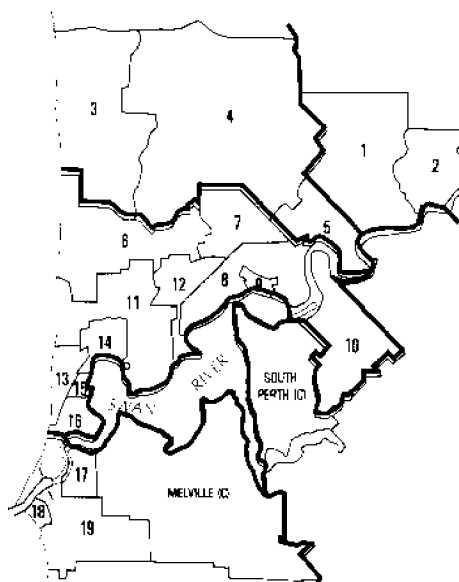
## **MAP 3**

STATISTICAL DIVISION BOUNDARY ——— PERTH  
STATISTICAL SUB-DIVISION BOUNDARY ——— EAST METROPOLITAN  
STATISTICAL LOCAL AREA BOUNDARY ——— SWAN IS  
(C) — CITY (T) — TOWN (S) — SHIRE



## **ENLARGEMENT**

1. BAYSWATER ID
2. BASSEDAAN (T)
3. STIRLING ID—WEST
4. STIRLING ID—CENTRAL
5. STIRLING ID—SOUTH-EASTERN
6. PERTH ID—WEMBLEY COASTAL
7. PERTH ID—NORTH
8. PERTH ID—OUTER
9. PERTH ID—INNER
10. PERTH ID—SOUTH
11. MEDLANDS ID
12. SUBIACO ID
13. COTTESLOE (T)
14. CLAREMONT (T)
15. PEPPERMINT GROVE (S)
16. MOSMAY PARK (T)
17. EAST FREMANTLE (T)
18. FREMANTLE ID—INNER
19. FREMANTLE ID—REMAINDER



## MAPS PUBLISHED IN PREVIOUS ISSUES (a)

Map	Year Book
Agricultural Areas — Growing Season ... ..	1982, p. 64
Air routes at 31 December 1956 ... ..	1957, p. 289
Air routes at 30 June 1969 ... ..	1970, <i>between</i> p. 448 and p. 449
Areas of current development ... ..	1970, <i>facing</i> p. 336
Comprehensive Agricultural Areas Water Supply Scheme ... ..	1985, p. 258
Electoral Boundaries (Federal) ... ..	1989 p. 78
Electoral Provinces and Electoral Districts (State) ... ..	1969, <i>between</i> p. 96 and p. 97
Electricity supplies ... ..	1967, <i>facing</i> p. 320
Epicentres of large earthquakes ... ..	1971, p. 33
General map of the State showing statistical divisions, local government areas, roads, railways, air routes and isohyets ... ..	1973, <i>inside back</i> cover
General map of the State showing physical features, roads, railways and airfields ... ..	<i>inside back</i> cover
Geological sketch map ... ..	1986, p. 12
Mineral production, major centres ... ..	1990, p. 203
Perth Statistical Division ... ..	1978, <i>facing</i> p. 112
Port of Fremantle (Outer and Inner Harbour) ... ..	1970, <i>facing</i> p. 448
Port of Port Hedland ... ..	1974, p. 437
Principal ports, Western Australia ... ..	1989 p. 212
Production, main areas of ... ..	1975, <i>inside back</i> cover
Railways and road services — routes operated ... ..	1967, <i>facing</i> p. 384
Railways road services — routes operated ... ..	1964, p. 354
Rainfall ... ..	1969, <i>facing</i> p. 32
Rainfall in agricultural areas, 1969 ... ..	1970, p. 529
Roads, main and important secondary ... ..	1968, <i>facing</i> p. 368
Sedimentary basins and Precambrian blocks ... ..	1986, p. 17
South-West Irrigation Districts ... ..	1985, p. 262
South-West of Western Australia showing median rainfall, July-September ... ..	1986, p. 47
South-West of Western Australia showing decile 1 rainfall, July-September ... ..	1986, p. 47
South-West of Western Australia showing predominant agricultural activities ... ..	1986, <i>facing</i> p. 300
The forest estate ... ..	1986, <i>facing</i> p. 268
Tracks of tropical cyclones (1975-1982) ... ..	1983, p. 60
Vegetation Provinces of Western Australia ... ..	1974, p. 56
Wettest six monthly period of year ... ..	1986, p. 34

(a) Commencing with the present series: No. 1 — 1957

**PUBLICATIONS OF THE WESTERN AUSTRALIAN OFFICE OF THE  
AUSTRALIAN BUREAU OF STATISTICS**

Publications are issued annually unless marked q (quarterly), m (monthly) or irr (irregular).

<i>Catalogue number</i>	<i>Price</i>		<i>Publication</i>
<b>CLASSIFICATION AND WORK MANUALS</b>			
1205.5	\$7.50	<i>Discont'd</i>	Cause of Death Certification
<b>GENERAL—</b>			
1300.5	\$26.50		Western Australian Year Book (Softcover)
1302.5	\$9.50	<i>Discont'd</i>	Western Australian Facts and Figures (Previously Western Australian Pocket Year Book)
1303.5	\$15.00	<i>Discont'd</i>	Local Government
1305.5	\$11.00		Monthly Summary of Statistics m
1306.5	\$1.00		Western Australia in Brief
1307.5	\$6.50	<i>Discont'd</i>	Economic Indicators m
<b>POPULATION, VITAL STATISTICS, MIGRATION AND SOCIAL—</b>			
3203.5	\$13.80		Estimated Resident Population By Age and Sex in Statistical Local Areas
3204.5	\$10.70		Estimated Resident Population in Statistical Local Areas: Preliminary
3311.5	\$27.50		Demography
3312.5	\$14.80	<i>Discont'd</i>	Deaths
4111.5	\$15.00		Arts and Crafts Purchasing and Participation irr
4501.5	\$11.70	<i>Discont'd</i>	Court Statistics: Higher Criminal Courts
4503.5	\$7.50	<i>Discont'd</i>	Court Statistics: Childrens Courts
4504.5	\$18.40	<i>Discont'd</i>	Court Statistics: Summary of Criminal Court Proceedings
4506.5	\$15.30	<i>Discont'd</i>	Crime Victims
<b>CENSUS OF POPULATION AND HOUSING 1991 —</b>			
2701.5	\$20.00		First Counts for Statistical Local Areas irr
2710.5	\$85.00		Census Characteristics of States, Western Australia irr
2730.5	\$25.00		1991 Census Counts for Small Areas irr
2803.5	P.O.A.		1991 Census Ethnicity
<b>PRICES</b>			
6410.5	\$10.00		Price Index of Western Australian Produced Hardwoods q
<b>AGRICULTURE, FISHING AND FORESTRY—</b>			
7106.5	\$1.00	<i>Discont'd</i>	Western Australian Agriculture in Brief
7111.5	\$10.70		Principal Agricultural Commodities: Preliminary
7112.5	\$16.00	<i>Discont'd</i>	Selected Agricultural Commodities: Preliminary
7113.5	\$14.60		Agriculture
7120.5	\$16.30	<i>Discont'd</i>	Agriculture Statistics: Selected Small Area Data
7221.5	\$16.30	<i>Discont'd</i>	Livestock and Livestock Products
7330.5	\$20.40	<i>Discont'd</i>	Summary of Crops
7303.5	\$16.30		Value of Agricultural Commodities Produced
<b>MANUFACTURING AND MINING —</b>			
8221.5	\$16.30		Manufacturing Industry
8401.5	\$15.00	<i>Discont'd</i>	Mining
8412.0	\$10.20		Actual and Expected Private Mineral Exploration, Australia q
<b>SERVICE INDUSTRIES—</b>			
8622.5	\$15.00	<i>Discont'd</i>	Retail Industry: Details of Operations
8623.5	\$15.00		Retail and Selected Service Industries: Small Area Statistics
8635.5	\$20.00		Tourist Accommodation q
<b>BUILDING AND CONSTRUCTION —</b>			
8705.5	\$19.40		Estimated Stocks of Dwellings in Census Collection Districts and Statistical Local Areas
8731.5	\$10.70		Building Approvals m
8732.5	\$5.10	<i>Discont'd</i>	Building Approvals - Private Sector, Perth Statistical Division m
8741.5	\$10.70		Dwelling Unit Commencements m
8752.5	\$10.70		Building Activity q
<b>TRANSPORT—</b>			
9215.5	\$13.50		Bicycle Usage and Safety irr
9303.5	\$7.60	<i>Discont'd</i>	Motor Vehicle Registrations m
9304.5	\$10.70	<i>Discont'd</i>	Motor Vehicle Registrations



# INDEX

## A

Aboriginal Family Information Service	80
Aboriginal Legal Service	136
Abuse in Families Campaign	79
Acquired Immune Deficiency Syndrome	120
Age	
at death	96
of bridegrooms and brides	100
composition	88, 90
Age pensions	107
Agricultural Finance Survey	199
Agricultural statistics	199
Agriculture	212
establishments	200-201
estimated value of operations	202
financial statistics	201
value of commodities produced	199, 330
Agri-dome farm	183
AIDS	
<i>See</i> Acquired Immune Deficiency Syndrome	
Air passenger movements	334
Air services	
<i>See</i> Transport	
Alcohol and Drug Authority	124
Amphibia	
<i>See</i> Frogs	
Apiary	
<i>See</i> Beekeeping	
Apples	208-209
Art galleries	161, 170
Artificial fertiliser	211
Atmospheric quality of Perth CBD	48
Australian Loan Council	271-273
Australian Red Cross	127
Austudy	156-157
Average retail prices	299
Average weekly earnings	289
Award rates of pay	340

## B

Bacon and Ham	332
Bananas	210
Banks	277
Barley	203, 330
Barron Films	166
Baseball	177, 180

Basketball	177
Beekeeping	214-215
Benefits	
health	110
migrants and refugees	110
monetary	107
special	110
Best Start	78
Bicycle services	
<i>See</i> Transport	
Birds	40-41
Births	94-95, 326-327
ex-nuptial	94-95
registration	94
Body mass index	128-129
Breast cancer	121
Bricks	332
Building	
alterations and additions	333
non-residential	333
residential	333
completed	333
Building societies	276
Bus and ferry services	
<i>See</i> Transport	
Bush Fires Board	140

## C

Cable water-skiing	184
Carer's pensions	111
Cattle	329
dairy	214
meat	213
slaughtering	214
Cheese	332
Children's Courts	135
Citrus fruit	208
Climate	28-30
Perth Statistical Division	315
Coal	331
Cohunu Koala Park	183
Commonwealth Government	
Consolidated Revenue Fund	343
Commonwealth Grants Commission	271-273
Community Services Industry Study	75
Conservation	34-39
Conservation Parks	36-37

- Construction  
 alterations and additions 235  
 commercial 235  
 unit construction 234  
 Consumer Price Index 297-298, 341  
 Coroner's Courts 134  
 Courts of Petty Sessions 134  
 Credit unions 276-277  
 Cricket 176  
 Crops 203, 205, 210, 329-330  
*See also specific crops*  
 Culture and leisure activities 162  
 Culture and the Arts 161  
 Currency 277  
 Curriculum 149  
 Customs tariff 334
- D**
- Deaths 95-98, 327  
 causes of 95, 97  
 infant 96, 98  
 perinatal 98  
 Dependents pensions 110  
 Disability pension 110  
 Disability pension (veterans) 328  
 Disability support 108  
 District Law Courts 134  
 Divorces 100-101, 327  
 Domestic travel 263  
 Double Orphan's pensions 110
- E**
- Earnings  
 by industry 291  
*See income*  
 East Perth redevelopment 319  
 Economy  
 indicators 188-189  
 performance 187-188  
 prospects 190-192  
 state accounts 193-194  
 Ecotourism 266-267  
 Education 147-148  
 Elections 55-56, 64  
 Emergency services 139  
 Employment  
 average weekly hours 287-288  
 by industry 287  
 generation 242  
 job vacancies 288  
 status 286
- Environmental protection policies 46-47  
 Environmental Protection Authority 46  
 Estimated Resident Population  
*See Population estimates*  
 Ex-nuptial births  
*See Births*  
 Excise revenue 334  
 Exploration of Western Australia  
*See History*  
 Exports 308-311, 335-339
- F**
- Family allowance 109, 328  
 Family Helpline 78  
 Family Law Courts 135  
 Family Planning Association 124  
 Family support 109  
 Fauna 38  
 Fertilisers 211  
 artificial 211  
 Festival of Perth 170  
 Finance  
*See Public Finance*  
*See Private Finance*  
 Financial institutions 276-278  
 Fire Brigade Board 139  
 Fisheries 216  
 value of catch 330  
 Flora 33-34  
 research 35  
 Flour 332  
 Foreign Trade Price Indexes 299  
 Forest production 215  
 Fringe benefits 110  
 Frogs 42-43  
 Fruit 208-210  
*See also specific fruits*
- G**
- Gold 331  
 Golf 180  
 Government 53  
 local 61, 64  
 State 56  
 Governor 53-54

## H

Harness racing	181
Hay	206, 330
Health Insurance	117
Health Insurance Commission	118
Health Insurance Survey	129
Higher Education Council	150
History	3-24
Hockey	176
Home Based Businesses	245
Horse racing	181
House Price Indexes	298
Housholds	71-73
Housing activity	233

## I

Imports	303-305, 308, 310-311, 339
Income	
average weekly earnings	289
Income support	107, 109-111
Industrial disputes	293, 340
Infant mortality	
number	327
rate	327
Inflation	195
Inner City Living	319
Interest rates	195
International trade	
concepts	312
pattern	303
statistical collection	305
Interstate trade	311

## J

Japan	304-307
Jeffery, Major General Philip Michael	53-54
<i>see also</i> Governor	
Job Start allowance	109
Job vacancies	288-289
Judicature	56
Jury system	135

## L

Labour costs	291-292
Labour force	283-284
Supplementary Surveys	288

Land management	34
Land use	202
Law and order	133
Law Reform Commission	135
Lawn bowls	177
Legal Aid	136
Legislation	56
Legislative Assembly	58
Legislative Council	57
Library Board of Western Australia	165
Life expectancy	99
Livestock	329
products	212-214
slaughtering	213-214
<i>See also</i> specific livestock	
Livestock products	215
Loan transactions	275
Local Courts	134
Local Government	
functions	65
system	61, 65
<i>Local Government Act 1960</i>	64
Long term unemployment	285
Lupins	205

## M

Mabo	62
<i>see also</i> Native Title	
Magistrates	134
Mammals	38-40
marine	40
terrestrial	39
Manufacturing	
employment	332
establishments	332
principal commodities produced	249, 332
statistics	249
turnover	332
Marine and freshwater fauna	44
Marine parks and reserves	37-38
Marital status	70
Marriages	99-100, 327
celebrants	100
median age	100
registration	94
<i>See also</i> divorce	
Medical benefits	117
Medicare	117
Migration	
overseas	102-103
Mineral production	224
Mining	221
Ministries	56
current	59
list of	55

Ministry of Sport and Recreation 175  
 Motocross 180  
 Motor rallying 181  
 Motor vehicles 253  
     registrations 253, 335  
     vehicles on register 335  
 Music 162

## N

National Health Surveys 127-129  
 National parks 35-36  
 Native Title 62  
     *see also* Mabo  
 Nature reserves 37  
 Netball 177  
 New capital expenditure 278-279  
 Newstart allowance 109  
 Nickel 221-222, 224, 226  
 Nurseries 211

## O

Oats 203, 330  
 Obituaries 181  
 Oilseeds 205  
 Orphan's pensions 110  
 Overseas arrivals and departures 102-103, 264-266

## P

Parent Help Centre 78  
 Parents and work commitments 73  
 Parks 39  
     Drysedale river 39, 41  
     Fitzgerald river 45  
     Marmion marine 45  
     National 45  
 Pastures 206  
 Pears 208  
 Pensions, benefits and allowances 328  
 Per cent for Art Scheme 167  
 Performing arts 162  
 Perth Aboriginal Medical Service 124  
 Perth Institute of Contemporary Arts 170  
 Perth Statistical Division 315, 318, 321  
     Profile 315  
 Pharmaceutical Benefits Scheme 112, 119  
 Physical features 27  
 Pigs 214, 329

Pioneer world 183  
 Police 137-139  
 Population 87, 91  
     Aboriginal and Torres Strait Islanders 90  
     age 88, 90  
     birthplace 88-89  
     estimated resident population 87-88, 91, 104, 326  
     migration 102-103, 326  
     natural increase 326  
     overseas arrivals and departures 102  
     religion 88-89, 100  
 Ports 260  
 Poultry 214-215  
 Pre-primary education 145  
 Premiers 53  
     definition of 55  
     list of 271  
 Premiers' conference 146  
 Primary education 277  
 Private finance 277  
     banks 277  
     building societies 277  
     credit unions 277  
     currency 276  
     government controls 276  
     legislation 299  
 Producer Price Indexes 236  
 Property market review 80  
 Protection and Care of Children 344  
 Public debt 344  
 Public finance 271, 273  
     Commonwealth financial assistance 278  
     leases 275  
     local government finance 274  
     outlays 117-118  
 Public hospitals 358  
 Publications, list of,

## R

Rail services  
     *See* Transport  
 Rail Transport Museum 183  
 Rates 65  
 Recreation 181  
 Reptiles 41-42  
 Responsible government 35  
 Retail trade 242, 250  
 Retail turnover 251  
 Rockingham 184  
 Rottnest Island 182  
 Royal Flying Doctor Service 141



## S

- Sailing 180, 184
- School education
  - Certificate of Secondary Education 146, 149
  - curriculum 148
  - government 147
  - non-government 148
- Screen West 163–165
- Secondary education 148
- Secondary Education Authority 149
- Service pension (veterans) 110, 328
- Sexually transmissible diseases 125
- Sheep 212, 329, 335
  - See also* Wool
- Ship to Shore 166
- Shipping 258
- Silver Chain Nursing 127
- Small business 241–245, 247
  - employment 242–245
  - industry 242, 245
  - number 241
- Small Business Opinion Survey 246–247
- Social services
  - benefits 328
- Sole Parent pensions 110
- Special benefits
  - See* Benefits
- Sport census 178–179
- Sport in 1993 176
- Sprintcar racing 180
- St. John Ambulance 140
- State accounts 193–194
  - see also* Economy
- State Emergency Service 141
- State forests 37
- State government finance 275
- State Ombudsman 136
- State Parliament 55, 57–58
- Statistical Divisions 66
- Statistical summary 325, 327–339, 341, 343
- Step-families 73
- Stone fruit 200–201, 209–210
- Strawberries 210
- Students
  - financial assistance 156
- Summary of crops 203, 208
- Supreme Court 133
- Surfriding 180
- Survey of Disability, Aging and Carers 116
- Survey of Families in Australia 115
- Survey of Motor Vehicle Usage 254
- Swan Valley vineyards 182
- Sydney 2000 181

## T

- Taxi services
  - See* Transport
- Technical and further education 150
- Teenage unemployment 284
- Tennis 175, 178–180
- Terrestrial invertebrates 43
- Tertiary Institutions Service Centre 156
- Timber 332
- Timber reserves 37
- Tourism 268
- Tourist accommodation
  - caravan parks 268
  - holiday flats, units and houses 268
  - hotels, motels and guest houses 268
  - visitor hostels 268
- Tourist visitor numbers 264
- Trade
  - international 308, 310, 339
  - interstate 311, 339
- Transperth 255, 257
- Transport
  - air 258–259, 334
  - bicycle services 253
  - bus and ferry services 255
  - rail 256–257
  - railways 334
  - road 252–256
  - sea 258
  - taxi services 256

## U

- Underwater world 182–183
- Unemployed 107, 109
- Unemployment
  - benefit 328
  - rate (definition) 283
  - rates by age 286
  - teenage 284
- Universities 151, 154–156
- Urban area of Perth 316

## V

- Vegetables 207

**W**

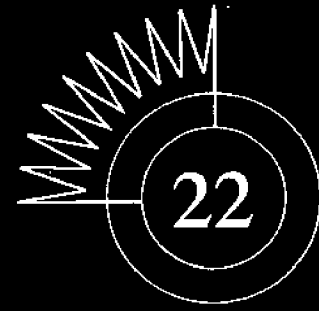
Wage rates	340
Wages and earnings	
<i>See</i> income	
Wages and salaries	332
War Widow's pensions	110
Waste management	46
Water management	34
Western Australia	
in comparison with Australia	345
Western Australian	
Coastal Shipping Commission	259
Western Australian	
Council of Social Service	115
Western Australian Institute of Sport	175
Western Australian Museum	163, 168
Western Australian Sports Federation	175
Western Australian Year of the Family	82
Westrail	256-257
Wheat	202-203
exports	336
production	329
value f.o.b.	331
Wholesale trade	250
Widow's pension	110, 328
Wool	212
production	329
value f.o.b.	331
<i>See also</i> Sheep	

**Y**

Yachting	177
Yanchep National Park	182
York	183







# HISTORICAL statistics

## Chapter 22

# HISTORICAL STATISTICS

---

Table	Page
TABLE 22.1 – ESTIMATED POPULATION, NATURAL INCREASE AND MIGRATION	326
TABLE 22.2 – VITAL STATISTICS	327
TABLE 22.3 – SOCIAL SERVICE BENEFICIARIES AND REPATRIATION PENSIONS	328
TABLE 22.4 – LIVESTOCK; WOOL PRODUCTION; AGRICULTURE	329
TABLE 22.5 – PRIMARY PRODUCTION — MISCELLANEOUS	331
TABLE 22.6 – SECONDARY PRODUCTION	332
TABLE 22.7 – BUILDING COMPLETED (a)	333
TABLE 22.8 – TRANSPORT; CUSTOMS AND EXCISE	334
TABLE 22.9 – MOTOR VEHICLE REGISTRATIONS; EXPORTS OF CATTLE AND SHEEP	335
TABLE 22.10 – EXPORTS OF CERTAIN COMMODITIES (a)	336
TABLE 22.11 – INTERNATIONAL AND INTERSTATE TRADE	339
TABLE 22.12 — INDUSTRIAL DISPUTES; WAGE RATES; UNEMPLOYMENT BENEFIT	340
TABLE 22.13 – CONSUMER PRICE INDEX : PERTH	341
TABLE 22.14 – STATE AND LOCAL AUTHORITIES: RECEIPTS AND OUTLAY (a)	342
TABLE 22.16 – PUBLIC REVENUE AND EXPENDITURE: CONSOLIDATED REVENUE FUND	343
TABLE 22.17 – NET EXPENDITURE FROM LOAN FUNDS; PUBLIC DEBT	344
TABLE 22.18 – WESTERN AUSTRALIA IN RELATION TO AUSTRALIA	345

## Chapter 22

# 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.

# Historical Statistics

**TABLE 22.1 - ESTIMATED POPULATION, NATURAL INCREASE AND MIGRATION**

NOTE: Figures above the double lines exclude full-blood Aborigines; those below the double lines refer to total population, including Aborigines.

Year	Population at 31 December(a)			Recorded natural increase (b)	Population Increase		Mean population Year ended 31 December	Population of Perth Statistical Division (b) (f)	
	Males	Females	Persons		Estimated net migration (c)	Total increase (d) Per cent (e)			
					Number				
(‘000)									
1829	769	234	1,003	n.a.	n.a.	n.a.	n.a.		
1830	877	295	1,172	n.a.	n.a.	169	16.85		
1840	1,434	877	2,311	34	123	157	7.29	n.a.	
1850	3,576	2,310	5,886	132	1,109	1,241	26.72		
1860	9,597	5,749	15,346	379	130	509	3.43	n.a.	15,092
1870	15,511	9,624	25,135	475	7	482	1.96		24,894
1880	16,985	12,576	29,561	551	-129	422	1.45		29,350
1890	28,854	19,648	48,502	1,021	1,821	2,842	6.22		47,081
1900	110,088	69,879	179,967	3,214	6,495	9,709	5.70		175,113
1910	157,971	118,861	276,832	4,845	6,312	11,157	4.20	266,687	271,019
1920	176,895	154,428	331,323	4,761	-1,298	3,463	1.06	327,152	330,023
1930	232,868	198,742	431,610	5,426	-453	4,973	1.17	425,785	429,079
1940	248,734	225,342	474,076	4,598	-2,902	1,696	0.36	472,060	473,397
1950	294,758	277,891	572,649	9,170	19,295	28,465	5.23	545,134	557,878
1960	372,665	358,368	731,033	11,229	1,113	12,342	1.72	717,316	722,900
1970	510,174	493,878	1,014,052	14,075	23,357	37,432	3.83	975,063	944,201
1971	547,563	522,784	1,070,347	16,433	16,352	33,033	3.26	1,013,455	1,052,785
1972	558,030	534,574	1,092,604	14,780	7,875	22,257	2.08	1,068,972	1,081,634
1973	568,500	545,482	1,113,982	12,700	8,910	21,378	1.96	1,091,845	1,010,921
1974	584,552	561,439	1,145,991	12,506	19,700	32,009	2.87	1,113,723	1,127,887
1975	594,518	572,885	1,167,403	12,411	9,410	21,412	1.87	1,142,777	1,155,499
1976	605,932	585,748	1,191,680	12,972	10,921	24,277	2.08	1,166,902	1,178,928
1977	618,210	599,006	1,217,216	12,815	11,392	25,536	2.14	1,191,588	1,204,454
1978	627,238	609,163	1,236,401	12,880	4,980	19,185	1.58	1,217,062	1,227,903
1979	636,442	620,650	1,257,092	12,499	6,847	20,691	1.67	1,237,090	1,246,800
1980	648,922	634,583	1,283,505	12,505	12,627	26,413	2.10	1,257,214	1,269,270
1981	667,381	652,840	1,320,221	13,905	20,858	36,716	2.86	1,284,014	1,301,528
1982	684,771	670,200	1,354,971	14,060	17,640	34,750	2.63	1,320,278	1,338,681
1983	697,570	683,441	1,381,011	14,718	8,126	26,040	1.92	1,354,814	1,368,546
1984	708,066	694,966	1,403,032	13,123	5,586	22,021	1.59	1,380,566	1,391,775
1985	724,952	711,948	1,436,900	14,272	16,304	33,868	2.41	1,404,053	1,419,004
1986 r	745,203	732,195	1,477,398	14,929	24,154	40,498	2.82	1,437,490	1,457,917
1987 r	763,238	750,117	1,513,355	14,452	22,841	35,957	2.43	1,477,611	1,496,004
1988 r	785,839	773,075	1,558,914	15,611	31,252	45,559	3.01	1,515,134	1,536,423
1989 r	803,939	792,286	1,596,225	15,508	22,941	37,311	2.39	1,558,537	1,578,633
1990 r	817,518	806,872	1,624,390	15,949	13,404	28,165	1.76	1,596,710	1,612,495
1991 r	827,945	818,911	1,646,856	15,832	7,910	22,620	1.38	1,625,226	1,636,597
1992 p	837,586	828,989	1,666,575	14,683	5,036	19,648	1.20	1,647,542	1,657,629
1993 p	844,704	839,641	1,687,345	14,816	5,954	20,770	1.25	1,667,342	1,677,011

(a) Population figures for 1971 and later refer to the estimated resident population. Estimates are based on final census results. (b) Excess of births registered over deaths registered, including deaths of defence personnel, whether in Australia or overseas, between September 1939 and June 1947. 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. (c) Interstate and overseas. (d) For the years 1972 to 1991 differences between the sum of natural increase and net migration, and total increase, are owing to distribution of intercensal discrepancy. (e) 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. (f) Prior to 1988 figures are at 31 December. Those for 1988 and later are as at 30 June.



TABLE 22.2 - VITAL STATISTICS

NOTE: Figures for 1965 and earlier (i.e. those above the double lines) exclude persons of predominantly Aboriginal descent.

Year	Marriages registered	Divorces (b)	Live births registered (c)	Deaths registered (c)(d)	Natural increase (c)(e)	Rate per 1,000 of mean population (a)				Infant mortality	
						Marriages	Births	Natural Deaths (c)(d)	increase (c)(d)	Number (c)(f)	Rate (c)(g)
1860	151		588	209	379	10.01	38.96	13.18	25.11	n.a.	n.a.
1870	153		853	378	475	6.15	34.27	15.18	19.08	100	117.23
1880	214		933	382	551	7.29	31.79	13.02	18.77	72	77.17
1890	278	n.a.	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	2,932		8,149	3,388	4,761	8.88	24.69	10.27	14.42	538	66.02
1930	3,205		9,200	3,774	5,426	7.47	21.44	8.80	12.64	430	46.74
1940	5,234		9,121	4,486	4,635	11.06	19.27	9.48	9.79	403	44.18
1950	5,434	720	14,228	5,058	9,170	9.74	25.50	9.07	16.44	386	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	6,448	604	16,186	6,274	9,912	7.91	19.85	7.70	12.16	351	21.68
1966	7,002	637	17,194	6,902	10,292	8.25	20.25	8.13	12.12	343	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	8,993	872	20,754	7,350	13,404	9.41	21.72	7.69	14.03	453	21.83
1970	9,227	889	21,618	7,543	14,075	9.28	21.74	7.59	14.16	459	21.23
1971	9,382	1,064	24,239	7,806	16,433	8.91	23.02	7.41	15.61	464	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	9,295	1,761	20,207	7,778	12,429	8.24	17.92	6.90	11.02	327	16.18
1975	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	10,111	3,481	21,877	7,993	13,884	7.77	16.81	6.14	10.67	193	8.82
1982	10,455	3,842	22,236	8,187	14,049	7.81	16.61	6.15	10.49	204	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	10,150	4,044	23,332	8,880	14,452	6.79	15.62	5.94	9.67	196	8.40
1988	10,578	3,964	25,143	9,532	15,611	6.90	16.38	6.21	10.18	214	8.51
1989	10,739	4,089	25,051	9,543	15,508	6.81	15.89	6.05	9.84	195	7.78
1990	10,613	3,845	25,356	9,407	15,949	6.59	15.75	5.84	9.91	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
1992	10,118	4,540	25,073	9,898	15,175	6.10	15.13	5.97	9.15	171	6.82
1993	10,382	4,654	25,079	10,316	14,763	6.19	14.95	6.15	8.80	143	5.70

(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.

TABLE 22.3 – SOCIAL SERVICE BENEFICIARIES AND REPATRIATION PENSIONS

Year ended 30 June	Social service benefits					Repatriation pensions		
	Pensioners (a)				Family allowance (a)(b) (c)(f)(g)	Un-employment benefit (h)	Disability (a) (i)	Service (a) (i)
	Age (c)(d)	Disability /Invalid (c)(d)	Total Age and Invalid	Widow				
1950	24,316	4,294	28,610	2,883	133,557	267	48,878	1,953
1951	24,317	4,184	28,501	2,789	172,186	60	51,027	2,022
1952	24,782	3,964	28,746	2,676	183,257	57	52,071	2,136
1953	25,679	3,996	29,675	2,686	192,991	844	52,607	2,343
1954	27,248	4,101	31,349	2,753	202,098	427	53,352	2,468
1955	28,833	4,191	33,024	2,848	212,025	157	54,117	2,692
1956	30,244	4,425	34,669	3,015	220,792	473	54,427	3,648
1957	32,192	5,039	37,231	3,243	230,922	1,940	54,987	4,306
1958	33,124	5,519	38,643	3,542	237,732	2,330	55,251	4,672
1959	34,629	5,941	40,570	3,833	245,090	2,852	56,008	5,009
1960	36,575	6,152	42,727	4,039	250,449	2,512	56,644	5,344
1961	37,656	6,945	44,601	4,348	257,037	2,154	57,123	6,101
1962	39,104	7,826	46,930	4,570	266,067	2,932	57,947	7,115
1963	40,661	8,170	48,831	4,486	270,736	2,674	57,580	7,526
1964	41,819	8,306	50,125	4,734	283,775	2,677	57,047	7,754
1965	42,706	8,615	51,321	4,926	288,486	1,679	55,920	7,780
1966	43,876	8,575	52,451	5,071	295,303	785	54,560	7,757
1967	45,741	8,307	54,048	5,228	306,325	718	52,967	7,674
1968	48,850	8,310	57,160	5,482	317,491	608	51,193	7,586
1969	50,432	8,413	58,845	5,559	329,593	524	49,526	7,298
1970	56,017	7,933	63,950	6,086	333,597	474	47,993	7,783
1971	58,224	8,155	66,379	6,392	347,585	872	46,514	7,767
1972	60,523	8,485	69,008	6,795	358,907	2,808	45,079	7,864
1973	68,701	9,518	78,219	7,948	364,590	4,960	44,093	9,599
1974	76,124	10,406	86,530	8,763	360,989	2,863	42,807	10,669
1975	79,831	10,961	90,792	9,442	368,626	9,317	41,747	11,814
1976	84,087	12,265	96,352	10,027	373,149	13,598	40,619	13,472
1977	86,470	13,263	99,733	10,691	376,346	15,706	39,459	15,338
1978	94,491	13,653	108,144	11,494	377,545	20,470	38,053	16,975
1979	96,558	15,045	111,603	12,232	371,315	(k)29,000	36,883	18,794
1980	98,887	15,894	114,781	12,476	375,013	(k)29,800	35,857	21,131
1981	101,042	16,352	117,394	12,526	377,113	28,638	34,920	23,704
1982	103,397	17,195	120,592	12,654	385,708	31,636	34,696	26,121
1983	105,784	18,598	124,382	12,830	391,885	50,992	34,726	29,346
1984	103,889	21,124	125,013	12,934	393,952	(k)59,400	34,808	32,640
1985	102,943	23,889	126,832	12,977	396,851	(k)57,900	34,952	34,815
1986	103,085	25,769	128,854	12,817	388,251	(k)54,358	35,223	36,423
1987	103,339	27,886	131,225	12,647	388,360	56,441	31,760	36,532
1988	103,743	28,522	132,265	11,898	367,107	46,091	31,362	36,798
1989	104,816	29,706	134,522	6,901	366,490	35,621	30,761	36,246
1990	106,301	30,590	136,891	6,488	362,930	34,770	30,285	35,570
1991	109,592	32,508	142,100	6,070	371,453	55,756	29,776	35,003
1992	115,397	35,136	150,533	5,816	373,002	78,420	34,514	29,355
1993	121,387	36,817	158,204	5,545	373,295	79,903	34,047	29,005

(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 to dependants of incapacitated or deceased veterans. (j) Comprises pensions paid to veterans and their dependants. (k) Estimated.

TABLE 22.4 – LIVESTOCK; WOOL PRODUCTION; AGRICULTURE

Year (a)	Livestock (b)			Wool production (c)		Area and production of principal grain crops (e)			
				Quantity	Gross value (d)	Wheat			
	Cattle	Sheep	Pigs			Area	Yield per hectare	Production	Gross Value of Prod'n
	'000	'000	'000	tonnes	\$'000	'000 hectares	tonnes	'000 tonnes	\$'000
1840	2	31	2	n.a.	n.a.	1	1.11	1	n.a.
1850	13	128	3	n.a.	n.a.	2	n.a.	n.a.	n.a.
1860	32	260	11	298	n.a.	6	1.00	6	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	18,947	4,552	516	0.65	333	11,023
1930	813	9,883	101	32,451	4,829	1,601	0.91	1,456	12,201
1940	789	9,516	218	32,362	7,889	1,062	0.54	573	8,648
1950	865	10,923	79	42,071	47,237	1,171	0.89	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	1,878	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	1,271	24,427	144	108,116	115,183	2,489	1.12	2,780	153,050
1967	1,357	27,370	161	119,681	121,509	2,569	1.09	2,809	153,157
1968	1,427	30,161	183	131,379	116,653	2,690	1.08	2,911	170,102
1969	1,546	32,901	220	164,307	158,264	2,952	1.04	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	2,978	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	2,654	34,771	260	174,807	242,027	3,171	1.30	4,122	427,507
1977	2,464	31,158	242	156,237	291,358	3,314	0.98	3,249	290,489
1978	2,271	29,823	237	143,127	258,034	3,609	0.82	2,945	292,901
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	1,690	33,213	278	175,859	577,273	4,148	1.05	4,362	736,334
1987	1,660	33,463	295	188,773	716,263	4,260	1.26	5,377	836,016
1988	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	1,672	38,422	272	236,079	1,253,637	3,476	1.38	4,800	951,537
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	3,230	1.47	4,736	950,333
1993	1,648	32,965	305	205,540	604,818	3,669	1.63	5,979	1,083,842

(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 are for the year ended 31 March. From 1965 figures relate to the year ended 30 June in the following year. (d) 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.

TABLE 22.4 - AGRICULTURE - continued

Year (a)	Area and production of principal grain crops (b)—continued						Gross value of primary commodities produced (d)		
	Oats		Barley		Hay (all kinds)		Area used for crops (c)	Agri- culture	Fisheries (e)
	Area	Produc- tion	Area	Produc- tion	Area	Produc- tion			
	'000 hectares	'000 tonnes	'000 hectares	'000 tonnes	'000 hectares	'000 tonnes		'000	'000
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	2	7	21	22	n.a.	n.a.
1880	—	—	2	2	8	20	26	n.a.	n.a.
1890	1	1	2	2	9	25	28	n.a.	n.a.
1900	2	2	1	1	42	106	81	n.a.	n.a.
1910	25	14	1	1	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	544
1940	174	59	27	16	169	381	1,614	39,520	r562
1950	237	132	28	22	87	276	1,737	141,348	1,432
1960	502	356	170	161	129	440	2,583	256,002	8,621
1961	538	396	219	193	115	387	2,734	266,972	8,569
1962	498	366	199	165	119	402	2,823	280,475	10,689
1963	476	367	158	137	138	460	2,965	292,615	11,219
1964	455	324	121	92	117	395	2,714	300,766	10,187
1965	466	254	123	84	123	396	2,950	296,147	15,218
1966	502	422	167	147	118	421	3,419	406,097	15,733
1967	487	401	151	152	119	424	3,463	411,084	16,525
1968	469	359	168	159	129	428	3,595	428,258	21,954
1969	442	416	224	208	138	508	3,840	461,479	23,717
1970	461	281	364	273	202	576	3,916	370,557	19,660
1971	520	520	632	769	190	673	3,831	445,390	25,127
1972	454	414	911	1,000	177	653	3,751	461,581	30,817
1973	297	212	744	640	224	664	3,855	574,665	28,158
1974	325	383	510	626	220	734	4,133	1,034,191	30,494
1975	262	250	387	329	164	508	3,758	845,169	35,130
1976	320	386	419	505	163	536	4,207	996,633	51,079
1977	372	347	452	553	169	560	4,416	959,160	69,094
1978	415	416	614	751	191	597	4,910	993,889	88,340
1979	427	491	616	778	184	586	4,993	1,343,932	96,055
1980	370	399	523	632	208	636	5,280	1,572,744	85,652
1981	382	384	535	504	240	703	5,547	1,678,031	82,764
1982	432	442	580	576	255	711	5,963	1,874,267	99,254
1983	461	534	603	717	252	754	6,379	2,196,230	126,208
1984	448	456	771	797	238	676	6,526	1,940,863	142,658
1985	351	460	965	1,431	226	747	6,723	2,602,205	165,443
1986	288	338	826	1,024	201	633	5,970	2,213,118	143,034
1987	302	414	468	601	218	681	5,930	2,554,658	182,421
1988	373	502	461	617	243	778	5,334	2,991,232	254,399
1989	389	618	383	552	248	873	5,082	3,719,597	242,412
1990	340	529	421	628	229	811	5,174	r3,369,132	231,677
1991	323	496	498	742	219	772	5,354	2,736,407	264,484
1992	367	614	554	900	239	901	5,216	2,849,384	n.y.a.
1993	332	578	611	1,061	198	763	5,668	3,114,773	n.y.a.

(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.

TABLE 22.5 - PRIMARY PRODUCTION - MISCELLANEOUS

Year	Gold production (a) (b)		Coal production (b)		Average values f.o.b. (c)	
	Quantity	Value	Quantity	Value	Wool (greasy) per kg (d)	Wheat per tonne (e)
	'000 grams	\$'000	'000 tonnes	\$'000	cents	\$
1890	622	171	—	—	n.a.	—
1900	43,980	12,015	120	110	n.a.	5.51
1910	45,753	12,494	266	227	16.20	14.85
1920	19,222	6,951	469	701	28.26	26.33
1930	13,001	3,729	509	770	19.37	16.69
1940	37,044	25,393	548	729	25.68	11.19
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	25,629	26,598	900	6,146	148.04	63.57
1954	26,469	26,627	1,034	7,178	156.20	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	27,900	29,102	852	5,105	144.67	48.12
1958	26,967	28,357	885	4,561	130.80	56.35
1959	26,967	28,388	926	4,713	91.87	51.76
1960	26,623	28,140	937	4,878	115.37	49.48
1961	27,122	28,584	778	3,361	99.10	49.91
1962	26,717	28,115	934	3,962	109.80	51.90
1963	24,883	26,375	916	3,970	111.38	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	19,564	23,316	1,078	4,562	116.00	51.12
1967	17,916	21,690	1,079	4,765	117.46	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	10,736	13,674	1,190	5,653	75.33	48.88
1972	10,848	14,835	1,188	5,855	74.94	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	6,305	29,788	1,879	12,511	144.37	126.39
1976	7,644	27,141	2,157	17,613	147.62	116.89
1977	7,619	31,586	2,339	21,896	188.10	105.10
1978	13,653	64,741	2,435	24,846	195.76	92.52
1979	12,231	78,313	2,406	34,484	207.87	116.53
1980	11,598	158,253	3,039	54,464	253.81	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	22,992	334,802	3,903	95,529	303.41	168.10
1984	26,183	365,453	3,942	106,325	317.08	173.81
1985	37,425	508,892	3,673	109,120	353.01	187.09
1986	46,072	707,114	3,765	126,841	376.50	185.14
1987	64,911	1,300,079	3,782	n.p.	430.31	144.86
1988	90,546	1,843,770	3,702	150,965	651.33	146.18
1989	130,565	2,072,692	3,800	161,241	721.94	202.00
1990	r161,789	r2,596,453	4,161	183,698	627.18	223.06
1991	r181,165	r2,900,129	5,218	232,916	374.30	201.31
1992	182,043	2,689,922	5,491	243,540	374.28	187.26
1993	179,800	2,834,190	5,428	244,774	359.27	215.38
1994	193,599	3,415,060	5,153	236,288	341.86	186.49

(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.

TABLE 22.6 - SECONDARY PRODUCTION

Year (a)	Manu- facturing estab- lish- ments(b)	Persons emp- loyed (c)	Wages and salaries (d)	Turn- over (e)	Value added (f)	Production of selected commodities						Timber from local logs (l)
	No.	No.	\$'000	\$'000	\$'000	'000	tonnes (h)	Bacon and ham (i)	Butter (j)	Flour (plain) (k)	Cheese (k)	cu m (l)
1900	632	11,166	2,589	n.a.	n.a.	25,234	n.a.	n.a.	132	11,375	n.a.	266
1910	822	14,894	3,532	10,158	5,472	23,162	n.a.	n.a.	291	33,401	n.a.	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	2,143	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	6,878	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	7,603	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	135,792	12,464	3,841	7,026	129,996	1,530	517
1965	4,734	58,097	119,978	616,422	260,637	146,057	12,040	4,047	7,887	121,906	1,838	550
1966	4,906	60,282	134,171	678,731	288,803	140,611	12,107	4,357	8,225	103,115	1,230	552
1967	5,167	63,757	153,597	765,224	335,788	163,166	12,148	4,654	6,529	91,725	1,726	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	208,410	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	255,879	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	2,035	66,750	594,514	2,882,421	1,151,619	385,942	15,818	5,836	3,340	n.a.	2,074	375
1978	2,037	65,740	629,095	3,031,505	1,208,749	357,391	13,308	5,666	2,212	n.a.	1,812	386
1979	2,202	65,232	670,772	3,498,828	1,321,683	381,092	16,129	5,516	1,373	n.a.	2,364	341
1980	2,301	65,987	734,204	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	70,799	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	61,997	1,047,393	5,922,692	2,136,745	n.p.	17,053	6,807	1,269	n.a.	3,665	265
1985	2,451	64,242	1,137,558	6,788,471	2,513,218	n.p.	21,938	7,862	1,582	n.a.	3,736	305
1986			(m)			n.p.	22,992	8,174	1,595	n.a.	3,400	329
1987	2,660	69,327	1,406,965	8,215,095	2,998,694	n.p.	29,109	8,502	1,400	n.a.	3,727	317
1988	2,675	72,069	1,604,782	9,416,932	n.a.	n.p.	25,820	8,377	1,505	n.a.	3,772	319
1989	2,651	72,722	1,710,547	10,578,958	n.a.	n.a.	19,475	9,937	r1,139	n.a.	r3,586	324
1990(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	r3,510	r64.5	r1,779.7	r13,114.6	n.a.	n.a.	22,815	10,674	1,478	n.a.	5,256	263
1992	3,645	62.5	1,785.0	12,903.0	n.a.	n.a.	27,320	9,974	r2,046	n.a.	5,380	259
1993	n.y.a.	n.y.a.	n.y.a.	n.y.a.	n.y.a.	n.a.	n.y.a.	10,574	2,665	n.a.	5,804	n.a.

(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 for 1929-30 and later exclude amounts drawn by working proprietors. (e) Selling value 'at the factory'. (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 fellmongered, 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 1971-72 to 1980-81, Western 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.

TABLE 22.7 – BUILDING COMPLETED (a)

Year ended 30 June	Houses (b) (c)		Alterations and additions (f) to Other Residential buildings (b)(c) residential buildings			Non-residential building (g)				Total building (e)
			Number of units	Value (e)	Value (e)	Factories	Offices	Edu- cational	Total	
	Number (d)	Value (e)								
		\$m		\$m	\$m	\$m	\$m	\$m	\$m	\$m
1947	1,792	3.5	—	—	—	0.1	n.a.	n.a.	0.7	4.2
1948	2,771	5.8	—	—	—	0.2	n.a.	n.a.	0.9	6.7
1949	3,244	7.6	—	—	—	0.4	n.a.	n.a.	1.8	9.4
1950	3,509	9.0	101	0.2	—	0.4	n.a.	n.a.	1.5	10.7
1951	5,160	15.0	305	0.6	—	0.4	n.a.	n.a.	2.3	17.9
1952	6,577	24.5	215	0.3	—	1.4	n.a.	n.a.	4.1	28.9
1953	7,965	38.0	100	0.3	—	1.7	n.a.	n.a.	7.5	45.8
1954	7,627	39.8	22	0.8	—	1.7	n.a.	n.a.	11.0	51.6
1955	8,792	48.4	316	1.2	—	6.2	n.a.	n.a.	18.6	68.2
1956	7,760	45.1	584	2.6	—	3.8	0.8	2.2	19.7	67.4
1957	5,030	29.1	365	1.5	(h)	2.2	2.0	1.2	16.3	46.8
1958	6,196	36.5	171	0.7	—	2.5	3.9	1.1	17.3	54.5
1959	5,846	34.4	212	0.8	—	2.8	2.4	4.6	25.3	60.5
1960	5,997	35.5	263	1.0	—	2.4	1.5	5.8	23.8	60.2
1961	5,973	38.1	440	1.6	—	4.7	4.1	8.0	32.4	72.0
1962	6,082	39.5	265	1.3	—	3.0	2.9	6.0	27.3	68.1
1963	6,593	45.8	642	3.0	—	4.9	1.6	7.7	37.7	86.4
1964	7,276	51.8	1,295	5.6	—	5.4	6.0	6.2	35.5	92.9
1965	7,445	57.2	1,841	9.0	—	6.8	2.8	8.0	40.8	107.1
1966	7,265	58.1	1,624	9.1	—	9.6	10.6	8.5	63.0	130.2
1967	8,272	78.1	1,742	9.3	—	9.8	7.1	10.5	74.7	162.1
1968	9,858	97.4	2,392	12.6	—	15.1	14.6	12.1	85.5	195.4
1969	12,840	133.3	3,491	22.4	—	15.8	10.9	14.1	99.2	254.8
1970	13,933	151.3	5,596	40.5	—	16.6	14.3	13.3	111.6	303.4
1971	11,900	149.3	5,013	40.0	0.4	18.0	39.7	20.6	175.4	365.0
1972	13,209	165.5	1,595	13.9	1.2	21.3	19.4	16.3	150.8	331.4
1973	13,660	163.4	920	7.3	1.8	15.6	21.2	24.8	151.5	324.0
1974	12,517	176.4	3,546	32.8	2.8	23.4	19.0	21.8	139.2	351.2
1975	10,994	198.6	3,300	38.9	4.4	18.2	18.4	40.0	170.1	412.0
1976	12,080	253.8	2,948	44.0	8.7	22.4	45.7	58.3	227.3	533.8
1977	15,155	395.0	6,152	113.9	15.4	26.6	43.5	29.5	226.4	750.7
1978	12,685	378.8	4,681	98.9	21.5	34.6	18.2	46.1	234.1	733.3
1979	11,148	349.1	3,507	74.9	30.5	44.0	33.2	56.3	339.3	793.8
1980	11,648	380.9	4,156	93.2	33.3	51.5	49.9	33.2	301.9	809.4
1981	10,120	375.5	4,531	108.0	37.5	37.0	75.0	29.6	308.8	829.7
1982	9,440	398.5	5,255	165.0	51.9	52.6	131.5	39.9	495.6	1,111.0
1983	9,070	372.5	4,020	143.4	47.4	45.2	152.1	37.7	464.3	1,027.5
1984	10,340	407.4	2,124	75.9	41.0	19.0	75.0	45.1	351.0	875.4
1985	14,000	583.9	3,735	115.3	51.9	27.9	55.6	30.7	357.5	1,108.6
1986	12,620	615.7	4,217	158.1	60.5	91.5	149.9	65.3	630.8	1,465.1
1987	12,330	651.5	3,619	144.3	70.4	39.0	155.8	99.2	795.0	1,661.2
1988	12,390	694.4	3,518	140.6	80.2	63.4	208.1	120.9	884.5	1,799.7
1989	14,660	906.9	4,631	193.6	99.5	81.3	263.6	65.1	959.5	2,159.5
1990	17,690	1,296.1	7,229	367.9	142.0	97.4	343.5	161.9	1,194.0	3,000.0
1991	11,385	904.3	3,959	240.6	143.5	59.3	203.1	117.5	761.4	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
1993	14,368	1,064.0	5,436	343.5	137.0	42.3	313.2	130.5	882.0	2,426.5
1994	15,962	1,277.6	5,757	369.3	142.3	46.1	86.8	122.1	741.6	2,530.9

(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). Prior to 1 July 1985, valued at \$10,000 and over (includes alterations and additions). (h) Not available separately; included with Houses and Other residential buildings as appropriate.

TABLE 22.8 - TRANSPORT; CUSTOMS AND EXCISE

Year	State Government railways (a)		Private railways	Air passenger movements Perth Airport		Customs and excise gross revenue (c)		
	Route kilometres at end of year (b)	Paying goods	Route kilometres at end of year	Internal	Inter-national	Customs	Excise	Total
		'000 t		'000	'000	\$'000	\$'000	\$'000
1870	—	—	—	..	..	81	—	81
1880	55	2	61	..	..	186	—	186
1890	303	62	620	..	..	356	—	356
1900	2,181	1,406	1,003	..	..	1,889	63	1,952
1910	3,432	2,278	1,452	..	..	1,543	213	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	6,611	2,661	1,165	n.a.	n.a.	9,908	18,395	28,303
1954	6,616	3,257	1,220	n.a.	n.a.	12,241	19,447	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	6,626	3,976	925	n.a.	n.a.	4,800	32,398	37,198
1960	6,630	4,605	832	n.a.	n.a.	5,614	33,634	39,248
1961	6,635	4,911	755	n.a.	n.a.	7,470	33,835	41,305
1962	6,198	5,428	898	n.a.	n.a.	7,156	35,705	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	6,140	7,999	455	294	36	13,569	58,176	71,745
1968	6,140	9,053	455	340	49	19,468	62,903	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	6,075	16,348	1,181	681	165	44,114	148,310	192,424
1976	6,163	17,812	1,179	658	197	46,767	183,838	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	5,610	19,791	1,177	1,005	414	130,752	379,889	510,641
1984	5,623	19,870	1,177	1,075	455	133,088	492,117	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	5,553	24,294	1,198	1,140	812	260,204	326,816	587,020
1990	5,554	24,906	n.a.	1,399	861	258,328	376,293	634,621
1991	5,554	24,410	n.a.	1,939	824	n.a.	n.a.	n.a.
1992	5,554	25,890	n.a.	1,909	897	n.a.	n.a.	n.a.
1993	5,583	26,523	n.a.	2,126	1,001	n.a.	n.a.	n.a.
1994	5,583	27,726	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.



TABLE 22.9 - MOTOR VEHICLE REGISTRATIONS; EXPORTS OF CATTLE AND SHEEP

Year	New motor vehicles registered (a)				Motor vehicles on register (d)				Exports of—	
	Utilities, panel vans, trucks and buses		Motor cycles (c)	Total	Utilities, panel vans, trucks and buses		Motor cycles (c)	Total	Cattle	Sheep (f)
	Motor cars (b)				Motor cars (e)					
									\$'000	\$'000
1890	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	1	2
1900	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	—	2
1910	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16	9
1920	n.a.	n.a.	n.a.	n.a.	3,404	n.a.	n.a.	n.a.	—	28
1930	n.a.	n.a.	n.a.	n.a.	31,130	11,358	7,707	50,195	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	5,730	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	9,321	4,418	1,192	14,931	104,506	63,315	12,731	180,552	243	923
1958	10,140	5,562	1,702	17,404	111,825	63,598	12,631	188,054	308	841
1959	10,389	5,140	2,071	17,600	119,957	65,588	12,814	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	35,379	11,018	1,539	47,936	275,300	94,500	9,600	379,400	972	2,943
1970	37,764	11,138	1,945	50,847	301,000	99,900	10,800	411,700	760	2,876
1971	37,769	10,872	2,718	51,359	328,500	104,900	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	36,904	11,425	4,914	53,243	364,400	107,400	16,800	488,600	1,661	7,959
1974	40,302	12,241	7,062	59,605	389,300	112,700	21,000	523,000	2,111	12,539
1975	41,474	13,693	6,613	61,780	414,800	125,000	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	552,552	187,599	33,009	773,160	2,899	100,340
1982	42,329	16,079	5,835	64,243	573,400	197,344	35,213	805,957	3,039	94,825
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	632,182	218,851	36,324	887,357	5,339	84,317
1987	33,642	10,198	2,305	46,145	647,734	223,030	35,287	906,051	4,969	105,015
1988	36,040	10,617	2,215	48,872	670,158	230,161	35,442	935,761	(g)	(g)
1989	44,100	14,149	2,522	60,771	708,253	241,698	36,294	986,245	3,371	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
1993	45,567	11,556	2,117	59,240	803,728	269,408	37,894	1,111,030	23,137	118,363
1994	48,589	12,486	2,103	63,178	827,837	277,466	37,078	1,142,381		

(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.

TABLE 22.10 - EXPORTS OF CERTAIN COMMODITIES (a)

Year (b)	Meats—Fresh, chilled or frozen						Rock lobsters (c)		Wheat exports (d)	
	Beef and veal		Mutton and lamb		Pigmeat		Quantity	Value	Quantity	Value
	Quantity	Value	Quantity	Value	Quantity	Value				
	tonnes	\$'000	tonnes	\$'000	tonnes	\$'000	tonnes	\$'000	tonnes	\$'000
1840	—	—	—	—	—	—	—	—	—	—
1850	—	—	—	—	—	—	—	—	1	—
1860	—	—	—	—	—	—	—	—	—	—
1870	—	—	—	—	—	—	—	—	408	8
1880	—	—	—	—	—	—	—	—	—	—
1890	—	—	—	—	—	—	—	—	27	—
1900	—	—	(e)	—	—	—	—	—	54,839	813
1910	—	—	—	—	—	—	—	—	249,049	5,083
1920	300	33	—	—	—	—	—	—	679,109	12,258
1930	5,162	272	—	—	—	—	—	—	—	—
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	6,028	1,135	1,044	301	424	232	1,311	1,861	730,002	45,728
1953	5,016	1,437	6,589	1,463	463	303	1,329	2,085	634,639	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	1,532	2,490	526,212	27,478
1956	7,601	2,343	6,602	2,156	743	482	1,601	3,022	619,779	28,860
1957	4,127	1,221	5,788	1,741	733	588	1,618	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	10,535	4,342	9,944	3,177	1,983	1,178	2,715	5,281	639,647	33,113
1960	13,597	6,742	8,735	2,378	1,188	953	2,996	6,499	999,164	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	17,268	9,382	7,428	2,401	2,061	1,404	3,490	8,910	1,380,372	72,197
1964	20,528	11,497	5,385	1,895	861	718	3,416	9,211	1,497,453	77,881
1965	19,360	11,730	5,040	1,981	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	16,912	11,987	9,652	3,723	565	470	3,643	13,873	2,312,777	126,918
1968	16,821	12,995	13,153	4,745	547	474	3,919	17,989	2,373,195	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	20,257	17,626	24,244	9,396	1,126	895	3,155	19,413	2,670,890	130,564
1972	24,435	22,528	42,994	17,645	2,503	1,995	3,425	24,626	2,587,504	128,132
1973	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	31,083	25,993	33,240	22,107	2,283	3,037	3,328	25,258	3,241,895	409,758
1976	35,732	32,693	52,120	34,009	2,451	3,696	3,128	27,777	3,215,792	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	51,932	90,216	26,250	31,059	382	693	4,170	51,064	2,208,985	257,414
1980	41,372	93,547	44,699	51,230	204	460	3,626	50,448	4,205,774	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	41,659	88,972	29,073	43,133	99	344	5,424	88,175	5,031,977	845,855
1984	32,492	80,442	26,000	39,114	282	829	6,506	111,954	3,637,624	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	29,928	88,348	31,010	50,305	481	1,542	4,884	143,665	4,872,265	697,557
1988	—	—	—	—	(f)	—	—	—	—	—
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	32,038	90,710	45,219	81,803	74	180	6,854	195,603	5,013,047	708,217
1992	25,899	83,634	27,946	50,439	48	86	9,316	282,124	1,764,475	276,779
1993	28,794	95,435	31,755	67,859	61	239	12,107	283,443	5,308,934	1,143,428
1994	25,197	84,803	25,806	61,903	268	998	11,745	338,132	6,018,653	1,122,434

(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) Details not available; see Chapter 12.

TABLE 22.10 - EXPORTS OF CERTAIN COMMODITIES (a) - *continued*

Year (b)	Flour (c)		Potatoes		Fresh and dried fruit (d)	Hides and skins	Timber (e)		Wool (f)	
	Quantity	Value	Quantity	Value	Value	Value	Quantity	Value	Quantity	Value
	tonnes	\$'000	tonnes	\$'000	\$'000	\$'000	'000 cu m	\$'000	tonnes	\$'000
1860	11	—	71	1	—	1	—	2	141	31
1870	—	—	26	—	—	—	2	10	298	99
1880	n.a.	—	—	—	—	—	6	35	811	179
1890	—	—	—	—	—	8	19	133	1,970	543
1900	47	1	113	1	1	49	33	164	3,161	523
1910	2,559	49	18	—	11	150	162	916	4,125	541
1920	117,254	5,045	1,637	54	300	482	342	1,945	11,883	1,934
1930	62,659	1,540	5,037	151	312	1,246	143	931	27,034	7,875
1940	83,159	1,301	11,953	214	740	745	143	1,251	28,487	5,558
1950	105,065	8,335	10,090	384	1,780	2,329	81	1,949	45,766	50,923
1951	144,914	11,774	11,181	506	2,295	5,294	66	1,783	41,633	112,559
1952	146,584	13,669	13,514	733	2,853	3,194	68	2,075	46,633	67,680
1953	159,883	15,090	12,860	750	4,556	3,942	112	4,147	51,489	79,122
1954	134,126	11,704	16,026	1,300	3,300	3,295	109	4,480	51,083	82,260
1955	109,172	7,219	9,020	512	3,845	2,921	99	3,847	49,811	70,563
1956	117,409	7,766	2,275	171	3,393	3,274	129	5,598	58,982	70,313
1957	115,658	7,474	7,728	736	4,598	4,650	132	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	94,854	6,337	8,577	368	3,609	3,489	183	8,415	60,280	58,337
1960	79,697	5,100	9,612	436	2,437	4,767	174	7,760	62,838	77,957
1961	122,839	7,840	7,821	437	4,636	3,828	157	7,175	71,681	74,842
1962	88,889	5,891	10,328	632	2,818	4,580	161	7,528	73,584	83,865
1963	67,652	4,645	18,032	810	4,982	4,339	155	7,241	71,058	82,107
1964	62,677	4,396	9,925	353	4,016	4,966	149	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	49,130	3,378	21,362	1,393	4,838	5,447	69	3,687	97,698	115,128
1967	34,804	2,307	17,478	692	5,704	5,377	139	7,475	106,886	126,995
1968	41,918	2,944	13,142	622	4,068	4,699	85	4,947	124,708	126,417
1969	35,100	2,433	21,944	1,149	6,552	6,013	88	5,068	144,388	157,950
1970	31,173	2,257	19,888	831	6,054	7,968	96	5,666	132,778	134,796
1971	26,670	1,958	9,390	510	7,208	5,395	79	4,808	128,388	98,289
1972	18,882	1,345	8,600	371	5,245	5,356	101	6,440	159,284	120,460
1973	9,798	859	(g)4,911	(g)334	6,135	13,945	113	7,087	146,456	220,719
1974	11,232	1,380	(g)9,576	(g)1,113	5,835	13,536	100	7,407	121,113	263,330
1975	19,281	3,439	8,527	1,217	7,547	11,195	109	9,252	114,069	167,631
1976	11,658	2,022	12,196	1,636	6,047	13,728	94	9,823	153,248	231,301
1977	11,355	2,051	7,190	1,127	5,285	24,708	78	10,152	169,674	331,164
1978	8,291	1,481	5,853	390	5,976	21,147	59	8,885	123,071	251,321
1979	7,872	1,660	2,735	373	8,703	29,280	66	10,508	150,185	326,466
1980(h)	4,342	1,055	5,292	616	10,314	34,716	72	12,226	141,262	378,557
1981	4,952	1,279	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	1,086	343	7,274	1,278	12,655	18,783	18	4,813	123,953	392,144
1984	3,127	833	2,806	756	10,013	23,998	20	5,251	121,511	406,207
1985	3,140	876	5,084	946	10,220	27,629	22	7,173	140,675	523,304
1986	1,750	550	2,338	511	12,573	13,979	22	7,330	153,987	614,202
1987	1,879	528	2,311	570	13,879	40,292	10	4,199	161,085	731,352
1988					(i)					
1989	1,957	642	740	153	8,338	32,009	13	5,497	153,548	1,167,056
1990	630	276	4,271	1,000	10,575	39,078	20	7,556	124,308	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	21,678	41	10,307	160,120	660,221
1993	4,262	1,453	9,600	3,290	13,997	28,480	17	10,096	154,070	605,676
1994	8,667	2,664	11,779	3,819	16,555	17,172	18	13,249	176,414	653,592

(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 12.

TABLE 22.10 – EXPORTS OF CERTAIN COMMODITIES (a) – continued

Year (b)	Iron ore and concentrates		Lead and zinc ores (c) (d)	Tin ore concentrates	Ilmenite concentrate (including leucoxene) (e)		Iron and steel (f)	Gold mint bullion (g)	
	Quantity	Value	Value	Value	Quantity	Value	Value	Quantity	Value (h)
	'000 tonnes	\$'000	\$'000	\$'000	'000 tonnes	\$'000	\$'000	kg	\$'000
1910	—	—	4	93	—	—	5	10,389	2,835
1920	—	—	102	129	—	—	16	1,275	452
1930	—	—	19	29	—	—	3	4	1
1940	—	—	2	14	—	—	31	36,329	24,056
1950	—	—	272	49	—	—	95	2	2
1951	—	—	263	62	—	—	83	—	—
1952	53	102	1,369	107	—	—	58	12,286	13,143
1953	553	1,079	1,681	153	—	—	357	23,608	24,798
1954	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	18,738
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	1,562	3,040	662	1,229	330	3,194	17,933	15,956	16,127
1966	2,657	6,967	124	1,521	430	4,181	14,458	25,909	26,147
1967	8,530	30,890	177	2,214	443	4,440	15,658	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	—	2,538	647	9,995	60,765	13,659	50,327
1977	84,939	900,987	—	3,939	1,184	20,155	74,508	9,980	36,863
1978	80,128	935,018	—	4,947	986	17,653	50,285	10,344	50,906
1979	84,016	978,315	—	5,074	883	17,475	72,591	n.a.	(i) 99,708
1980	76,725	1,025,660	220	5,841	1,119	25,433	83,447	n.a.	(i) 56,317
1981	72,756	1,069,087	—	2,469	929	23,726	42,423	1,279	22,024
1982	72,532	1,195,486	11,285	1,057	890	25,003	6,645	5,054	72,060
1983	64,551	1,405,840	14,925	1,234	780	21,986	2,959	9,536	141,340
1984	80,942	1,551,299	18,420	127	1,068	35,176	2,473	21,312	308,580
1985	87,670	1,796,578	17,407	—	1,009	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	3,096	95,874	1,519,559
1992	102,906	2,701,384	218,117	—	580	54,897	2,673	166,241	2,465,878
1993	112,190	2,883,594	189,640	—	n.a.	n.a.	4,613	171,524	2,706,741
1994	119,616	2,765,138	112,715	—	n.a.	n.a.	7,900	184,018	3,285,403

(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 20. (k) Source: Department of Minerals and Energy.

TABLE 22.11 - INTERNATIONAL AND INTERSTATE TRADE  
(\$'000)

Year(a)	Imports (b)			Exports (b) (c)			Excess of -		Ships' stores
	Foreign	Interstate	Total	Foreign	Interstate	Total	Imports	Exports	
1850	n.a.	n.a.	125	n.a.	n.a.	44	80	..	n.a.
1860	318	20	338	160	16	175	163	..	3
1870	260	167	427	348	46	394	33	..	8
1880	349	358	707	736	252	988	..	280	11
1890	1,025	724	1,749	961	369	1,330	419	..	14
1900	6,574	5,350	11,924	11,246	2,250	13,496	..	1,572	208
1910	8,750	7,067	15,817	11,679	4,627	16,306	..	489	294
1920	9,918	14,819	24,737	28,918	2,392	31,311	..	6,574	827
1930	17,758	19,805	37,563	32,009	2,213	34,223	3,341	..	1,316
1940	12,568	27,450	40,017	19,256	28,518	47,774	..	7,756	1,380
1950	68,844	70,044	138,887	106,590	12,421	119,011	19,876	..	4,720
1951	80,517	95,828	176,345	197,686	18,780	216,466	..	40,122	7,249
1952	120,474	124,209	244,683	151,562	35,404	186,966	57,717	..	8,419
1953	59,748	137,213	196,961	166,286	49,659	215,945	..	18,984	10,321
1954	85,051	165,374	250,425	136,849	39,190	176,039	74,386	..	7,266
1955	101,295	182,110	283,405	137,013	47,310	184,323	99,082	..	7,865
1956	92,963	177,952	270,915	152,286	68,466	220,752	50,164	..	10,592
1957	80,423	188,680	269,103	216,599	81,545	298,144	..	29,041	12,902
1958	91,775	195,103	286,879	179,516	79,836	259,352	27,527	..	11,602
1959	89,972	202,430	292,402	174,585	68,919	243,504	48,898	..	9,482
1960	92,363	246,696	339,059	231,766	77,278	309,043	30,016	..	8,954
1961	110,531	245,474	356,005	309,332	89,922	399,254	..	43,249	10,285
1962	100,178	245,208	345,386	287,619	84,626	372,245	..	26,859	9,379
1963	112,640	313,712	426,351	246,823	91,636	338,459	87,892	..	7,904
1964	121,677	323,176	444,854	286,132	101,811	387,943	56,911	..	9,733
1965	153,540	343,899	497,439	243,078	119,954	363,033	134,407	..	9,009
1966	175,690	403,054	578,744	314,404	119,619	434,023	144,721	..	10,058
1967	159,390	474,852	634,242	421,325	116,030	537,355	96,887	..	10,936
1968	206,980	527,052	734,031	475,260	124,505	599,765	134,266	..	14,824
1969	203,533	562,312	765,846	546,366	149,892	696,258	69,588	..	14,327
1970	242,299	640,189	882,487	675,027	149,861	824,888	57,600	..	15,092
1971	278,344	726,778	1,005,122	862,421	163,812	1,026,233	..	21,111	20,561
1972	283,263	787,788	1,071,051	946,504	156,303	1,102,807	..	31,756	22,477
1973	227,305	786,177	1,013,483	1,154,359	173,839	1,328,198	..	314,715	17,542
1974	368,910	939,361	1,308,272	1,414,968	222,208	1,637,176	..	328,904	29,224
1975	577,416	1,134,510	1,711,926	1,880,082	253,424	2,133,506	..	421,580	50,157
1976	637,439	1,418,726	2,056,165	2,117,898	290,733	2,408,631	..	352,466	46,638
1977	829,411	1,641,545	2,470,955	2,596,107	305,836	2,901,943	..	430,987	64,141
1978	937,350	1,828,510	2,765,860	2,588,954	355,151	2,944,105	..	178,245	71,009
1979	1,161,164	2,044,447	3,205,611	2,820,134	446,208	3,266,343	..	60,732	72,611
1980	1,449,694	2,337,808	3,787,502	3,854,047	635,388	4,489,434	..	701,933	126,176
1981	1,663,378	2,841,110	4,504,488	3,595,048	812,996	4,408,044	96,444	..	144,285
1982	2,535,112	3,141,096	5,676,208	3,907,623	888,540	4,796,163	880,045	..	134,198
1983	2,523,046	3,160,789	5,683,835	4,797,766	1,155,698	5,953,464	..	269,129	129,484
1984	1,935,352	3,638,883	5,574,235	5,062,112	1,410,145	6,466,257	..	891,822	110,706
1985	2,155,270	4,291,229	6,446,499	6,028,430	1,507,370	7,535,850	..	1,089,351	123,237
1986	2,202,948	4,783,474	6,986,422	6,529,348	1,623,017	8,152,365	..	1,165,943	87,674
1987	2,768,663	5,071,476	7,840,139	6,911,427	1,805,667	8,717,094	..	876,955	84,476
1988	3,216,985	5,404,518	8,621,503	7,491,773	1,808,478	9,300,251	..	678,748	87,220
1989	3,581,772	6,430,737	10,012,509	8,856,643	1,777,058	10,633,701	..	621,291	72,455
1990	3,984,818	6,515,966	10,500,784	10,227,858	2,282,389	12,510,247	..	2,282,389	90,093
1991	3,635,752	5,861,550	9,497,302	12,426,818	1,970,058	14,396,876	..	4,899,574	91,871
1992	3,548,198	6,043,695	9,591,893	14,039,464	2,533,644	16,573,108	..	6,981,215	55,953
1993	4,791,817	6,368,752	11,160,569	15,659,551	2,457,598	18,117,149	..	6,956,580	68,065

(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.

TABLE 22.12 — INDUSTRIAL DISPUTES; WAGE RATES; UNEMPLOYMENT BENEFIT

Year	Industrial disputes (a)				Award rates of pay index numbers (c)		Persons on Un-employment benefit (f)
	Number of disputes	Workers involved (b)	Working days lost		Adult male wage and salary earners (d)(e)		
			Number	Average per worker involved	Weekly	Hourly	
		'000	'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	16	9.8	9.6	0.97	106.3	106.6	157
1956	14	11.1	31.9	2.87	110.8	111.0	473
1957	14	5.4	3.1	0.57	113.9	114.1	1,940
1958	20	11.0	3.0	0.27	114.7	114.9	2,330
1959	20	11.2	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	2.9	6.2	2.17	153.6	153.8	785
1967	26	5.1	6.0	1.18	159.6	159.9	718
1968	70	18.7	21.8	1.16	169.0	168.7	608
1969	104	39.1	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	401.2	398.5	9,317
1976	250	100.7	252.1	2.50	104.8	104.8	13,598
1977	229	54.9	220.5	4.02	116.0	116.0	15,706
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	210.7	(g)57,514
1985	361	48.7	92.9	1.91	103.8	103.8	(g)54,028
1986	267	50.6	143.1	2.83	106.3	106.5	55,089
1987	245	43.1	115.3	2.68	110.0	110.3	52,755
1988	221	60.9	160.6	2.64	118.5	119.1	46,091
1989	226	54.7	102.1	1.87	124.4	126.7	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
1992	134	28.8	53.6	1.86	137.1	137.6	78,420
1993	111	27.6	29.5	1.07	138.5	139.3	79,903

(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.

TABLE 22.13 - CONSUMER PRICE INDEX : PERTH

(Base of each index: 1989-90 = 100.0)  
Reference: Consumer Price Index (6401.0)

As at June quarter	Food	Clothing	Housing	Household equipment and operation	Transport- ation	Tobacco and alcohol	Health and personal care	Recreation and education	All groups	All groups Per cent change(a)
1973	21.5	22.2	20.6	23.0	19.6	18.0	15.7	n.a.	20.8	—
1974	24.5	26.0	22.5	24.9	21.7	19.6	18.7	n.a.	23.3	12.0
1975	28.0	31.1	26.8	30.6	26.4	24.1	24.5	n.a.	28.0	20.2
1976	31.0	36.5	32.6	35.2	30.9	29.8	20.2	n.a.	31.8	13.6
1977	35.5	41.2	37.0	38.0	33.2	31.1	42.9	n.a.	36.3	14.2
1978	40.0	44.9	39.9	41.4	36.7	32.8	44.9	n.a.	39.6	9.1
1979	45.1	48.3	41.5	44.0	41.1	39.4	39.4	n.a.	43.0	8.6
1980	49.1	51.5	43.3	48.6	46.2	41.5	49.6	n.a.	47.2	9.8
1981	53.3	55.8	47.2	53.0	51.3	44.5	47.4	n.a.	51.1	8.3
1982	58.1	59.5	51.7	59.2	56.0	48.2	68.8	61.1	56.8	11.2
1983	64.6	63.4	55.4	63.7	61.7	54.5	78.6	66.8	62.4	9.9
1984	67.8	67.4	58.3	68.3	66.5	63.0	59.0	68.1	65.0	4.2
1985	72.3	71.6	61.7	71.6	72.5	67.8	61.6	72.3	69.4	6.8
1986	78.1	79.3	67.2	78.2	74.9	75.2	66.9	77.1	74.8	7.8
1987	82.8	86.5	73.3	85.0	86.7	83.9	79.3	85.3	82.6	10.4
1988	89.2	92.6	76.3	90.9	91.6	89.6	87.5	91.4	88.1	6.7
1989(b)	96.3	98.4	88.9	96.4	95.9	93.6	94.2	95.4	94.7	7.5
1990	102.8	101.6	103.8	102.9	102.1	103.8	103.8	102.3	102.9	8.7
1991	105.2	105.9	100.6	106.1	105.4	109.7	110.9	103.5	105.1	2.1
1992	107.6	108.5	89.7	107.4	109.9	111.9	116.9	105.3	105.6	0.5
1993	109.2	108.9	87.9	107.7	111.6	115.6	122.3	107.2	106.8	1.1
1994	109.9	108.5	87.8	107.9	116.0	131.8	125.5	107.5	109.1	2.2

(a) Per cent change is change from the June quarter of previous year (b) Series for Housing and All groups have been affected by a change in the treatment of mortgage interest charges from March Quarter 1989. For more detail refer to the information paper, *The Australian Consumer Price Index: Treatment of Mortgage Interest Charges* (ABS Catalogue No. 6442.0).

**TABLE 22.14 – STATE AND LOCAL AUTHORITIES: RECEIPTS AND OUTLAY (a)**  
(\$m)

Year ended 30 June	Receipts and financing transactions						Outlay				
	Taxes, fees, fines	Net operating surpluses public trading enter- prises	Property and other income	Grants from the Common -wealth Govern- ment	Financ- ing trans- actions	Total funds avail- able	Final con- sumption expendi- ture	Capital expendi- ture on goods(b)	Trans- fer pay- ment	Net advances paid	Total outlay
1976	322	66	99	772	53	1,312	728	435	131	18	1,312
1977	371	37	120	844	155	1,528	871	483	157	17	1,528
1978	423	80	168	974	259	1,905	1,005	551	330	19	1,905
1979	466	90	172	1,056	315	2,100	1,113	608	363	16	2,100
1980	519	98	185	1,168	352	2,321	1,267	646	409	—	2,321
1981	590	130	212	1,307	281	2,520	1,425	627	466	2	2,520
1982	690	155	249	1,430	316	2,840	1,609	717	516	-1	2,841
1983	772	194	316	1,619	857	3,757	1,864	1,196	677	20	3,757
1984	924	274	355	1,874	835	4,262	2,096	1,252	850	63	4,262
1985	1,062	301	394	2,067	585	4,410	2,313	1,102	972	22	4,409
1986	1,145	401	510	2,214	644	4,915	2,581	1,147	1,110	76	4,915
1987	1,397	518	529	2,395	679	5,518	2,815	1,328	1,294	81	5,518
1988	1,699	563	600	2,594	432	5,888	3,134	1,222	1,482	50	5,888
1989	1,984	601	793	2,586	805	6,769	3,505	1,414	1,601	60	6,769
1990	2,133	651	1,028	2,768	866	7,445	3,730	1,900	1,845	-25	7,446

(a) This series replaces 'Public Revenue and Expenditure: Consolidated Revenue Fund' and 'Net Expenditure from Loan Funds: Public Debt' on next page. (b) Includes gross fixed capital expenditure, increase in stocks and expenditure on land and intangible assets (net).

**TABLE 22.15 – STATE AND LOCAL AUTHORITIES: REVENUE, FINANCING AND OUTLAYS (a)**  
(\$m)

Year ended 30 June	Revenue			Financing				Outlays		
	Taxes, fees, fines	Other	Total	Increase in provi- sions	Net borrow- ings	Other	Total	Current	Capital	Total
1990	2,113	4,466	6,579	3278	397	142	866	5,375	1,871	7,446
1991	2,264	4,490	6,574	341	1,006	-375	973	6,012	1,715	7,727
1992	2,404	4,673	7,087	308	1,219	-860	667	6,180	1,574	7,754
1993	2,438	4,833	7,271	197	747	-305	639	6,294	1,616	7,910

(a) This series replaced Table 22.14 'State and Local Authorities: Receipts and Outlays'.



TABLE 22.16 - PUBLIC REVENUE AND EXPENDITURE: CONSOLIDATED REVENUE FUND  
(\$'000)

		Revenue					Expenditure					
		Public utili- ties	Depart- mental (b)	Taxa- tion	Terri- torial (c)	Total revenue	Public utili- ties	Interest and sinking fund	Departmental			Total expen- diture
Year (a)	Common- wealth funds								Educa- tion	Health	Other	
1850	n.a.	n.a.	n.a.	n.a.	4	38	n.a.	n.a.	n.a.	n.a.	n.a.	33
1860	n.a.	n.a.	n.a.	n.a.	35	140	n.a.	n.a.	3	n.a.	n.a.	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.	n.a.	40	19	n.a.	409
1890	n.a.	n.a.	n.a.	n.a.	217	829	n.a.	144	23	n.a.	n.a.	803
1900	n.a.	2,612	182	244	380	5,751	1,863	880	138	198	2,049	5,231
1910	1,407	3,916	551	673	649	7,315	2,440	2,006	367	328	1,533	6,895
1920	1,197	6,364	1,188	1,688	818	11,727	5,156	4,124	829	642	1,931	13,063
1930	1,547	10,596	3,134	2,906	950	19,501	8,073	6,891	1,385	649	2,872	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	1,547	8,818	2,766	2,014	585	16,071	5,724	7,015	1,098	328	4,543	19,186
1933	1,947	8,873	2,701	2,257	558	16,664	5,682	7,009	1,108	333	3,761	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	2,617	10,366	1,677	4,372	767	20,067	6,756	7,135	1,331	341	3,595	19,891
1937	2,013	10,633	1,727	4,807	773	20,371	7,247	7,237	1,432	381	4,024	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	2,087	11,159	1,786	5,728	634	21,899	7,857	7,779	1,514	401	3,992	22,340
1940	2,137	11,102	1,942	5,992	632	22,240	7,662	8,021	1,545	416	4,070	22,534
1941	2,247	11,366	1,916	6,255	638	22,864	7,534	8,114	1,568	421	4,262	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	7,852	13,518	2,497	1,330	634	26,303	9,377	8,183	1,627	458	5,564	26,254
1944	7,935	13,626	2,868	1,553	700	27,178	9,870	8,185	1,747	506	5,780	27,102
1945	8,044	13,618	3,402	1,715	697	27,908	10,064	8,251	1,778	485	6,261	27,899
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	11,461	11,769	3,105	2,138	1,053	29,962	10,866	8,012	2,447	1,369	5,910	30,057
1948	14,515	13,242	3,575	2,354	1,202	35,421	13,996	8,089	3,298	1,841	7,280	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	25,343	19,085	5,911	3,912	1,230	56,312	21,974	8,994	5,269	4,465	13,180	55,994
1952	29,923	24,335	6,863	4,633	1,300	67,910	27,490	9,741	7,262	6,269	15,696	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	38,759	32,645	9,433	7,258	2,014	91,440	36,089	13,857	11,217	8,026	19,838	92,408
1956	43,373	33,969	9,779	8,036	2,498	99,225	39,184	15,451	12,482	9,344	21,501	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	51,808	34,525	13,640	10,729	2,516	114,108	40,103	19,303	15,172	11,026	25,572	116,355
1959	55,496	36,080	14,522	10,368	2,783	120,136	40,317	20,844	15,819	11,967	29,244	123,506
1960	58,871	38,575	15,696	11,834	2,878	128,776	42,418	23,053	17,282	13,565	29,861	131,587
1961	65,519	40,830	16,372	12,079	2,797	138,665	41,072	24,628	19,541	15,018	35,160	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	75,847	43,559	18,134	14,762	3,501	157,182	42,267	29,980	22,850	16,073	41,254	158,687
1964	78,988	45,376	20,948	17,604	3,751	167,888	44,247	31,771	25,880	18,705	43,430	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	103,459	45,683	28,753	22,574	4,598	206,655	47,106	37,926	34,016	23,086	56,869	206,665
1967	106,748	52,787	31,461	27,536	7,655	228,146	53,182	41,662	36,746	26,429	61,512	228,174
1968	112,617	56,226	33,135	34,916	11,845	250,738	60,728	43,864	41,224	29,294	65,362	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	141,326	62,921	36,905	50,865	23,633	318,189	71,166	51,427	55,839	41,343	87,660	318,901
1971	170,396	68,350	45,583	48,434	32,187	367,252	79,717	54,178	66,341	52,575	107,129	371,620
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	37,162	473,840	88,372	65,280	94,547	71,866	144,005	477,330
1974	232,111	85,291	76,306	126,929	43,346	567,683	104,178	69,200	115,982	100,841	168,122	573,414
1975	313,846	108,921	96,930	160,307	49,010	734,240	121,494	75,300	165,705	148,161	213,042	743,373

(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 was replaced by Table 22.14 'State and Local Authorities: Receipts and Outlays'.

TABLE 22.17 - NET EXPENDITURE FROM LOAN FUNDS; PUBLIC DEBT  
(\$'000)

Net expenditure from loan funds on public works and services (b)								Public debt (at end of year)	
Year (a)	Railways, tramways and buses	Electricity supply	Harbours, rivers, light- houses, etc.	Water supplies, sewerage, drainage and irrigation	Public buildings	Other	Total	Gross amount out- standing	Sinking fund
1860	—	—	—	—	—	—	—	4	—
1870	—	—	—	—	—	—	—	—	—
1880	(c)549	(d)38	—	—	—	n.a.	(d)802	722	n.a.
1890	3	6	2	2	(e)76	n.a.	32	2,735	170
1900	302	395	949	110	—	110	1,757	23,349	754
1910	908	174	199	152	626	2,058	46,575	5,139	13,656
1920	242	204	94	21	4,765	5,327	93,644	142,389	2,081
1930	1,819	529	610	108	4,226	7,291	153,130	159,416	2,621
1931	878	257	420	—	1,457	3,012	2,624	167,029	2,693
1932	263	155	1,152	—	1,055	2,624	171,696	177,180	1,048
1933	374	485	1,355	69	1,838	4,121	180,688	184,666	1,138
1934	659	492	1,606	196	2,344	5,297	187,424	190,945	719
1935	997	610	2,155	213	1,103	5,076	192,461	195,583	1,147
1936	946	602	2,487	169	700	4,903	194,718	199,976	347
1937	491	352	2,303	178	741	4,064	192,957	191,790	254
1938	950	201	1,843	183	1,144	4,321	193,852	198,005	1,091
1939	441	184	1,777	230	640	3,272	200,549	207,377	126
1940	200	104	1,615	732	974	3,624	219,100	246,374	17
1941	214	18	152	1,649	306	480	276,577	306,144	1,861
1942	110	25	111	605	70	437	331,565	355,763	442
1943	157	92	133	100	55	217	377,465	410,290	112
1944	49	31	Cr. 143	75	166	34	436,857	464,237	147
1945	140	11	61	150	241	492	464,237	493,575	171
1946	142	208	75	473	451	276	523,070	555,130	222
1947	535	332	173	1,453	772	821	587,336	626,045	442
1948	676	1,471	316	1,388	1,097	125	665,620	705,514	267
1949	913	2,131	449	1,626	1,099	942	748,601	792,969	408
1950	4,496	4,691	804	2,002	1,357	2,859	840,343	886,778	182
1951	3,723	6,591	1,164	4,091	2,003	3,081	924,111	975,958	1,216
1952	15,198	6,684	2,694	4,803	2,729	3,409	1,030,060	1,074,111	4,899
1953	13,533	179	2,422	4,858	5,432	8,787	89,871	1,120,313	1,037
1954	11,295	1,406	2,328	3,939	3,144	6,276	28,388	331,565	822
1955	9,752	1,410	1,920	5,661	3,993	6,726	29,462	355,763	442
1956	6,139	2,049	1,638	5,516	4,187	7,098	26,629	377,465	245
1957	5,519	4,200	950	7,119	5,599	9,169	32,556	410,290	112
1958	4,209	2,480	1,398	7,694	5,891	6,599	28,272	436,857	147
1959	5,711	2,200	1,428	8,395	7,410	7,199	32,342	464,237	173
1960	4,953	1,553	1,373	9,547	8,723	6,355	32,504	493,575	171
1961	4,221	400	1,966	10,314	10,479	8,037	35,418	523,070	94
1962	5,432	300	2,587	10,952	12,032	6,449	37,751	555,130	222
1963	6,204	500	2,438	10,770	13,420	5,563	38,894	587,336	485
1964	7,496	—	3,028	10,537	15,630	6,409	43,100	626,045	442
1965	6,800	794	2,822	10,957	19,948	5,457	46,779	665,620	473
1966	7,628	1,434	2,583	12,667	19,908	3,580	47,800	705,514	267
1967	9,068	2,427	1,746	13,642	18,230	5,902	51,015	748,601	216
1968	7,750	4,542	2,402	14,552	18,816	5,115	53,177	792,969	408
1969	10,547	5,679	1,190	12,560	20,116	4,765	54,859	840,343	3,015
1970	6,331	4,566	2,055	13,330	24,627	8,594	59,504	886,778	182
1971	7,194	27	2,202	15,176	25,549	13,492	63,640	924,111	582
1972	5,919	3,666	1,902	18,369	23,994	32,606	86,456	975,958	1,216
1973	4,179	4,104	2,371	23,598	32,872	21,882	89,006	1,030,060	265
1974	5,569	3,467	2,505	26,708	34,324	3,291	75,863	1,074,111	4,899
1975	6,185	4,069	3,728	24,487	45,262	6,140	89,871	1,120,313	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.

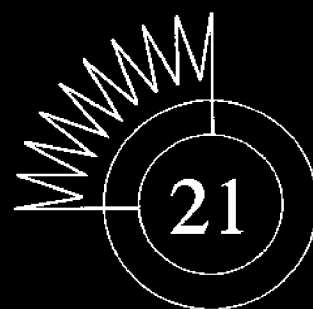
NOTE: This table was replaced by Table 22.14 'State and Local Authorities: Receipts and Outlay'.

TABLE 22.18 – WESTERN AUSTRALIA IN RELATION TO AUSTRALIA

	Unit	Date or period	Western 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	..	12.8	29.2	..
Population (a)	number	30 June 1993p	1,676,341	17,656,427	9.5
Population increase	number	1992-1993	18,991	167,355	11.3
Rate of population increase	per cent	1992-1993	1.15	0.96	..
Births registered (b)	number	1993	25,079	260,229	9.6
Deaths registered (b)	number	1993	10,318	121,599	8.5
Marriages registered	number	1993	10,382	113,255	9.2
Divorce - Dissolutions granted	number	1993	4,654	48,324	9.6
Employed labour force (c)	'000	May 1994	785.5	7,863.0	10.0
Average weekly earnings — all male employees	dollars	May 1994	622.70	625.10	..
Unemployed on benefit	number	30 June 1993	79,903	882,979	9.0
Industrial disputes - Working days lost	'000	1993	29.5	635.8	4.6
Area under crop	'000 hectares	1992-93	5,668	17,297	32.8
Area under sown pasture	'000 hectares	1992-93	7,409	28,967	25.6
Area of —					
Wheat for grain	'000 hectares	1992-93	3,669	8,275	44.3
Oats for grain	'000 hectares	1992-93	332	1,149	28.9
Barley for grain	'000 hectares	1992-93	611	2,947	20.7
Pastures cut for Hay	'000 hectares	1992-93	104	1,105	9.4
Fruit and vineyards	'000 hectares	1992-93	9	186	4.8
Livestock —					
Sheep	'000	31 March 1993	32,965	138,102	23.9
Cattle	'000	31 March 1993	1,648	24,062	6.8
Pigs	'000	31 March 1993	305	2,646	11.5
Production —					
Wheat for grain	'000 tonnes	1992-93	5,979	14,739	40.6
Wool (d)	'000 tonnes	1992-93	180	843	25.3
Meat (e)	'000 tonnes	1992-93	272	3,230	8.4
Whole milk (f)	mil. litres	1992-93	324	7,327	4.4
Butter (f)	tonnes	1992-93	2,665	126,457	2.1
Value of agricultural commodities produced	\$m	1992-93	3,115	21,836	14.3
Mining establishments - Value added	\$m	1990-91	(g)r7,603.2	r21,092.9	r36.0
Iron ore production	'000 tonnes	1992-93	111,730	115,703	96.6
Coal production	'000 tonnes	1992-93	(h)5,428	177,970	3.0
Crude oil production (i)	megalitres	1992-93	6,533	30,592	21.4
Manufacturing establishments (j) —					
Number	..	1991-92	3,645	41,480	8.8
Employment - At 30 June	'000	1991-92	62.5	906.9	6.9
Wages and salaries paid	\$m	1991-92	1,785.0	27,068.0	6.6
Turnover	\$m	1991-92	12,903.0	168,018.7	7.7
New dwelling units commenced	number	1993-94	24,800	177,922	13.9
Value of all building commenced	\$m	1993-94	2,821.5	26,757.1	10.5
Foreign imports	\$m f.o.b.	1993-94	4,791.8	64,470.0	7.4
Foreign exports	\$m f.o.b.	1993-94	15,659.6	64,611.0	24.2
Motor vehicles on register	'000	30 June 1994	1,142.4	10,699.2	10.7
New motor vehicles registered	'000	1993-94	63.2	591.7	10.7
Road traffic accidents—					
Persons killed	number	1993	209	1,952	10.7
Retail turnover (excluding motor vehicles, etc.)(k)	\$m	1993-94	10,312.3	101,073.6	10.2

(a) Based on estimated resident population. (b) Based on State of usual residence. (c) In civilian employment and seasonally adjusted. Excludes defence forces and employees in agriculture and private domestic service, and trainee teachers. (d) In terms of greasy wool. Comprises shorn wool, dead wool, fellmongered wool and wool exported on skins. (e) Comprises sheep, cattle, pig and poultry meat. Excluding Tasmanian poultry production. Dressed carcass weight. Excludes offal. (f) Source: Australian Dairy Corporation. (g) Excludes establishments predominantly engaged in quarrying sand and gravel. (h) Source: Department of Minerals and Energy. (i) Source: Department of Primary Industries and Energy. (j) Excludes details for manufacturing establishments employing fewer than four persons. Excludes electricity and gas establishments. (k) At current prices.





# REGIONAL. profile

## Chapter 21

# REGIONAL PROFILE

---

Contents	Page
<b>Perth Statistical Division</b>	
Profile	315
Climate	315
Population and Local Government Authorities	315
<b>The Urban Area of Perth-a statistical snapshot</b>	<b>316</b>
Retail	318
Manufacturing	318
Tourism	318
Infrastructure and Education Services	318
<b>Inner City Living</b>	<b>319</b>
<b>East Perth Redevelopment</b>	<b>319</b>

# REGIONAL PROFILE

---

## Perth Statistical Division

### Profile

The Perth Statistical Division is located in the south west corner of Western Australia. The City of Perth is the capital of Western Australia and is situated 19 kilometres upstream from the Port of Fremantle, along the Swan River. It is a unique capital in that it is closer to the capital cities of its South East Asian neighbours than to the other Australian capital cities.

The Perth Statistical Division extends north to the rapidly developing Shire of Wanneroo, east to Kalamunda and south to Rockingham. The Division's western border is the magnificent coastline of the Indian Ocean. Perth is the focal point for industrial, commercial and cultural activities for Western Australia.

### Climate

Perth enjoys a mediterranean climate and averages 8 hours of sunshine daily. The average temperature in summer is 29 degrees celsius maximum and 17 degrees celsius minimum. In winter the average temperature is 18 degrees celsius maximum with a 9 degrees celsius minimum. The Perth Statistical Division has an average annual rainfall of 869mm. June is the wettest month, averaging a rainfall of 182mm and January is the driest month with an average rainfall of 8.6mm.

### Population and Local Government Authorities

The population of the region at the Census of 6 August 1991 was 1,143,378 persons (almost 70 per cent of the total population of Western Australia) The Local Government Areas classified as cities in the region include Armadale, Bayswater, Belmont, Canning, Cockburn, Fremantle, Gosnells, Melville, Nedlands, Perth, Rockingham, South Perth, Stirling, Subiaco and Wanneroo. The region also includes the towns of Armadale, Bassendean, Cottesloe, East Fremantle, Mosman Park and Rockingham. Shires in this region are Peppermint Grove and Swan.

Table 21.1 shows that the majority of workers in the Perth Statistical Division were employed in the industries of Wholesale and retail trade, Community services, Finance, property and business services and Manufacturing.

### **The Urban Area of Perth-a statistical snapshot**

Urban Perth is the contiguous urban development bounded by the suburbs of Joondalup in the north, Glen Forrest and Roleystone in the east, and Coogee in the south. The total population of Urban Perth at 6 August 1991 was 1,018,868.

#### **People Born Overseas**

- In 1991 people born overseas comprised 33.8 per cent of the population, up 2.6 per cent from 1981.
- 'Recent arrivals' to Western Australia traditionally settle either in inner city suburbs such as Northbridge and Highgate, or in fringe areas such as Ocean Reef and Joondalup. In these areas more than half of the people have been born overseas.

#### **People not fluent in English**

- As in other Australian cities, migrants from non-English speaking backgrounds have tended to settle near the city. In Highgate, Northbridge, Perth City and North Perth over 10 per cent of residents are not fluent in English.

#### **Median age**

- The median age of Urban Perth has risen from 28 years in 1981 to 31 years in 1991.
- The median age of a suburb can be used to identify when that area was first developed. Established suburbs such as Claremont and Applecross have a median age greater than 38 years.
- The low median age of some areas may be linked to a high concentration of students or the presence of medium to high density housing.

#### **Travel to work**

- People in the inner city areas of Perth and Fremantle are less likely to use a car to get to work. In suburbs such as Northbridge, East Perth, Perth City and West Perth less than 55 per cent of employed people travel to work by car.
- People in the outer suburbs, are more likely to travel to work by car. The pattern seen in the northern suburbs is also reflected in new land developments to the south of Perth's urban centre that are not part of the map. In suburbs like North Lake, Singleton, Connolly, Joondalup and Waikiki more than 85 per cent travel to work by car.



**People who work in the CBD**

- Many people who work in the Central Business District (CBD) live close to the city. Suburbs such as Northbridge, Highgate, West Perth and East Perth all have more than 1 in 4 employed persons working in the CBD.
- People working in the CBD are more likely to be qualified than otherwise. High income suburbs such as Dalkeith, Subiaco and Mt Lawley, close to the city, have more than 1 in 4 workers working in the city.
- People living south of the river who are more likely to work in the CBD, live close to roads that give access to either the Narrows Bridge, or the Causeway.

**People living in medium or high density housing**

- The major concentration of medium or high density housing is close to the city centre. More than 65 per cent of people living in East Perth, West Perth and Highgate live in this type of dwelling, which is typically private rental accommodation.

**Aboriginal and Torres Strait Islander People**

- While Aboriginal and Torres Strait Islanders make up 2.6 per cent of the Western Australian population, only 1.0 per cent of the population of Urban Perth is Aboriginal or Torres Strait Islander. That 1.0 per cent, however, makes over 25 per cent of the state's Aboriginal and Torres Strait Islander population.
- The location of Aboriginal and Torres Strait Islander people in Urban Perth relates to the location of public housing, and medium to high density housing.

**Low Income Households**

- Low income households are likely to be found in areas where there is lower cost accommodation and many dwellings without vehicles. In suburbs such as Karawara, East Perth, Welshpool and Midland, more than 60 per cent of households have an income of less than \$25,000.
- The incidence of low income households is like to be less where there is a high occupancy rate and where many married women are in the workforce.

*Source: A Social Atlas of Perth (Catalogue No. 2840.5)*

**TABLE 21.1 – EMPLOYED PERSONS BY INDUSTRY**  
**PERTH STATISTICAL DIVISION, 1991**  
 Reference: Census of Population and Housing

<i>Industry</i>	<i>Male</i>	<i>Female</i>	<i>Persons</i>	<i>Per cent</i>
Agriculture, forestry, fishing, & hunting	3,688	2,356	6,044	1.3
Mining	5,142	1,818	6,960	1.4
Manufacturing	40,368	13,112	53,480	11.1
Electricity, gas, & water	4,804	687	5,491	1.1
Construction	25,240	4,650	29,890	6.2
Wholesale, retail trade	53,461	44,214	97,675	20.3
Transport, storage	17,363	4,854	22,217	4.6
Communication	5,193	1,951	7,144	1.5
Finance, property, and business services	30,116	29,673	59,789	12.5
Public administration, and defence	15,061	9,548	24,609	5.1
Community services	32,592	62,954	95,546	19.9
Recreation, services undefined	15,307	19,196	34,503	7.2
Non-classifiable economic unit	1,697	630	2,327	0.5
Industry not stated	18,938	15,454	34,392	7.2
<b>Total employed</b>	<b>268,970</b>	<b>211,097</b>	<b>480,067</b>	<b>100.0</b>

**Retail**

In the 1991-92 Retail and Services Census, in the Perth Statistical Division, 76,855 people were employed in shopfront retailing. There were 11,454 retail locations at 30 June 1992 and the turnover for 1991-92 was \$7,036.2m.

**Manufacturing**

In the Perth Statistical Division in the 1991-92 financial year, there were 3,094 manufacturing establishments. Total employment in manufacturing was 48,867 persons and the total turnover was \$9,099.3m.

**Tourism**

Major attractions include King's Park, Perth City Centre including London Court, the Deanery and the Barracks Arch, Perth Zoo, Northbridge, Rottnest Island, Fremantle, Underwater World, Swan River and Vineyard Cruises, Burswood Casino, the beaches for swimming and fishing, Pioneer Village in Armadale, Caversham Wildlife Park and Zoo and the wineries of the Swan Valley. A more detailed listing of some of the main tourist attractions within 60 kilometres of Perth can be found in Chapter 10.

**Infrastructure and  
Education Services***Transport*

Perth has a comprehensive public transport system. Transperth buses service the entire Statistical Division. State-owned Westrail and various privately owned companies operate longer distance intra and interstate bus services. Transperth trains run from Perth to Fremantle, Midland, Armadale and north as far as

### Inner City Living

#### Contribution by the Department of Planning and Urban Development

Inner city living - a unique opportunity to live in a dynamic environment, within walking distance of one's workplace and within easy access to entertainment, cultural activities, shops and restaurants.

The purpose of inner city living is to bring life into the city of Perth. It was felt by the Western Australian Government and the public that the city was becoming an unsafe and unpopular place outside retail trading hours with little to entice people. Northbridge has traditionally attracted most of the evening and weekend crowd.

The *Inner City Living* committee was formed by the Department of Planning and Urban Development. It provides interested parties with a developers' advisory service, a marketing service and an intending residents register (IRR).

Inner city housing is designed to be unlike suburban life, with varied building forms and density allowing inner city lovers to experience alternative housing. Some of these options are building conversions; shoptop housing; single unit developments; grouped dwellings such as duplex, villa and townhouse units; multiple dwellings or apartments; SROs (single room occupancies) which are usually located in old hotels and involve the sharing of facilities such as bathrooms and kitchens; co-operative housing and serviced apartments.

The *Inner City Living* committee promotes building recycling, where buildings are made from recycled materials such as railway sleepers, old bricks, water tanks and so on, and also promotes the conversion of historic or heritage buildings as a practical way of preserving and enhancing the features of the building.

### East Perth Redevelopment

The East Perth Redevelopment Authority is transforming derelict and underutilised industrial land into a vibrant new residential, retail and commercial district. A superbly planned urban village, called Claisebrook, is being constructed just minutes from the city.

Up to 1,000 new residences will be built in the area over the next few years, together with shops, restaurants and cafes, offices and a technology precinct complementing the newly built Advanced Manufacturing Technologies Centre.

The Authority is now well advanced in its project to rejuvenate the area. Road patterns have been realigned to improve traffic flows and reduce the impact of vehicles on the area, major power lines have been laid underground, drains and sewers upgraded and waste materials from industry and utilities removed.

Part of a regional drainage system has been substantially upgraded, creating Claisebrook Cove, a sparkling inlet from the Swan River replacing the long forgotten lakes and lagoons of a bygone era. The Cove is part of a central green landscaped spine for the development, itself part of an extensive greenway system being created in the city.

This transformation will breathe new life and vibrancy to East Perth. Such vision and innovation will provide an exciting new perspective to inner city living.

Currambine. It is intended that the train line will eventually extend south to Rockingham and Mandurah. Westrail also operates an interstate train service from its East Perth Terminal.

A transperth ferry makes the scenic trip from Barrack St Jetty in the City to Mends St Jetty in South Perth every half hour. Various privately owned ferries run between the mainland and Rottnest Island.

Many of the international airlines include Perth as one of their destinations. Apart from Australia's own international airline, Qantas, other international airlines including Perth as a stopover include Air Mauritius, British Airways, Air New Zealand, Cathay Pacific, Garuda, Royal Thai Airways, Malaysian, Royal Brunei, Singapore Airlines, Sempati Air and South African Airways. Perth Domestic Airport houses both Ansett and Qantas Domestic (formerly Australian Airlines). Smaller domestic airlines such as Skywest and Rottnest Airbus also operate from the domestic airport.

### *Education*

There is a wide range of educational services from pre-schools through to TAFE colleges and universities. The universities in this division are of an international standard and include the University of Western Australia, Murdoch, Curtin, Edith Cowan and the new Catholic university, the University of Notre Dame, in Fremantle. Claremont campus of Edith Cowan caters for foreign students learning English, as does the Western Australian International College.

### *Communications*

The state newspaper, *The West Australian*, as well as numerous community newspapers, are produced in the Perth Statistical

Division. Television services are provided by the Australian Broadcasting Corporation (ABC), the Special Broadcasting Service (SBS) and commercial stations 7, 9 and 10.

The radio stations broadcasted in or to Perth include Radio National 6WF and 6WN, public station 6NR and Commercial Stations 1080 6IX, 94.5 KYFM, PMFM 92.9, 6PR, 6RTR, 6WS, 96.1 MMM and JJJ.

### *Health*

The major public hospitals in Perth include Royal Perth, Sir Charles Gairdner and Fremantle. Princess Margaret specializes in child illness while King Edward Memorial is predominantly a maternity hospital and is exclusively for women.





# INTERNATIONAL and interstate trade

## Chapter 20

# INTERNATIONAL AND INTERSTATE TRADE

---

Contents	Page
Pattern of International Trade	303
The Collection of ABS International Merchandise Trade and Shipping Statistics	305
<b>Western Australia's Merchandise Trade with Japan</b>	<b>306</b>
Concepts and Definitions of International Trade Statistics	312
References	312



## Chapter 20

# INTERNATIONAL AND INTERSTATE TRADE

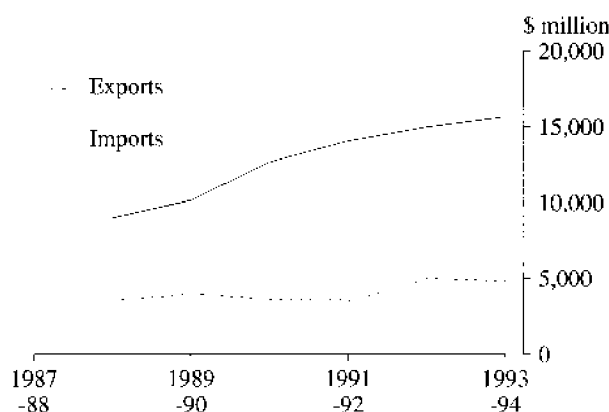
---

### Pattern of International Trade

The value of Western Australian exports has increased continuously since 1966:

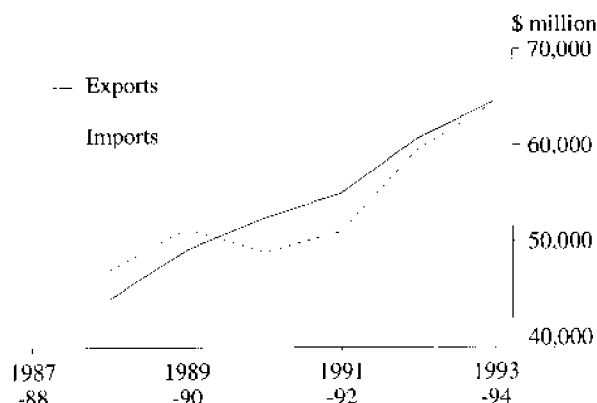
- in 1993-94, exports were over three times the value of imports. The ratio of exports to imports has increased over the last two years from 3.02 (1992-93) to 3.27 (1993-94);
- Western Australia is still heavily reliant on the export of commodities such as gold bullion, iron ore, wheat, natural gas, petroleum and petroleum products, and wool. The top four major commodity exports from Western Australia have, over the last three financial years, represented a significant proportion of total Western Australian exports to foreign countries. In 1991-92, the proportion was 53.5 per cent; in 1992-93, 55.5 per cent and in 1993-94, it was 52.5 per cent;
- exports continue to make an increasing contribution to Western Australia's Gross State Product (GSP), at market prices; in 1990-91, exports comprised 32.5 per cent of GSP; in 1991-92, 34.6 per cent; and in 1992-93, 35.0 per cent.

DIAGRAM 20.1  
VALUE OF EXPORTS AND IMPORTS  
WESTERN AUSTRALIA



Source: FTRACCS

DIAGRAM 20.2  
VALUE OF EXPORTS AND IMPORTS  
AUSTRALIA



Source: Catalogue No. 5422.0

Western Australia continues to be Australia's major exporting State and its contribution, in percentage terms, to total Australian exports remains significantly high. In 1991-92, Western Australia was ranked first with 24 per cent of total exports; by 1992-93, it remained the biggest export supplier by increasing its contribution to 25 per cent and by 1993-94, although dropping back to 24 per cent, was still the biggest contributor to Australian exports. Diagrams 20.1 and 20.2 compare the different trends in export and import performance between Western Australia and Australia.

#### Exports

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 1993-94, the top ten export markets accounted for 64.1 per cent of total exports, a decrease of 2.3 per cent since 1991-92 (when the market share was only 66.4 per cent);
- Western Australia's export markets are heavily concentrated in the Asia region. The ASEAN nations (Singapore, Thailand, Malaysia, Indonesia, the Philippines and Brunei), combined with the major North Asia economies (Japan, Republic of Korea, Hong Kong, China and Taiwan) received 55.7 per cent (or \$8,717 million) of total exports in 1993-94.

Western Australia's main exports in 1993-94 were:

- gold bullion (\$3,286 million or 21.0 per cent of total exports);
- iron ore (\$2,765 million or 17.7 per cent of total exports);

- wheat (\$1,122 million);
- natural gas (\$1,053 million);
- petroleum and petroleum products (\$930 million); and
- wool (\$655 million).

### *Imports*

The top three import suppliers to Western Australia in 1993-94 were Japan, the United States of America and the United Arab Emirates. The United States of America has continued to be our main source of imported goods and services over the last five financial years. As with exports, the bulk of imports have tended to be sourced from a few major suppliers. The top ten importing countries represented 73.9 per cent of all imports to Western Australia. Major North Asia economies (Japan, Republic of Korea and China), combined with European countries such as France, Germany and the United Kingdom, represent major importing regions.

Road vehicles (14.4 per cent), petroleum and petroleum products (14.2 per cent), and machinery specialised for particular industries (9.0 per cent) were, in dollar terms, the largest imports in 1993-94.

### **The Collection of ABS International Merchandise Trade and Shipping Statistics**

ABS international merchandise trade and shipping statistics are collected via the following process:

- the Australian Customs Service (ACS) receives documentation submitted by exporters and importers (or their agents), as required by the Customs Act;
- this documentation includes information about the *type*, *quantity* and *value* of goods being imported or exported;
- this information is used by the ACS to assess and collect Customs duty and other revenue payable on imported and exported goods and to facilitate the monitoring and control of the physical movement of goods into and out of Australia;
- once the ACS has finalised processing this documentation for its own purposes, the information is passed on to the ABS for statistical processing; and
- after checking for errors and making any necessary amendments, the statistics are aggregated according to a number of classifications and are then released so they can be accessed and utilised by users.

### Western Australia's Merchandise Trade with Japan

Over the period 1988-89 to 1993-94, the value of total trade (exports and imports) between Western Australia and Japan has grown in nominal terms by 108 per cent - from \$2,321 million in 1988-89 to \$4,827 million in 1993-94.

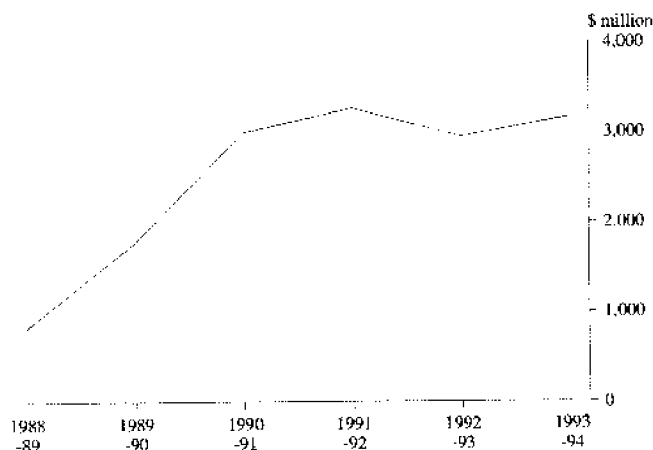
In 1993-94, Japan was the most important destination for Western Australia's exports, taking over a quarter of the State's total merchandise exports (25.5 per cent).

Exports to Japan from Western Australia continue to be dominated by natural resources such as:

- iron ore (\$1,291 million or 32.3 per cent);
- natural and manufactured gas (\$1,000 million or 25.0 per cent);
- gold bullion (\$692 million or 17.3 per cent);
- petroleum and petroleum products (\$202 million or 5.0 per cent); and
- fish, crustaceans and molluscs (\$195 million or 4.9 per cent).

Western Australia has recorded a trade surplus (excess of exports over imports) with Japan in each of the years from 1988-89 to 1993-94. In 1988-89, the trade surplus was \$826,505, and by 1991-92, this had increased to \$3,267 million. However, the trade surplus declined in 1992-93 to \$2,952 million, then rose in 1993-94 to \$3,170 million.

DIAGRAM 20.3  
TRADE SURPLUS WITH JAPAN

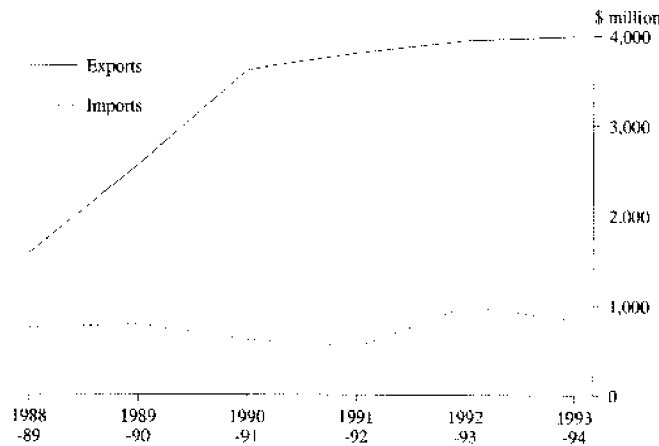


Source: FTRACCS

Of total Australian exports to Japan, Western Australia was the major exporting State in 1993-94. Western Australia's exports comprised 25.1 per cent (\$3,999 million) of total Australian exports to Japan (\$15,907 million). New South Wales was the second largest exporting State to Japan (\$3,626 million or 22.8 per cent).

Over the period 1988-89 to 1993-94, the value of Western Australian exports to Japan has increased over two and a half times - from \$1,574 million in 1988-89 to \$3,999 million in 1993-94. The value of exports has been increasing steadily each year over this time period and this trend looks certain to continue in future years.

**DIAGRAM 20.4**  
**VALUE OF WESTERN AUSTRALIAN**  
**EXPORTS AND IMPORTS TO JAPAN**



Source: FTRACCS

As a source of imports, Japan is Western Australia's second largest supplier (after the USA), providing 17.5 per cent of Western Australia's total merchandise imports in 1993-94.

TABLE 20.1 – VALUE OF OVERSEAS IMPORTS INTO AND  
EXPORTS FROM WESTERN AUSTRALIA CLASSIFIED  
ACCORDING TO ORIGIN OR DESTINATION: 1993-94 (\$'000)

<i>Origin or destination</i>	<i>Imports</i>	<i>Exports</i>
Argentina	3,463	3,109
Austria	11,230	1,156
Bahrain	557	11,278
Belgium-Luxembourg	25,186	158,360
Brazil	15,839	775
Canada	75,765	29,735
Chile	4,834	6,928
China	122,269	664,576
Christmas Island	221	18,113
Czech Republic	7,649	6,586
Denmark	9,136	2,800
Egypt	125	4,062
Fiji	472	4,815
Finland	46,734	31,490
France	121,802	171,894
Germany	220,256	249,159
Hong Kong	30,201	697,657
India	28,236	51,631
Indonesia	86,229	212,504
Iran	583	15,788
Israel	10,836	1,965
Italy	116,022	137,834
Japan	828,554	3,998,793
Jordan	13,360	20,839
Korea, Republic of	255,702	1,203,542
Kuwait	32,180	28,369
Malaysia	97,062	148,055
Mexico	1,568	7,388
Netherlands	35,582	91,983
New Zealand	180,587	139,845
Norway	11,204	4,625
Pakistan	2,825	51,699
Papua New Guinea	10,478	17,899
Philippines	9,609	45,022
Portugal	2,151	12,372
Qatar	5,032	10,832
Russian Federation	3,072	3,960
Saudi Arabia	40,987	48,261
Singapore	241,454	1,008,790
South Africa	55,475	16,095
Spain	34,406	87,072
Sweden	51,163	2,004
Switzerland	48,621	128,607
Taiwan	106,414	440,641
Thailand	43,508	288,806
Turkey	3,809	25,330
United Arab Emirates	388,393	105,188
United Kingdom	248,683	1,180,237
United States of America	934,061	301,283
Vietnam	5,108	50,621
Yemen	3,322	12,636
Other countries, country unknown and re-exports	40,354	3,628,477
Ships' stores	—	68,065
<b>Total overseas trade</b>	<b>4,791,817</b>	<b>15,659,551</b>

# International and Interstate Trade

**TABLE 20.2 - VALUE OF EXPORTS FROM WESTERN AUSTRALIA - SELECTED MAJOR COMMODITIES MAIN COUNTRIES OF DESTINATION (a): 1993-94**  
(\$'000)

<i>Commodity and destination</i>	<i>Value</i>	<i>Commodity and destination</i>	<i>Value</i>
Wheat—		Natural gas—	
<b>Total exports</b>	<b>1,122,434</b>	Japan	999,641
Wool—		Spain	26,633
China	148,165	Korea, Republic of	13,782
France	87,669	Belgium-Luxembourg	13,040
Italy	82,067	<b>Total exports</b>	<b>1,053,153</b>
Japan	66,400	Fish, crustaceans, molluscs etc—	
Germany	57,963	Japan	195,131
United States of America	47,000	Taiwan	118,359
India	25,650	United States of America	47,249
Taiwan	23,124	Hong Kong	33,254
United Kingdom	18,790	Singapore	8,672
Malaysia	15,270	France	2,024
Korea, Republic of	10,810	Malaysia	1,559
<b>Total exports</b>	<b>655,173</b>	Korea, Republic of	1,285
Iron ore—		<b>Total exports</b>	<b>413,294</b>
Japan	1,290,785	Live animals (excluding fish)—	
Korea, Republic of	447,311	United Arab Emirates	41,649
China	434,629	Oman	20,739
Taiwan	161,789	Jordan	19,166
United Kingdom	94,347	Kuwait	18,919
Germany	91,723	Indonesia	13,728
France	67,680	Qatar	9,355
Italy	30,942	<b>Total exports</b>	<b>162,756</b>
Pakistan	30,927	Gold coin—	
Romania	15,722	Hong Kong	75,253
<b>Total exports</b>	<b>2,765,138</b>	Germany	64,238
Gold bullion—		United States of America	30,324
Japan	692,065	Switzerland	29,728
Singapore	587,681	Japan	26,839
United Kingdom	582,581	Taiwan	14,150
Korea, Republic of	542,954	<b>Total exports</b>	<b>248,384</b>
Thailand	226,861	Dyeing, tanning and colouring materials—	
Hong Kong	456,029	Korea, Republic of	49,220
Switzerland	92,771	Japan	23,854
Taiwan	27,186	Thailand	20,321
Malaysia	17,903	Philippines	17,952
Laos	17,741	Hong Kong	14,940
United Arab Emirates	14,481	Taiwan	14,765
<b>Total exports</b>	<b>3,285,699</b>	Singapore	14,067
Petroleum and petroleum products—		Indonesia	12,968
Singapore	268,264	<b>Total exports</b>	<b>244,933</b>
Japan	201,758	Transport equipment—	
Indonesia	122,326	China	48,731
New Zealand	87,964	Hong Kong	40,111
Korea, Republic of	49,674	United Arab Emirates	23,852
Vietnam	46,279	Vanuatu	23,000
United States of America	36,167	Singapore	12,542
Taiwan	21,957	<b>Total exports</b>	<b>202,563</b>
French Polynesia	14,065		
<b>Total exports</b>	<b>930,065</b>		

TABLE 20.3 – VALUE OF INTERNATIONAL TRADE WITH SELECTED COUNTRIES BY SELECTED DIVISIONS, WESTERN AUSTRALIA: 1993-94 (\$'000)

Division	Description	Imports				Exports			
		United States of Japan	America	United Kingdom	All countries	United States of Japan	America	United Kingdom	All countries
01	Meat and meat preparations	—	—	—	570	15,591	36,028	8,874	163,168
03	Fish, (not marine mammals) crustaceans, molluscs and aquatic invertebrates, and preparations thereof	927	271	390	52,210	195,131	47,249	653	413,294
04	Cereals and cereal preparations	427	1,008	1,201	10,168	18,302	16	12	1,156,574
05	Vegetables and fruit	252	5,927	644	33,338	264	33	1,951	73,760
08	Feeding stuff for animals (excluding unmilled cereals)	—	141	8	5,275	21,516	14	18	50,680
24	Cork and wood	—	2,383	45	14,138	65,790	1,205	4,663	76,913
26	Textile fibres and their wastes (not manufactured into yarn or fabric)	381	292	1,441	8,507	66,400	47,005	18,790	655,297
27	Crude fertilisers (excluding those of Divisions 56) and crude minerals (excluding coal, petroleum and precious stones)	272	1,543	278	21,379	25,179	4,544	5,510	232,124
28	Metalliferous ores and metal scrap (a)	234	864	68	3,326	1,387,861	18,312	94,528	2,999,841
29	Crude animal and vegetable materials, n.e.s.	2,394	955	344	10,937	9,117	1,864	103	39,339
33	Petroleum, petroleum products and related materials	159	15,802	309	678,500	201,758	36,167	2	930,065
34	Gas, natural and manufactured	—	1	10	1,403	999,641	—	—	1,053,153
51	Organic chemicals (a)	5,709	13,941	32,537	107,021	59	15	11	717
52	Inorganic chemicals (a)	1,733	19,907	1,405	47,134	20,041	13,595	82	87,815
53	Dyeing, tanning and colouring materials	144	2,596	573	7,009	23,854	5,260	2,222	244,933
56	Fertilisers (excl. crude)	924	21,917	346	101,640	—	—	—	526
58	Plastics in non-primary forms (a)	2,049	7,047	1,262	26,089	181	568	221	4,732
59	Chemical materials and products, n.e.c.	8,269	13,200	12,519	58,437	—	124	40	5,789
62	Rubber manufactures, n.e.s.	78,633	9,755	4,551	150,936	109	30	20	3,757
64	Paper, paperboard and articles of paper pulp, of paper or of paperboard (a)	5,401	4,297	3,305	71,509	3	20	3	3,076
65	Textile yarn, fabrics, made-up articles n.e.s. and related products (a)	2,535	3,231	2,522	50,793	52	341	507	8,430
66	Non-metallic mineral manufactures, n.e.s. (a)	9,323	6,481	13,417	103,146	28,369	7,665	50,254	168,820
67	Iron and steel	28,299	8,541	9,635	110,029	72	193	32	7,900
68	Non-ferrous metals (a)	891	4,791	1,514	64,087	14	1,269	—	144,185
69	Manufactures of metal, n.e.s. (a)	9,185	29,030	9,084	127,875	719	9,154	925	45,000
71	Power generating machinery and equipment	36,041	54,997	15,337	189,682	86	1,174	19,352	28,650
72	Machinery specialised for particular industries (a)	68,168	181,699	17,574	432,301	815	6,504	1,050	61,930
74	General industrial machinery and equipment, n.e.s. and machine parts, n.e.s. (a)	25,848	83,806	15,970	253,916	344	1,942	1,340	59,134
75	Office machines and automatic data processing equipment	7,541	146,741	2,724	211,807	50	882	943	25,971
76	Telecommunications and sound recording and reproducing apparatus and equipment	17,078	20,768	4,273	72,457	15	425	360	19,860
77	Electrical machinery, apparatus and appliances, n.e.s. and electrical parts thereof (c)	14,793	34,336	19,595	133,816	294	637	225	17,605
78	Road vehicles (incl. air cushion vehicles)	474,850	101,732	12,390	689,956	130	300	148	15,222
79	Transport equipment (excl. road vehicles)	569	27,661	1,692	206,140	29	1,283	30	202,563
87	Professional, scientific and controlling instruments and apparatus, n.e.s.	4,951	38,357	12,021	76,450	306	1,333	809	11,717
97	Gold, non-monetary (excl. gold ores and concentrates)	—	—	5	93,681	692,065	7,287	582,581	3,285,699
Total (b)		839,820	952,842	252,930	4,791,817	3,998,793	994,493	1,283,688	15,659,551

(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. (c) Including non-electrical counterparts n.e.s. of electrical household type equipment.



# International and Interstate Trade

**TABLE 20.4 – VALUE OF INTERSTATE IMPORTS AND EXPORTS (a) — SELECTED DIVISIONS, WESTERN AUSTRALIA (\$'000)**

Division Description	Imports			Exports		
	1990-91	1991-92	1992-93	1990-91	1991-92	1992-93
00 Live animals chiefly for food	4,849	13,455	2,822	7,101	7,097	8,485
01 Meat and meat preparations	82,288	56,989	51,028	18,193	20,019	17,918
02 Dairy products and eggs	100,222	102,284	108,545	n.p.	n.p.	n.p.
03 Fish, crustaceans and molluscs, and preparations	15,727	19,463	16,925	31,827	2,896	30,790
04 Cereals and cereal preparations	109,616	133,233	139,571	4,357	9,778	3,766
05 Vegetables and fruit	138,974	115,745	125,147	12,317	7,417	15,080
06 Sugar, sugar preparations and honey	68,544	56,748	56,900	n.p.	n.p.	n.p.
07 Coffee, tea, cocoa, spices and manufactures	94,352	93,501	120,573	n.p.	n.p.	n.p.
11 Beverages	116,038	97,461	109,796	n.p.	n.p.	n.p.
12 Tobacco and tobacco manufactures	200,796	163,231	159,215	—	n.p.	n.p.
28 Metalliferous ores and metal scrap	n.p.	n.p.	n.p.	n.p.	937,318	955,410
51 Organic chemicals	14,247	15,751	12,605	n.p.	n.p.	n.p.
52 Inorganic chemicals	17,617	33,342	22,364	n.p.	n.p.	n.p.
53 Dyeing, tanning and colouring materials	49,583	41,224	41,015	n.p.	n.p.	n.p.
54 Medicinal and pharmaceutical products	161,863	177,632	230,854	n.p.	n.p.	n.p.
55 Essential oils and perfume materials; toilet, polishing and cleansing preparations	181,105	182,794	180,487	418	n.p.	n.p.
58 Plastics in non-primary form	50,103	58,019	62,313	15,190	30,292	49,383
59 Chemical materials and products, n.e.s.	168,394	155,535	166,899	96,353	82,867	92,143
62 Rubber manufactures, n.e.s.	57,396	65,797	63,770	n.p.	4,645	3,510
63 Cork and wood manufactures (excluding furniture)	16,480	14,905	22,227	n.p.	n.p.	n.p.
64 Paper, paperboard, and articles of paper pulp, paper or of paperboard	198,185	210,805	217,190	16,495	11,440	10,199
65 Textile yarn, fabrics, made-up articles n.e.s., and related products	144,889	141,130	155,094	33,968	55,451	60,390
66 Non-metallic mineral manufactures, n.e.s.	48,761	56,429	68,663	20,793	21,506	19,128
67 Iron and steel	299,310	344,215	342,779	19,538	31,188	30,461
68 Non-ferrous metals	91,753	76,420	84,162	n.p.	n.p.	8,955
69 Manufactures of metal, n.e.s.	208,146	218,786	250,831	114,372	128,825	128,906
71 Power generating machinery and equipment	50,246	69,717	54,991	9,001	10,921	13,267
72 Machinery specialised for particular industries	253,494	257,924	297,421	35,024	40,350	53,104
73 Metalworking machinery	10,869	10,686	12,456	5,130	4,404	3,281
74 General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	252,332	256,488	262,110	65,895	59,665	65,139
75 Office machines and automatic data processing equipment	159,489	141,466	133,688	11,327	n.p.	n.p.
76 Telecommunications and sound recording and reproducing apparatus and equipment	116,413	118,414	147,084	9,199	8,279	6,196
77 Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (c)	305,552	260,957	285,250	27,799	22,698	22,827
78 Road vehicles (including air cushion vehicles)	833,690	906,514	967,244	38,369	27,931	34,480
81 Sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	20,594	18,576	22,151	n.p.	n.p.	n.p.
82 Furniture and parts	29,041	28,867	30,800	35,098	38,471	33,518
84 Articles of apparel and clothing accessories	255,206	318,638	308,842	36,883	31,184	16,781
85 Footwear (excluding parts)	80,351	71,224	77,896	4,561	6,713	n.p.
87 Professional, scientific and controlling instruments and apparatus, n.e.s.	99,088	102,356	96,779	6,942	7,008	n.p.
88 Photographic apparatus, equipment and supplies and optical goods, n.e.s., watches and clocks	91,419	87,207	83,183	3,085	3,490	n.p.
<b>Total (a) (b)</b>	<b>5,861,550</b>	<b>6,043,695</b>	<b>6,368,752</b>	<b>1,970,058</b>	<b>2,533,644</b>	<b>2,457,598</b>

(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. (c) Including non-electrical counterparts n.e.s. of electrical household type equipment.

### Concepts and Definitions of International Trade Statistics

Merchandise Exports are defined as all goods which *subtract* from the stock of material resources in Australia as a result of their movement out of the country.

Re-exports are goods, materials or articles originally imported which are exported in either the same condition in which they were imported or after undergoing repair or minor operations which leave them essentially unchanged. Minor operations include blending, packaging, bottling, cleaning, sorting etc. An example of re-exported goods would be brandy imported from France to Australia in bulk, which is then bottled and exported to New Zealand. The brand would be classified as re-exports with the country of origin as France.

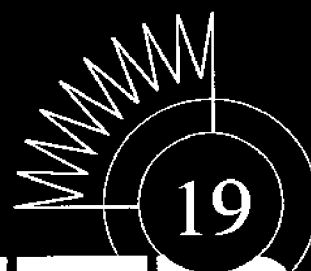
Merchandise Imports are defined as all goods which *add* to the stock of material resources in Australia as a result of their movement into the country.

### References

*ABS Publications*

International Merchandise Trade Australia (5422.0)

FTRACCS- Electronic Service



# CONSUMER

and producer prices

## Chapter 19

# CONSUMER AND PRODUCER PRICES

---

Contents	Page
1993-94 in Review	297
House Price Indexes	298
Producer Price Indexes	299
Foreign Trade Price Indexes	299
Average Retail Prices for Selected Commodities	299
References	299

# CONSUMER AND PRODUCER PRICES

---

The Consumer Price Index (CPI) has been an important economic indicator for many years and actions related to movements in it have had direct or indirect effects on all Australians. It has been used as a starting point by parties to national wage hearings, for indexation of pension and superannuation payments and for adjusting insurance coverage, rental agreements and payments for child support.

The CPI was first compiled in 1960 with the index numbers being compiled retrospectively to 1948. The Index was designed to provide a broad measure of quarterly changes in retail prices of a fixed basket of goods and services purchased by metropolitan wage and salary earner households in each of the state capital cities, Darwin and Canberra. The basket is made up of 8 major commodity groups: food, clothing, housing, household equipment and operation, transportation, tobacco and alcohol, health and personal care, and recreation and education.

To take account of changes in spending habits and in the range of goods and services available to consumers, the CPI is reviewed at approximately five yearly intervals. Following each review a new series CPI with its changed composition and weighting pattern is linked to the previous series to form one continuous series.

### 1993-94 in Review

From the June quarter 1993 to the June quarter 1994, the CPI for Perth increased from 106.8 to 109.1 index points or 2.2 per cent. The major contributors to this change were tobacco and alcohol up 14.0 per cent; transportation up 3.9 per cent; health and personal care which increased by 2.6 per cent; housing down 0.1 per cent and clothing down 0.4 per cent. Increased state and federal government taxes including excise charge were the major contributors to the increase in tobacco and alcohol. There were increases in the prices of motor vehicles, petrol prices, the cost of parts and labour for vehicle repair and maintenance, and vehicle insurance. Higher dental fees and increases in prices of pharmaceuticals were major contributors to the higher cost of health and personal care. Mortgage interest rates continued to decrease over the year but the drop was somewhat offset by increases in other housing costs such as rents, government rates and charges and insurance.

The CPI Index for the eight capital cities increased by 1.7 per cent compared to the 2.2 per cent for Perth. Contributing the most to the annual increase for the eight capital cities were tobacco and alcohol up 6.4 per cent; the cost of health and personal care which increased by 4.4 per cent; transportation up 2.8 per cent; clothing down 1.6 per cent and housing down 0.8 per cent.

**TABLE 19.1 – CONSUMER PRICE INDEX, ALL GROUPS INDEX  
NUMBERS**  
(Base year 1989-90 = 100)  
Reference: Catalogue No. 6401.0

Period	Perth		Weighted average of eight capital cities	
	Index number	Percent change from preceding period	Index number	Percent change from preceding period
1991-92	105.9	0.8	107.3	1.9
1992-93	106.2	0.3	108.4	1.0
1993-94	108.5	2.2	110.4	1.8
Quarter—				
1992 September	105.5	-0.1	107.4	0.1
December	106.1	0.6	107.9	0.5
1993 March	106.4	0.3	108.9	0.9
June	106.8	0.4	109.3	0.4
September	107.9	1.0	109.8	0.5
December	108.5	0.6	110.0	0.2
1994 March	108.6	0.1	110.4	0.4
June	109.1	0.5	111.2	0.7

**TABLE 19.2 – SELECTED HOUSING PRICE INDEXES: PERTH**  
(Base of Each Index: 1989-90 = 100)  
References: Catalogue No's. 6408.0, 6416.0

Period number	Materials Used in House building		Project Houses		Established Houses	
	Index period	% change from preceding number	Index period	% change from preceding number	Index number	% change from preceding period
1991-92	149.3	0.4	90.6	-1.4	94.1	-0.7
1992-93	150.5	0.8	92.8	2.4	98.4	4.6
1993-94	153.5	2.0	96.2	3.7	104.7	6.4
1992 September	106.6	0.0	91.7	0.5	96.9	1.9
December	106.5	-0.1	92.7	1.1	98.4	1.5
1993 March	107.0	0.5	93.0	0.3	99.1	0.7
June	107.7	0.7	93.8	0.9	99.3	0.2
September	108.4	0.6	94.5	0.7	101.1	1.8
December	108.5	0.1	95.2	0.7	103.7	2.6
1994 March	109.0	0.5	96.2	1.1	107.7	3.9
June	110.2	1.1	98.8	2.7	106.4	-1.2

**House Price Indexes** House Price Indexes are compiled quarterly for use in calculating the mortgage interest charges component of the CPI. Separate indexes are constructed for project and established houses.

**Producer Price Indexes** Producer Price Indexes measure changes in the prices of goods moving between sectors of the Australian economy. The present range of producer price indexes was developed and produced progressively from the 1960's. The indexes relate to the building, manufacturing and mining sectors of the economy and include the Price Indexes of Materials Used in House Building, Price Indexes of Materials Used in Other Than House Building, Price Indexes of Materials Used in Manufacturing Industries, Price Indexes of Articles Produced by Manufacturing Industry and Price Indexes of Materials Used in Coal Mining.

**Foreign Trade Price Indexes** Foreign Trade Price Indexes measure changes in the prices of goods entering and leaving Australia and comprise an Export Price Index first published in 1901 and an Import Price Index compiled from September 1981 which replaced the Reserve Bank's Import Price Index which was published from 1928 until September 1982.

**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. 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).

### 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*

*Measuring Australia's Economy: a student guide (1360.0)*

*Price Index of Materials Used in Building Other than House Building (6407.0)*

*Price Index of Materials Used in House Building (6408.0)*

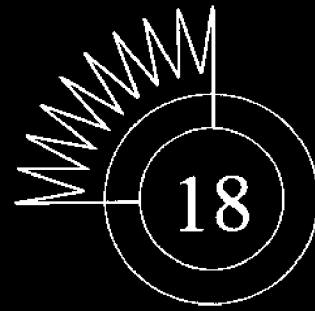
*Price Index of Articles Produced by Manufacturing Industry (6412.0)*

*Price Index 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)*





# LABOUR market

## Chapter 18

# LABOUR MARKET

---

Contents	Page
The Labour Force	283
Teenage Unemployment	284
The Composition of the Labour Force	284
Employment by Industry	287
Labour Force Supplementary Surveys	288
Job Vacancies	288
Wages and Earnings	289
Labour Costs	291
Industrial Disputes	291
References	293

## Chapter 18

# 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.

Each month the survey records information from 65,000 individuals throughout Australia. A random sample is taken of 29,000 private dwellings (4,000 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 18.1 shows the effect of the recovery from the recession on the labour force. The number of males seeking work decreased by nearly 16.0 per cent between May 1993 and May 1994. The number of unemployed females fell marginally from 31,200 to 30,800.

The seasonally adjusted unemployment rate for males decreased from 9.7 per cent in May 1993 to 8.0 per cent in May 1994. The female unemployment rate fell from 9.3 per cent to 8.9 per cent over the same period.

**TABLE 18.1 – LABOUR FORCE STATUS (Aged 15 years and over)**  
**MAY**  
('000 persons)  
Reference: Catalogue No. 6203.0

<i>Labour force status</i>	1992 (a)	1993	1994
<b>MALES</b>			
Civilian population	632.9	642.2	652.8
Labour force—	485.0	493.1	500.1
Employed—			
full-time	388.1	401.2	412.3
part-time	40.4	43.0	46.7
Unemployed	56.4	48.9	41.1
Unemployment rate (per cent)—			
original	11.6	9.9	8.2
seasonally adjusted	11.3	9.7	8.0
Participation rate (per cent)	76.6	76.8	76.6
<b>FEMALES</b>			
Civilian population	638.2	647.9	658.6
Labour force—	342.0	346.5	357.4
Employed—			
full-time	168.7	169.5	177.6
part-time	140.9	145.8	149.0
Unemployed	32.4	31.2	30.8
Unemployment rate (per cent)—			
original	9.5	9.0	8.6
seasonally adjusted	9.8	9.3	8.9
Participation rate (per cent)	53.6	53.5	54.3

(a) 1992 data revised based on 1991 Census benchmarks.

Western Australia's participation rate (65.4 per cent) remains the highest of all States. As at May 1994 the participation rate for males was 76.6 per cent and for females was 54.3 per cent.

### Teenage Unemployment

Table 18.2 demonstrates the continuing high level of unemployment in the 15-19 year age group. The unemployment rate for this age group has decreased marginally from 22.6 per cent in May 1993 to 21.2 per cent in May 1994 for males, and from 23.5 per cent to 23.1 per cent for females in the same period.

The Labour Force Survey estimated there were 125,816 people in the 15-19 year age group in Western Australia in May 1994; of these 28,902 were employed full-time and 32,656 worked part-time. A total of 16,608 were unemployed. A total of 47,650 were not in the labour force.

### The Composition of the Labour Force

The composition of the labour force (Table 18.3) differs for males and females. Of the estimated 459,100 employed males, 20.8 per cent are employers or self-employed and 80.7 per cent are wage and salary earners. Of the estimated 326,600 employed females, 13.4 per cent are employers or self employed and 85.5 per cent are wage and salary earners.

### Long Term Unemployment (LTU)

Contributed by the Western Australian Department of Training

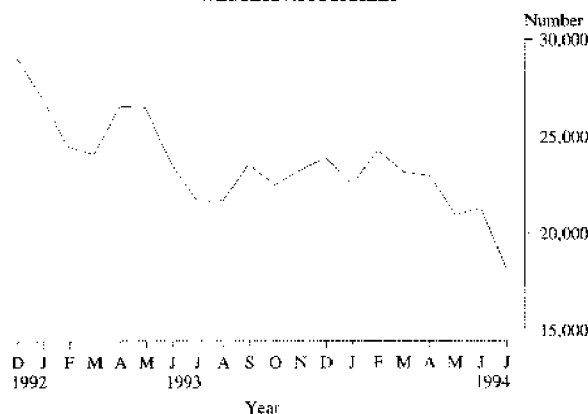
A major State and Commonwealth priority is to find jobs for unemployed Australians. Typically, the unemployment rate is used to identify and measure the extent of unemployment. However, to understand the true magnitude and nature of the problem of unemployment, the duration spent out of work by those who are unemployed needs to be determined.

The longer a person remains out of work the more difficult it is to find employment. They lose touch with employers, work mates, job networks and lose work skills. Apart from the financial loss, people experiencing long, continuous periods of unemployment suffer psychologically and socially. Often this can lead to:

- stress;
- loss of self-confidence; and
- poor physical health.

In December 1992, the number of LTU reached a high of 29,100 persons, comprising 31.9 per cent of all unemployed in the State. By July 1994, LTU had fallen to 18,100 persons and 26.8 per cent of total unemployment. Between December 1992 and July 1994, LTU declined by 37.8 per cent while the total number of unemployed decreased by 26.1 per cent.

DIAGRAM 18.1  
LONG TERM UNEMPLOYMENT  
WESTERN AUSTRALIA



Source: Labour Force Estimates (Microfiche)

Despite such a strong improvement in the number of LTU over the past 18 months, the existing pool of long term jobless is expected to be closely monitored as it poses a serious social issue, but also has the potential to significantly constrain our economic prospects.

**TABLE 18.2 – LABOUR FORCE UNEMPLOYMENT RATES BY AGE  
TREND SERIES, MAY  
(PER CENT)**  
Reference: Catalogue No. 6203.0

<i>Age group</i>	1992	1993	1994
<b>WESTERN AUSTRALIA</b>			
15 – 19	23.6	22.6	21.2
20 – 24	15.5	12.1	12.6
25 – 34	9.9	8.8	7.4
35 – 44	6.9	6.6	5.1
45 – 54	7.4	6.9	5.3
55 and over	10.1	9.2	7.5
<b>Overall rate</b>	<b>10.7</b>	<b>9.5</b>	<b>8.4</b>
<b>AUSTRALIA</b>			
15 – 19	24.2	23.5	23.1
20 – 24	16.0	15.3	13.9
25 – 34	10.3	10.0	8.9
35 – 44	7.4	8.3	7.2
45 – 54	6.6	7.2	6.2
55 and over	8.3	9.4	8.2
<b>Overall rate</b>	<b>10.7</b>	<b>10.8</b>	<b>9.7</b>

**TABLE 18.3 – CIVILIAN POPULATION (AGED 15 YEARS AND  
OVER): EMPLOYMENT STATUS,  
MAY  
(‘000 persons)**  
Reference: Catalogue No. 6203.0

<i>Employment status</i>	1992 (a)	1993	1994
<b>MALES</b>			
Employer	23.6	26.9	24.5
Self-employed	55.3	58.3	60.8
Wage or salary earner	346.9	355.9	370.6
Helper, unpaid	2.8	3.0	3.1
Unemployed	56.4	48.9	41.1
Not in labour force	147.9	149.2	152.7
<b>Total</b>	<b>632.9</b>	<b>642.3</b>	<b>652.8</b>
<b>FEMALES</b>			
Employer	11.1	14.7	14.1
Self-employed	26.7	29.6	29.8
Wage or salary earner	267.3	267.3	278.1
Helper, unpaid	4.5	3.8	4.6
Unemployed	32.4	31.2	30.8
Not in labour force	296.2	301.4	301.2
<b>Total</b>	<b>638.2</b>	<b>647.9</b>	<b>658.6</b>

(a) 1992 revised based on 1991 Census benchmarks.

**Employment by Industry**

Over the period May 1992 to May 1994, the percentage distribution of employment between industries has varied only slightly. Table 18.4 depicts an emerging trend of increasing employment in Manufacturing and in Finance, property and business services.

Employment continued to be dominated by four major industries: Community services, Retail trade, Finance, and Manufacturing. These industries between them employed 435,100 people or 55.4 per cent of all workers in Western Australia. Community services which employed an estimated 144,100 persons at May 1994, consists mainly of the education, welfare and health sectors.

**TABLE 18.4 - EMPLOYED PERSONS BY INDUSTRY  
(AGED 15 YEARS AND OVER) MAY ('000 PERSONS)**

Reference: Catalogue No. 6203.0

<i>Industry division</i>	1992	1993	1994
Agriculture, forestry, fishing and hunting	42.0	48.5	49.7
Mining	28.2	28.2	30.8
Manufacturing	79.9	81.9	84.0
Electricity, gas and water	9.5	11.3	8.1
Construction	53.7	62.6	64.3
Wholesale trade	39.8	43.9	49.2
Retail trade	118.0	108.2	110.2
Transport and storage	36.7	36.0	41.2
Communication	9.9	10.9	7.8
Finance, property and business services	87.4	80.9	96.9
Public administration and defence	28.0	31.8	32.1
Community services	143.3	151.7	144.0
Recreation, personal and other services	61.9	63.6	67.3
<b>Total all industries</b>	<b>738.2</b>	<b>759.5</b>	<b>785.6</b>

**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 1994 was 36.4 hours per week. The lower average weekly hours worked by females (shown in Table 18.5), can be largely attributed to the much greater proportion of females working part-time. Females worked an average of 28.6 hours per week compared with an average for males of 41.9 per week.

The Agriculture and Mining industries are traditionally areas where longer hours are worked. The average weekly number of hours worked in May 1994 in mining was 46.8 hours per week and in agriculture was 43.8 hours per week.

**TABLE 18.5 – EMPLOYED PERSONS: AVERAGE WEEKLY HOURS  
WORKED BY INDUSTRY (a)**

**MAY 1994**

Reference: Catalogue No. 6203.0

<i>Industry</i>	<i>Males</i>	<i>Females</i>	<i>Total</i>
Agriculture, forestry, fishing and hunting	49.4	31.2	43.8
Mining	48.5	34.9	46.8
Manufacturing	41.7	29.3	38.8
Electricity, gas and water	35.5	31.6	35.0
Construction	43.3	20.4	39.2
Wholesale trade	41.2	32.5	38.6
Retail trade	38.4	24.8	31.2
Transport and storage	42.5	30.6	40.0
Communication	33.1	24.4	30.6
Finance, property and business services	45.6	31.8	39.0
Public administration and defence	38.7	31.8	35.7
Community services	38.4	29.0	32.4
Recreation, personal and other services	36.6	26.9	31.1
<b>All industries</b>	<b>41.9</b>	<b>28.6</b>	<b>36.4</b>

(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.

More detailed information relating to supplementary surveys is available from ABS Information Services on (09) 360 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 1994, Western Australia had 4,400 job vacancies compared with 2,400 in 1993. 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.

During the decade, average weekly earnings, in nominal terms, increased steadily and comparably for Western Australia and Australia. Western Australian average weekly earnings for all employees in May 1984 were \$322.60, slightly below the Australian average of \$333.40. By May 1994 the Western Australian average had increased to \$507.70 (an increase of 57.4 per cent or an annual compound rate of 4.6 per cent over the decade), while the Australian average had increased to \$531.80 (an increase of 60 per cent and an annual compound rate of 4.8 per cent).

In this period, the Consumer Price Index for Perth increased by 68.1 per cent which suggests that real incomes for Western Australians in this context declined slightly during the decade.

Table 18.6 shows the large difference between male and female average weekly earnings. In May 1994, average total earnings for all male employees were 61.9 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 1994, 45.6 per cent of females were employed part-time, compared with only 10.2 per cent of males (Table 18.1).

Over the period 1989 to 1994, average weekly total earnings for females increased at a slightly higher rate (16.5 per cent) than for males (14.5 per cent).

**TABLE 18.6 – AVERAGE WEEKLY EARNINGS OF EMPLOYEES  
(ORIGINAL SERIES)**

**MAY (\$)**

Reference: Catalogue No. 6302.0

<i>Year</i>	<i>Full-time adult employees</i>		<i>All employees</i>
	<i>Ordinary earnings</i>	<i>Total earnings</i>	<i>Total earnings</i>
<b>MALES</b>			
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
1993	640.80	699.40	617.80
1994	663.70	717.00	622.70
<b>FEMALES</b>			
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
1993	507.90	519.50	364.70
1994	524.10	539.10	384.70
<b>PERSONS</b>			
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
1993	594.50	636.70	496.10
1994	612.30	651.50	507.70

Table 18.7 shows that employees in the Mining industry had the highest average weekly earnings of any sector in May 1994. Female earnings are consistently lower than male earnings in all industries, and in the Finance, property and business services industry, on average, males earn 56 per cent more than females.

**TABLE 18.7 – AVERAGE WEEKLY EARNINGS OF EMPLOYEES  
BY INDUSTRY, MAY 1994 (\$)**  
Reference: Catalogue No. 6302.0

<i>Industry</i>	<i>Full-time adult employees total earnings</i>	
	<i>Males</i>	<i>Females</i>
Mining	1,137.90	796.40
Manufacturing	689.00	494.10
Electricity, gas and water	721.30	554.80
Construction	862.30	633.70
Retail trade	556.30	433.80
Transport and storage	693.90	555.00
Communication	736.40	583.90
Finance, property and business services	797.50	512.70
Public administration and defence	659.30	576.00
Community services	765.40	588.50
Recreation, personal and other services	537.30	464.30
<b>Total industries (a)</b>	<b>717.00</b>	<b>539.10</b>

(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 18.8 and 18.9).

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.

### Industrial Disputes

Industrial disputes statistics relate only to disputes which involve stoppages of ten working days or more at the establishment where the stoppage occurred. The effects these disputes have on other establishments, such as stand downs because of lack of materials, disruption of transport services, power cuts etc., are not included.

**TABLE 18.8 – MAJOR LABOUR COSTS**

Reference: Catalogue No. 6348.0

Type of cost	1989-90		1990-91		1991-92	
	\$m	%	\$m	%	\$m	%
<b>PRIVATE SECTOR</b>						
Total earnings	8,461	90.0	7,844	89.5	7,864	89.7
Other—						
Payroll tax	355	3.8	329	3.8	311	3.5
Workers' compensation	200	2.1	172	2.0	151	1.7
Superannuation	313	3.3	339	3.9	358	4.1
Fringe benefits tax	76	0.8	82	0.9	83	0.9
Total other	944	10.0	921	10.5	903	10.3
<b>Total</b>	<b>9,405</b>	<b>100.0</b>	<b>8,766</b>	<b>100.0</b>	<b>8,767</b>	<b>100.0</b>
<b>PUBLIC SECTOR</b>						
Total earnings	4,104	88.2	4,526	88.0	4,848	91.7
Other—						
Payroll tax	92	2.0	102	2.0	99	1.9
Workers' compensation	77	1.7	76	1.5	72	1.4
Superannuation	366	7.9	425	8.3	255	4.8
Fringe benefits tax	14	0.3	16	0.3	15	0.3
Total other	548	11.8	618	12.0	441	8.3
<b>Total</b>	<b>4,652</b>	<b>100.0</b>	<b>5,144</b>	<b>100.0</b>	<b>5,289</b>	<b>100.0</b>

**TABLE 18.9 – MAJOR LABOUR COSTS PER EMPLOYEE**

Reference: Catalogue No. 6348.0

Type of cost	1989-90		1990-91		1991-92	
	\$	%	\$	%	\$	%
<b>PRIVATE SECTOR</b>						
Total earnings	23,762	90.0	23,899	89.5	25,591	89.7
Other—						
Payroll tax	996	3.8	1,002	3.8	1,012	3.5
Workers' compensation	562	2.1	525	2.0	491	1.7
Superannuation	880	3.3	1,032	3.9	1,166	4.1
Fringe benefits tax	213	0.8	249	0.9	269	0.9
Total other	2,651	11.8	2,807	10.5	2,939	10.3
<b>Total</b>	<b>26,413</b>	<b>100.0</b>	<b>26,707</b>	<b>100.0</b>	<b>28,530</b>	<b>100.0</b>
<b>PUBLIC SECTOR</b>						
Total earnings	26,510	88.2	28,306	88.0	30,728	91.7
Other—						
Payroll tax	591	2.0	635	2.0	628	1.9
Workers' compensation	498	1.7	472	1.5	457	1.4
Superannuation	2,363	7.9	2,656	8.3	1,616	4.8
Fringe benefits tax	88	0.3	100	0.3	96	0.3
Total other	3,540	11.8	3,863	12.0	2,798	8.3
<b>Total</b>	<b>30,050</b>	<b>100.0</b>	<b>32,168</b>	<b>100.0</b>	<b>33,526</b>	<b>100.0</b>

**Table 18.10 - INDUSTRIAL DISPUTES BY INDUSTRY**  
Reference: Catalogue No. 6322.0

<i>Industry</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>
NUMBER OF DISPUTES			
Mining	102	91	55
Manufacturing	11	5	9
Construction	12	13	17
Transport, storage and communication	11	17	16
Other industries	20	8	14
<b>Total</b>	<b>156</b>	<b>134</b>	<b>111</b>
WORKING DAYS LOST (per thousand employees)			
Mining	24.6	44.1	9.0
Manufacturing	76.5	2.3	3.4
Construction	14.2	1.7	2.6
Transport, storage and communication	1.1	3.1	1.8
Other industries	2.6	2.4	12.7
<b>Total</b>	<b>119.1</b>	<b>53.6</b>	<b>29.5</b>

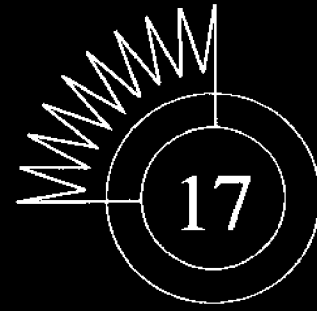
The number of industrial disputes and the number of working days lost due to industrial dispute has decreased over the last few years. The number of industrial disputes in 1993 was 111 compared with 156 disputes in 1991. The number of working days lost per thousand employees was 29.5 in 1993 compared with 119.0 in 1991. In 1993, a half of all industrial disputes were in the mining industry (Table 18.10).

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.

#### References

- ABS publications*
- Average Weekly Earnings, States and Australia* (6302.0)
  - Award Rates of Pay Indexes, Australia* (6312.0)
  - How Workers Get Their Training* (6278.0)
  - Labour Costs, Australia* (6348.0)
  - The Labour Force, Australia* (6203.0)
  - Labour Statistics* (6101.0)





**FINANCE**

**sector**

## Chapter 17

# FINANCE SECTOR

---

Contents	Page
<b>Public Finance</b>	
Commonwealth-State Financial Relations	271
Commonwealth Financial Assistance	273
State Government Finance	274
Local Government Finance	275
<b>Private Finance</b>	
Legislation	276
Currency	277
Banking	277
Building Societies	277
Credit Unions	277
Other Financial Institutions	278
Lending by Financial Institutions	278
New Capital Expenditure	278
References	279



## FINANCE SECTOR

---

### Public Finance

Within Western Australia, there are three levels of government — Commonwealth, State and Local — which collectively constitute the public sector. The combined outlays of the State and Local governments were \$7,910 million in 1992-93, resulting in a deficit of \$442 million. The major outlays of State and Local government were for education (\$1,812 million), health (\$1,261 million), public debt (\$1,208 million) and transport and communication (\$1,009 million).

In 1992-93, total outlays of State authorities were \$7,421 million. Grants received from the Commonwealth totalled \$3,215 million, an increase of 4.7 per cent over the previous year.

#### **Commonwealth-State Financial Relations**

The major institutions assisting in the management of Commonwealth funding to States and Territories governments are: the Premiers' Conference; the Commonwealth Grants Commission; and the Australian Loan Council.

#### *Premiers' Conference*

The annual Premiers' Conference determines the total amount of general revenue assistance and the shares of each State and the Northern Territory. Although these payments are at the Commonwealth's discretion, they are subject to negotiation between the Commonwealth and States at the Conference.

The 1994 Conference was held in March instead of towards the end of the financial year as a result of the Commonwealth deciding to bring down its 1994-95 budget in May 1994. Future Premiers' Conferences are expected to be held in March with the move to earlier Budgets by several States as well as the Commonwealth.

Outcomes of the 1994 Premiers' Conference:

- agreement that for the period 1994-95 to 1996-97 that financial assistance grants would be adjusted for inflation and population growth to maintain their *per capita* value; and the
- abolition of Loan Council capital grants to the States (which had been declining in terms of their real value).

**TABLE 17.1 – COMMONWEALTH GENERAL AND SPECIFIC  
PURPOSE PAYMENTS FOR WESTERN AUSTRALIA AND  
AUSTRALIA(a), 1992-93  
(\$ million)**

<i>Payments</i>	<i>Western Australia</i>	<i>Australia</i>
General purpose payments—		
Revenue	1,599.3	14,189.2
Capital	39.9	512.5
<i>Total</i>	<i>1,639.2</i>	<i>14,701.7</i>
Specific purpose payments—		
Current	1,215.5	12,775.6
Capital	412.7	4,398.7
<i>Total</i>	<i>1,628.2</i>	<i>17,174.3</i>
<b>Total payments</b>	<b>3,267.4</b>	<b>31,876.0</b>
General and specific purpose payments classified according to—		
Grants	3,267.4	31,865.1
Advances (loans)	0.0	10.9

(a) Excludes direct Commonwealth payments to local authorities

Source: Commonwealth Budget Paper No. 4

#### *Commonwealth Grants Commission*

The Commonwealth Grants Commission makes recommendations to the Commonwealth on the distribution of financial assistance grants and hospital grants across the States. The Grants commission does this using *per capita* relativities which it calculates after analysing the pattern of each State's expenditure and revenues. Each State's relativity is expressed as its need for general revenue assistance relative to the Australian average.

A full review of the relativities is carried out every five years with annual updates being made in the intervening years. The last full review occurred in 1993. The changes made to the States' *per capita* relativities in 1994 were larger than normal. The changes were due to the correction of errors made in the full review, use of 1991 Census data instead of 1986 data, use of revised data, and changes in State responsibilities and the method of assessment. Western Australia's *per capita* relativity was reduced from 1.117 to 1.0839 in the 1994 update. This implied a reduction of about \$54 million in financial assistance grants for Western Australia from \$1,842 million in 1993-94 to \$1,789 million in 1994-95. The Commonwealth agreed to provide Western Australia with a one-off payment of special revenue assistance to off-set this reduction.

#### *Australian Loan Council*

The Loan Council was established under the *Financial Agreement Act of 1928* with responsibility for determining the annual borrowing programs of the Commonwealth and State Governments.

In February 1994, a new Financial Agreement was signed by the Council of Australian Governments which redefined the role of the Loan Council. Under the Agreement, the Loan Council has power to make resolutions on the 'borrowings, raisings, and other financial arrangements' of governments.

Each government will now nominate its own Loan Council Allocation (LCA) for the coming year. The LCA is the estimated deficit/surplus outcome for a jurisdiction with the addition of some 'memo items' covering transactions of interest not fully reflected in the deficit/surplus figure.

The Loan Council may modify individual LCA's after considering the economic and fiscal implications of all LCA's. The Loan Council adopted all LCA's without modification for 1993-94 and 1994-95. Some variation within an agreed range and the actual outcome of individual LCAs is acceptable, however, large variations must be explained to the Loan Council.

**Commonwealth  
Financial Assistance**

Commonwealth Government payments to the States and Northern Territory Governments may be classified under two major headings - general purpose payments and specific purpose payments.

*General purpose  
payments*

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.

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.

*Specific Purpose  
Payments*

Specific purpose current payments to Western Australia for 1992-93 amounted to \$1,215 million. The major payments were for schools (\$205 million), higher education (\$276 million) and hospital funding grants (\$349 million). Specific purpose capital payments to Western Australia in 1992-93 amounted to \$413 million with the largest amounts allocated to roads (\$172 million) and public housing (\$77 million).

## State Government Finance

The data in this section relate to the financial activities of the Government of Western Australia. It includes those statutory authorities, boards, commissions and corporations, and incorporated bodies (other than financial enterprises) in which the State Government or its agencies have a controlling interest.

Western Australia government outlays rose from \$7,276 million in 1991-92 to \$7,421 million in 1992-93.

Table 17.2 provides a breakdown of Government expenditure by purpose. Education is the largest single area of expenditure representing 24.4 per cent of total outlays in 1992-93. The next largest areas of expenditure are Other government purposes (16.9 per cent), Health (16.8 per cent) and Transport and communications (11.6 per cent).

**TABLE 17.2 – OUTLAYS BY PURPOSE OF WESTERN AUSTRALIA  
STATE GOVERNMENT**  
(\$ million)

Reference Catalogue No. 5512.0

<i>Item</i>	1990-91	1991-92	1992-93
General public services	506	607	410
Defence	—	—	—
Public order and safety	500	518	510
Education	1,632	1,671	1,811
Health	1,207	1,233	1,248
Social security and welfare	305	337	349
housing and community amenities	317	275	382
Recreation and culture	123	83	94
Fuel and energy	314	135	134
Agriculture, forestry and fishing	174	172	154
Mining, manufacturing and construction	50	50	43
Transport and communication	576	685	863
Other economic affairs	177	255	170
Other purposes	1,360	1,253	1,252
<b>Total</b>	<b>7,239</b>	<b>7,276</b>	<b>7,421</b>

Table 17.3 shows that the main components of the receipts of Western Australian State authorities are grants, taxation, and net operating surpluses of public trading enterprises.

In 1992-93 total State government revenue increased by 3.6 per cent to \$6,751 million. Of this, \$2,010 million (29.8 per cent) was raised in the form of taxes, fees or fines, with \$3,215 million (47.6 per cent) being received as grants.

TABLE 17.3 – STATE AUTHORITIES  
RECEIPTS AND FINANCING TRANSACTIONS CLASSIFIED  
BY ECONOMIC TRANSACTIONS FRAMEWORK  
(\$ million)

Reference: Catalogue No. 5501.0

Item	r1990-91	r1991-92	p1992-93
Revenue—			
Taxes, fees, fines	1,825	1,925	2,010
Net operating surpluses of public trading enterprises	721	748	808
Income from public financial enterprises	21	10	18
Interest received	258	236	138
Other property income and other revenue	495	527	562
Grants received	2,914	3,071	3,215
<i>Total revenue</i>	<i>6,235</i>	<i>6,518</i>	<i>6,751</i>
Financing transactions—			
Net Advances received	-131	-254	-197
Net domestic borrowing	783	891	136
Net borrowing from abroad	245	463	900
Increase in provisions	340	234	196
Other financing transactions	-233	-577	-93
<i>Total financing transactions</i>	<i>1,004</i>	<i>758</i>	<i>670</i>
<b>Total funds available</b>	<b>7,239</b>	<b>7,276</b>	<b>7,421</b>

The major items contributing to total taxes, fees and fines were payroll tax which raised \$504 million (25.1 per cent); taxes on financial and capital transactions \$440 million (21.9 per cent); and franchise taxes on petroleum, tobacco and liquor \$328 million (16.3 per cent).

#### Local Government Finance

The financial powers of local government authorities, including loan raising, the levying of loan rates, the expenditure of loan monies and the repayment of loans, are derived principally from the *Local Government Act 1960*, the main provisions of which are outlined in Chapter 3 — Government.

Total outlays of Local Authorities were \$659 million in 1992-93, with the major components being transport and communication (\$222 million) and recreational facilities and services (\$175 million). Total revenue was \$697 million, which was principally comprised of taxes, fees and fines (\$428 million) and grants (\$219 million).

#### Loan Transactions

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.

### Relaxation of Government Controls

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 co-operative 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.

<b>Currency</b>	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.
<b>Banking</b>	The banking system in Western Australia includes the Commonwealth banking institutions, the State owned Bank of Western Australia Ltd (previously known as The Rural and Industries Bank of Western Australia) and, until late 1989, private trading and savings banks.
<b>State Bank</b>	The Bank of Western Australia (BankWest) is currently 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.
<b>Other Banks (excluding merchant banks)</b>	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.
<b>Building Societies</b>	<p>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 <i>Building Societies Act 1976</i>.</p> <p>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 <i>Housing Assistance Act 1984</i>.</p>
<b>Credit Unions</b>	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.

<b>Other Financial Institutions</b>	<p>Financial institutions registered under the Financial Corporations Act comprise authorised money market dealers, money market corporations, general financiers, pastoral finance companies, intra-group financiers and other financial corporations.</p> <p>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.</p>
<b>Lending by Financial Institutions</b>	<p>New monthly statistical series were introduced in January 1985 to show a measure of the lending activity of significant lenders in fields of personal, commercial and lease finance. These were in addition to statistics already published on secured housing finance commitments to individuals for owner occupation.</p>
<i>Personal Finance Commitments</i>	<p>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 <i>Financial Corporations Act</i> and if, during 1982-83, it committed funds exceeding \$4 million to individuals for their own use.</p>
<i>Commercial Finance</i>	<p>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 <i>Financial Corporation Act</i>, or an insurance company and if it committed funds exceeding \$40.1 million for business purposes (excluding leasing of goods) during 1982-83.</p>
<i>Lease Finance Commitments</i>	<p>Lease finance commitments comprise those made by significant lenders to trading and financial enterprises, non-profit organisations, governments, public authorities and individuals.</p> <p>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 if it committed funds exceeding \$13 million during 1982-83.</p>
<b>New Capital Expenditure</b>	<p>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.</p>



Data are collected by a quarterly sample survey of all private sector enterprises except those enterprises primarily engaged in the agricultural, construction and community services industries.

**TABLE 17.4 - PRIVATE NEW CAPITAL EXPENDITURE AT  
CURRENT PRICES BY SELECTED INDUSTRIES AND TYPE OF  
ASSET  
WESTERN AUSTRALIA  
(\$ million)**

Reference : Catalogue No. 5646.0

<i>Selected Industries and Type of Asset</i>	<i>1990-91r</i>	<i>1991-92r</i>	<i>1992-93</i>
Finance, property and business services	465	265	298
Mining	2,143	2,077	2,961
Manufacturing	550	753	679
Other selected industries	841	971	1,310
New capital expenditure—			
New buildings and structures	1,537	1,710	2,043
Equipment, plant and machinery	2,462	2,356	3,205
<b>Total new capital expenditure</b>	<b>3,999</b>	<b>4,066</b>	<b>5,248</b>

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).

Private new capital expenditure in original terms increased in 1992-93 compared with 1991-92. In Western Australia the increase was 29.1 per cent overall, while in the same period the Australian total increased by 6 per cent. Total capital expenditure in Western Australia was \$5.2 billion. The equivalent Australian total was \$25.7 billion. In terms of asset class, new investment in Equipment, plant and machinery jumped 36.0 per cent while building and structures increased by 19.5 per cent over the same period.

## References

- ABS Publications*
- Cash Management Trusts, Australia* (5635.0)
  - Classification Manual For Government Finance Statistics* (1217.0)
  - Commercial Finance, Australia* (5643.0)
  - Expenditure on Education, Australia* (5510.0)
  - Government Financial Estimates, Australia* (5501.0)
  - Housing Finance for Owner Occupation, Australia* (5609.0)
  - Lease Finance, Australia* (5644.0)
  - Monthly Summary of Statistics, Western Australia* (1305.5)

*Personal Finance, Australia (5642.0)*

*Private New Capital Expenditure, Australia (5626.0)*

*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*

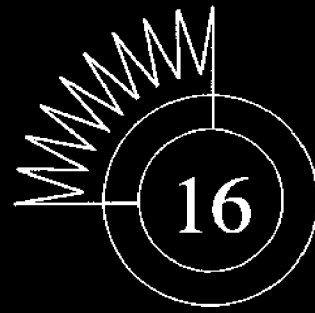
*Australian Securities Commission, Annual Report 1991-92*

*Commonwealth Budget Paper No. 4*

*Commonwealth Final Budget Outcome 1993-94*

*Commonwealth Grants Commission Report on General Revenue  
Grants Relativities 1994 Update*

*Western Australia 1994-95 Budget Papers*



**TOURISM**

**WISCONSIN**

## Chapter 16

# TOURISM

---

Contents	Page
Domestic Travel	263
Overseas Arrivals and Departures	264
<b>Ecotourism – A Partnership in Nature</b>	<b>266</b>
Western Australian Tourist Accommodation	268
References	268

## Chapter 16

# TOURISM

### Domestic Travel

Tourism is one of the largest growing industries in Western Australia. Information provided by the Western Australian Tourism Commission (WATC) shows that, during 1993-94, interstate and intrastate visitors (persons aged 15 years and over), made 5.1 million trips to or within Western Australia. This represents 10.6 per cent of total domestic trips made within Australia. The main purpose of trips to or within the State was 'pleasure or holiday' (39 per cent) followed by 'visiting friends and relatives' (26 per cent). The main destinations for domestic travel were Perth and the South-West.

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 16.1).

TABLE 16.1 - TOURIST ACCOMMODATION (a)

31 December 1993

Reference : Catalogue No. 8635.5

	<i>Perth Statistical Division</i>	<i>Rest of State</i>	<i>Western Australia</i>
HOTELS AND MOTELS, WITH FACILITIES (b)			
Establishments	87	241	328
Guest rooms	6,780	7,914	14,694
Bed spaces	17,236	20,766	38,002
HOTELS AND GUEST HOUSES, WITHOUT FACILITIES (b)			
Establishments	9	120	129
Guest rooms	357	2,698	3,055
Bed spaces	561	4,398	4,959
CARAVAN PARKS (c)			
Establishments	35	277	312
Capacity	3,967	24,625	28,592
HOLIDAY FLATS, UNITS AND HOUSES (b)			
Letting entities	30	77	107
Units	1,080	1,110	2,190
Bed spaces	4,494	5,884	10,378

(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.

**TABLE 16.2 – TOURIST VISITOR NUMBERS AND EXPENDITURE**  
(a) WESTERN AUSTRALIA

<i>Visitor Numbers and Expenditure</i>	1989-90	1990-91	1991-92	1992-93	1993-94
	'000's				
Visitor Numbers—					
Intrastate	4,886	4,580	4,567	4,747	4,720
Interstate	336	349	498	332	366
International	344	309	336	r 380	447
<b>Total Visitors</b>	<b>5,566</b>	<b>5,238</b>	<b>5,401</b>	<b>r 5,459</b>	<b>5,533</b>
	\$m				
Visitor Expenditure—					
Intrastate	746	893	851	887	919
Interstate	266	400	710	470	345
International	516	460	535	r 566	642
<b>Total Visitor Expenditure</b>	<b>1,528</b>	<b>1,760</b>	<b>2,096</b>	<b>1,923</b>	<b>2,106</b>

(a) International data since 1992-93 uses more accurate sources than previous years. Therefore data is not directly comparable with previous years because of the break in time series. International data for 1992-93 and 1993-94 only includes expenditure for visitors aged 15 years and over. International data for 1993-94 includes an estimated \$16.8m spent by US Navy personnel. Intrastate and interstate expenditure data has been CPI adjusted from 1991-92 expenditure results.

Source: Western Australian Tourism Commission

## Overseas Arrivals and Departures

### Arrivals

The number of short-term arrivals by air in 1993 was 262,120 — an increase of 51,230 or 24.3 per cent over the 1992 figure of 210,890.

The major source countries for short-term overseas visitors were the United Kingdom, 19.9 per cent of total arrivals; Singapore, 17.0 per cent; Japan, 9.8 per cent; Malaysia, 9.0 per cent; and New Zealand, 8.9 per cent. The number of arrivals from each of the above countries increased in 1993 compared to the corresponding figures in 1992. Indonesia (9,810) and Singapore (8,250) recorded the largest increases.

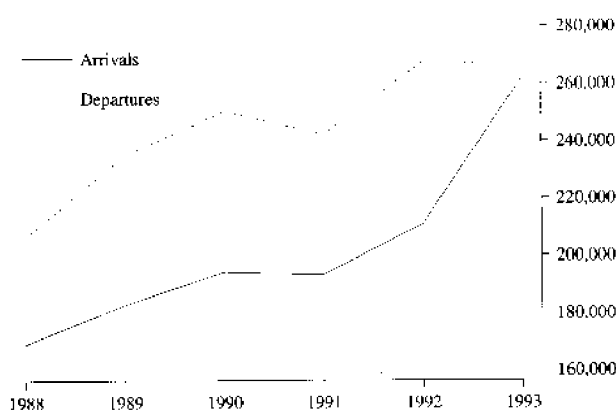
Diagram 16.1 indicates that, over the last six calendar years, short term overseas departures have exceeded short term overseas arrivals. In 1988, the excess of departures over arrivals was 37,250 but by 1993 the excess declined dramatically to only 4,510 persons. This trend is indicative of Western Australia's growing popularity as a tourist destination.

**TABLE 16.3 – MAIN SHORT-TERM OVERSEAS ARRIVALS (a)**  
Reference: ABS Microfiche PMTR0031

Country	1992	1993
United Kingdom	48,570	52,260
Singapore	36,260	44,510
Japan	19,470	25,620
Malaysia	18,990	23,550
New Zealand	20,460	23,240
Indonesia	8,710	18,520
<i>Total</i>	<i>152,460</i>	<i>187,700</i>
<b>Total all arrivals</b>	<b>210,890</b>	<b>262,120</b>

(a) Arrivals by air.

**DIAGRAM 16.1**  
**OVERSEAS ARRIVALS AND DEPARTURES**  
1988-1993



Source: ABS Microfiche PMTR 0031

### Departures

In calendar year 1993, the number of short-term resident departures by air of Western Australians was 266,630 — a decrease of 900 compared to the 1992 figure of 267,530.

The most popular overseas short-term destinations for Western Australian residents were Indonesia (including Bali), 23.6 per cent of total destinations; followed by the United Kingdom, 12.9 per cent; Singapore 9.8 per cent; Malaysia, 8.6 per cent; and New Zealand, 8.4 per cent. Indonesia (up by 6,850 compared to 1992) and Thailand (up by 2,970 compared to 1992) recorded increases in the number of Western Australians visiting their shores.

**TABLE 16.4 - MAIN SHORT-TERM OVERSEAS DESTINATIONS  
BY RESIDENTS OF WESTERN AUSTRALIA (a)**  
Reference: ABS Microfiche PMTR0031

<i>Country</i>	<i>1992</i>	<i>1993</i>
Indonesia	56,180	63,030
United Kingdom	36,330	34,270
Singapore	31,240	26,190
Malaysia	23,050	22,990
New Zealand	22,760	22,300
United States	17,560	15,770
Thailand	10,900	13,870
Hong Kong	14,810	11,230
<i>Total</i>	<i>212,830</i>	<i>209,650</i>
<b>Total all departures</b>	<b>267,530</b>	<b>266,630</b>

(a) Departures by air.

### **Ecotourism - A Partnership in Nature** **Contribution by Mr Len Staniforth**

Ecotourism or "nature based tourism", which is the description preferred by the Western Australian Department of Conservation and Land Management (CALM), has been described as environmentally responsible travel into natural areas which is designed to preserve these areas in every possible way. This is achieved by reducing the impact of tourists on sensitive areas, while safeguarding the economic needs and cultural well-being of indigenous peoples and using the proceeds of tourism to finance environmental conservation.

Countries such as Nepal, Peru and some African nations have experienced major problems with tourism. Poor disposal of rubbish, pollution of local water supplies and driving off-road in sensitive areas has disturbed and sometimes destroyed wildlife. Indigenous people have consistently been excluded from the planning of tourist facilities, and have been forced from land they traditionally lived on or farmed.

Western Australia has much to offer the nature based tourist. Many of our tourist attractions are scenic. Recently, serious efforts have been made to maintain them in a pristine state and by focussing on the cultural and ecological relevance, the tourists' experiences have been improved and they are able to take away with them a better understanding of the area visited.

Tourist visiting Western Australia have indicated that they want to see interesting landscapes, unusual animals and birds and wide open spaces, and are willing to pay for that privilege.

Most often, however, tourists do not get the experience they seek because many tours concentrate on urban areas and pursuits. Professionally designed development programmes have increased tourist numbers while enhancing conservation values. This is apparent at Monkey Mia where 100,000 people visit Shark Bay every year



generating more than \$10 million. Most visitors to the area come to see the dolphins, but access is now controlled to reduce environmental impact.

At Shoalwater Island Marine park, visitors may take a gentle cruise around the waters and islands of Shoalwater Bay to observe sea-lions, seals, dolphins and many kinds of seabirds. They can stop off at Penguin Island where newly-constructed board-walks provide easy access to see the fairy penguins, with only minimal impact on the vegetation or the breeding habitat.

A tour offered by a Perth based wildlife tour operator provides a professionally guided hands on opportunity to observe and tag turtles with CALM's Western Australian Marine Turtle Project team. This tour is offered twice a year at Ningaloo Marine Park. Under the supervision of an experienced tour guide, tourists can observe the nesting process, count egg clutches and tag, measure and record other valuable data about green, loggerhead and hawksbill turtles. In addition, they may open the door to the discovery of marine ecology by accompanied diving on the reef, attending lectures on coral reef biology and on fish and bird identification.

In many places CALM and Aboriginal communities are working together to generate income and provide employment for the people. This is achieved by meeting the visitors requirement for nature based experiences and by fostering an understanding of the relationship between Aboriginal culture and the natural environment.

The partnership between CALM and the Darlanguyaya Aboriginal Corporation, representing the Bunuba Community at Fitzroy Crossing is a good example. Tours provide visitors with an insight into Aboriginal culture and show the local people's relationships with the land, its plants and animals in Geike Gorge, Windjana Gorge and Tunnel Creek National Parks. This partnership with CALM, offers the Bunuba people the chance to develop and control tourist ventures which share their cultural heritage with visitors wishing to experience the remote and rugged Kimberley landscapes.

However, CALM feels that still more can be done to make Western Australia's tourist industry ecologically aware and is working to develop even stronger relationships with potential partners in the tourism industry. Recently CALM has organised workshops bringing local tour operators together with environmental and conservation professionals, wildlife experts and local historians.

These workshops, at Perup Forest in the South-west of Western Australia and at Purnululu National Park (or Bungle Bungle) in the East Kimberley, were designed to show tour operators how to give their clients a truly memorable experience, while developing an appreciation of how nature works.

Now tour operators are better able to understand how the local people interact with nature and how they can help CALM cope with tourist pressures on the environment.

### Western Australian Tourist Accommodation

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.

#### MAIN FEATURES 1993

##### Hotels, Motels and Guest Houses

- in calendar year 1993 room nights occupied increased by 5.1 per cent to 3,221,316. The room occupancy rate increased from 47.8 per cent to 50.4 per cent and guest arrivals increased by 161,290 (or 7.8 per cent); and
- in 1993 takings from accommodation rose by 9.7 per cent to \$221.5m with average takings per room night occupied increasing by 4.5 per cent from \$66 to \$69 per night.

##### Caravan Parks

- capacity available in the December quarter 1993 increased by 1.6 per cent to 28,592 powered and unpowered sites and cabins, compared to the same period in 1992;
- of the capacity available in the December quarter 1993, 4,873 sites (17.0 per cent) were occupied by long-term residents, 2,233 sites (7.8 per cent) were permanently reserved but only casually occupied by their tenants; and
- in calendar year 1993 guest arrivals decreased by 2.0 per cent while takings from accommodation rose by 7.7 per cent to \$44.9m.

##### Holiday Flats, Units and Houses

- in calendar year 1993 availability increased by 14.4 per cent to 2,190, and unit nights occupied rose by 21.2 per cent and unit lettings increased by 3.7 per cent (from 86,597 to 89,770); and
- unit occupancy rose by 2.2 per cent to 53.7 per cent and takings from accommodation in 1993 fell by \$3.8m (or 20.2 per cent).

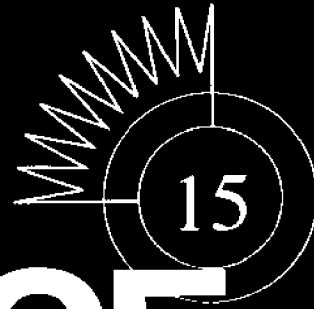
##### Visitor Hostels

- there were 2,993 bed spaces available in the December quarter 1993 and 103,780 guest nights were sold. The corresponding figures in 1992 were 3,060 and 96,040 respectively; and
- bed occupancy rose by 3.6 per cent to 37.7 per cent and accommodation takings were \$1.1m over the same period.

#### References

ABS Publications

*Tourist Accommodation, Western Australia* (8635.5)



# COMMERCE

## économie

## Chapter 15

# COMMERCE

---

Contents	Page
<b>Small Business</b>	
Number of Small Businesses in Western Australia	241
Employment Generation	242
Self-Employed Persons	243
Self-Employed Women	244
Special Characteristics of Small Business	244
<b>Independent Enterprise</b>	244
Innovative Nature	244
Access to Capital	244
Limited Management Enterprises	245
Home Based Businesses	245
Small Business Opinion Survey	246
<b>Manufacturing</b>	
Manufacturing Statistics	248
<b>Retail and Wholesale Trade</b>	
Wholesale Trade	250
Retail Trade	250
	252
<b>Transport</b>	
Road Transport	252
Motor Vehicles	253
Bicycle Services	253
Bus and Ferry Services	255
Taxi Services	256
Rail Services	256
Air Services	258
Shipping	258
Principal Ports	260

## COMMERCE

---

### Small Business

*Contributed by the Small Business Development Corporation*

The Western Australian small business sector continues to grow and increase its contribution to the States economy. Overall the small business sector has continued to dominate commercial activity, contributing to the bulk of employment, innovation and general economic activity.

A small business is any business which is:

- independantly owned and operated;
- managed personally by the major investor(s);
- maintains a relatively small share of the market; and
- does not form part of a larger group.

For statistical purposes, small businesses are defined as:

- non-manufacturing businesses employing less than 20 employees;
- manufacturing businesses employing less than 100 employees.

#### Number of Small Businesses in Western Australia

In the 1993-94 financial year there were approximately 76,100 non-agricultural agricultural small businesses in Western Australia. These comprised 96.8 per cent of all private sector enterprises operating in Western Australia.

Between 1983-84 and 1993-94, the number of small businesses in the non-agricultural sector increased from 51,700 to 76,100 - an average annual growth rate of 3.9 per cent. This compares well to the national average small business growth rate of 2.9 per cent for the same period.

Proportionally, the major small business growth areas were in the Mining (up 40 per cent) and Construction (up 9.6 per cent) sectors. The Construction sector also experienced the greatest increase in numbers of businesses (up by 1,400).

**Table 15.1 – SMALL BUSINESS BY INDUSTRY**  
**Average Annual Rate of Change – 1983-84 to 1991-92**  
 Reference: Catalogue No. 1321.0

<i>Industry division (a)</i>	<i>Businesses</i>	<i>Employment</i>
Manufacturing	5.6	1.4
Construction	7.1	5.3
Wholesale trade	0.9	2.6
Retail trade	0.4	1.1
Transport and storage	7.4	2.1
Finance, property and business services	6.4	4.8
Community services	6.0	1.8
Recreational, personal and other services (b)	5.8	3.1
<i>Total Average (c)</i>	4.6	2.4

(a) Industry divisions as defined in *Australian Standard Industrial Classification 1983* (1201.0). (b) Excludes private households employing staff. (c) Includes the Electricity, gas and water and Communication industries.

Between 1989-90 and 1993-94, the Mining and Recreational, personal and other services sectors outperformed the remaining areas showing increases of 75 per cent and 32 per cent respectively. The only sector to experience a decrease in small business counts was Retail which recorded a decrease of one per cent which translates to 100 businesses.

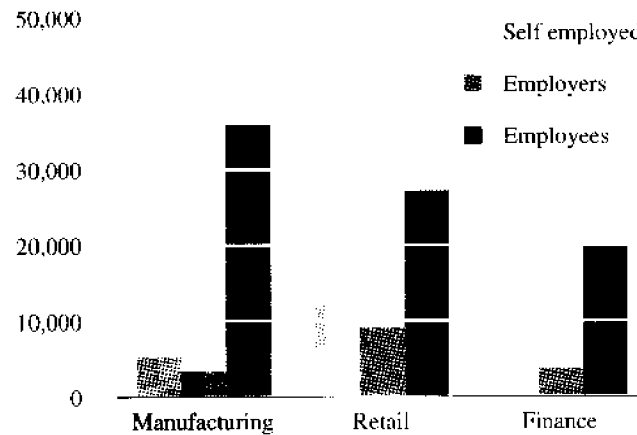
Business name registrations are a useful indicator of economic activity. Currently, new business name registrations are at record levels, with a total of 30,015 new business names registered during the 1993-94 financial year. This represented a 12 per cent increase on the previous financial year, and a 11 per cent increase on the previous record of 26,500 new business name registrations in 1988-89.

#### **Employment Generation**

Small firms are a major employer. In 1993-94, approximately 106,300 persons worked in their own small business. Of these, 74,300 (69.9 per cent) were self-employed and the remaining 32,000 (30.1 per cent) were employers. These 32,000 small business employers, employed a workforce of 150,400 employees.

The total small business sector workforce comprising self-employed, employers and employees was 256,700 representing 51.9 per cent of the State's private sector workforce. Growth in the number of small business employees averaged 2.7 per cent in Western Australia over the last 6 years. Over this time the sectors experienced a significant employment shift from areas such as Mining (down 57.1 per cent) and Retail trade (down 10.1 per cent) to the Wholesale trade (up 76.0 per cent), and Transport and storage (up 40.4 per cent).

**DIAGRAM 15.1**  
**SMALL BUSINESSES IN WESTERN AUSTRALIA**  
**BY KEY EMPLOYING INDUSTRIES 1993**



Source: ABS Survey of Employment and Earnings, Labour Force Survey (Unpublished data)

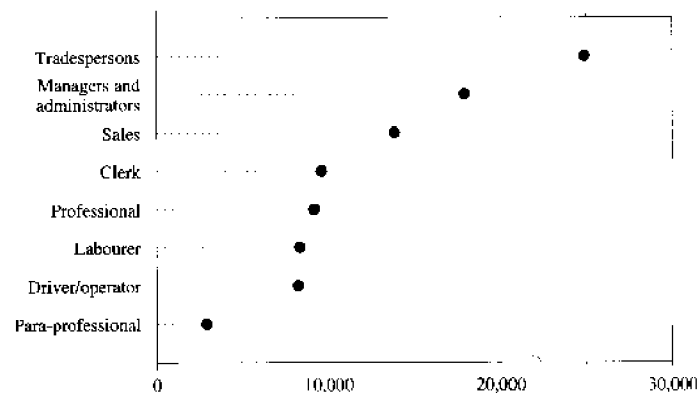
Diagram 15.1 illustrates small business employment in Western Australia by selected industries.

### Self-Employed Persons

ABS labour force estimates (November 1994), indicated a total of 90,951 self-employed persons in Western Australia.

As with very small businesses, the self-employed tend to be concentrated in a small range of occupations. In November 1994, over a quarter (28.2 per cent) of self-employed persons in Western

**DIAGRAM 15.2**  
**SELF-EMPLOYED BY OCCUPATION**  
**WESTERN AUSTRALIA FEBRUARY 1994**



Source: ABS Labour Force Survey. Unpublished data.

Australia described themselves as *tradespersons* and 17.5 per cent as *managers/administrators*.

### **Self-Employed Women**

The ABS Labour force figures for November 1983 recorded 18,748 women were self-employed. In November 1994 this figure had risen to 29,563.

A Yellow Pages Small Business Index (July 1994) survey on women in small business provides the following profile:

Of the businesses surveyed, around 26 per cent of the small business proprietors were women. The survey indicated that small businesses owned by women are more likely to be found in the recreational and personal services sector, transport and storage and the building and construction sector where joint ownership is likely to be with a spouse.

Reasons given by women for operating their own business were varied, however 'security' was the paramount issue followed by 'being my own boss', 'job satisfaction' and 'financial gain'.

### **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.

A term which is becoming increasingly popular in describing this business sector is 'small to medium sized enterprises'(SMEs). This term is often preferred as it allows a clear and simple description of the type of businesses being considered.

### **Independent Enterprise**

The small business operator is often driven by the desire to be economically independent. A study by the Small Business Development Corporation (SBDC) in June 1990, found that most small business proprietors felt that the main advantages of operating a small business were personal factors such as: freedom; independence; flexibility and job satisfaction.

### **Innovative Nature**

Although SMEs face considerable barriers in introducing new products to markets, they are often on the cutting edge of innovation, able to fill niches untouched by larger businesses. The ability of SMEs to respond quickly to changing markets and the introduction of new technology, can often offset the disadvantage that they lack the economies of scale available to larger firms.

### **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 small 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 Management Enterprises** Given that there are often only one or two individuals responsible for the whole gamut of business decisions required, proprietors must have and maintain a broad knowledge of all areas of management or draw upon external expertise. SME owner/managers must always operate on two levels, one to manage and administer the business; and two, to ply their respective trade.

Given that larger organisations often have specialised in-house staff to manage the various business functions, it is not surprising that the main reason given for small business failure in Australia is management inexperience.

### Home Based Businesses

#### Contributed by the Small Business Development Corporation

A survey by the ABS on home based businesses *Persons Employed at Home* (Catalogue No. 6275), found that in Western Australia, nearly 32,000 persons were employed at home. This included self-employed persons and employers but excludes farmers, employees and unpaid workers.

Australia wide, 308,000 persons were employed at home. Just under half (46 per cent) could be classified as self-employed.

The major industry sectors with the highest numbers of home based businesses were finance, property and business services, and the wholesale and retail trade. The survey found that clerks comprised the largest self-employed occupation group to work in a home based business, the majority (95 per cent) of these being female. The next two largest occupation groups were professionals and tradespersons.

The main reason people worked from home was to "open/operate/own/family business with spouse", (25.9 per cent). Next they "wanted office at home/no overheads/no rent" (16.5 per cent). In a gender breakdown, the main reason for males was "office at home/no overheads/no rent" (29 per cent). For females the main factor was "to open/operate own/family business with spouse" (19 per cent), followed by "children too young/preferred to look after children" (16 per cent).

Recent structural changes within the workplace and labour market, in the form of a decentralisation of corporate processes, the increasing employment of skills on a contract basis, expansion of the services sector and technological advances in business communications between workplaces, have set the scene for a significant increase in the number of small home based businesses, and a change in the way they are perceived.

Home based business, and the provision of services to home based businesses, has become an important, if often overlooked contributor to the economic performance of this State.

### **Small Business Opinion Survey**

**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 five Western Australian higher education bodies, the Western Australian branch of the Market Research Society and the small business sector. Every six months for the past four years, the Institute has undertaken a survey of small business opinion. Utilising the skills of the Western Australian Labour Market Research Centre, the Institute has developed a valuable assessment tool for monitoring small business concerns, opinions and collecting data on small firm performance.

#### **Survey Sample**

The April 1994 survey, the ninth in the series, related to 314 valid small business respondents. Of these 314 respondents, 76 per cent sighted Perth metropolitan area as their principal market place and 10 per cent listed Western Australian country areas. Given that 75.2 per cent of all small firms are located in the metropolitan area (ABS Business Register, February 1992), the sample can be considered representative in terms of geographic spread.

The main responses came from the following industry groups: building and construction 23 per cent; retail 18 per cent; business services 15 per cent; personal services 11 per cent; and manufacturing 11 per cent.

#### **Main Findings of the April 1994 Survey**

The survey provided strong evidence that small businesses in Western Australia are enjoying much improved business conditions. Over half of the businesses surveyed reported an increase in total sales turnover compared to the previous six months and just under half reported an overall increase in economic activity and cash flow.

Most importantly, the percentage of respondents who cited the state of the economy as the major constraint on business activity, decreased from a high of 48.5 per cent in May 1993 to 25.75 per cent in this survey.

### **Employment & Training**

The downward trend on businesses offering employee training indicated in previous surveys was reversed with just under half of the firms surveyed offering training to employees and just over a third offering training at management level. Respondents also indicated six months prior to the survey, they employed on average six employees and that in six months time they expected to employ on average seven employees.

### **Planning and Business Research**

The May 1994 survey found that approximately 35 per cent of the businesses surveyed had a fully documented business plan. This percentage figure is considerably higher than previous surveys and may indicate an acknowledgement by small businesses of the need to plan for the expected growth in economic activity.

This increase is also reflected in the number of small businesses preparing marketing plans, up 12 per cent to 29 per cent compared to 17 per cent in November 1993.

### **Enterprise Agreements**

Considering the recent developments in enterprise bargaining, two new questions were added to the May 1994 survey regarding the level of understanding by small business proprietors of the concepts of enterprise bargaining, and their likelihood of using enterprise agreements in their business.

### **Conclusion**

Expectations held by respondents for the six months to December 1994 were high, with over half the respondents expecting an increase in new markets, sales turnover and overall economic activity.

The results of the ninth Small Business Opinion Survey are being added to the Institute's growing database of small business information, which allows 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.

### Manufacturing Statistics

The Perth Statistical Division continued to dominate manufacturing activity in Western Australia in 1991-92. It contributed 81.4 per cent of all locations, 78.7 per cent of employment and 70.8 per cent of turnover. The South West Statistical Division (13.3 per cent of employment and 19.8 per cent of turnover) was the next largest contributor to manufacturing activity.

The industries of the Perth Statistical Division were also the leading contributor in 11 of the 12 industry subdivisions. The Basic metal products subdivision was the exception, where the South West Statistical Division (with 3,925 persons employed) was

greater than the Perth Statistical Division (1,658 persons employed).

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 per cent of employment, fifty-two per cent of wages and salaries and sixty per cent of turnover.

In 1991-92, Western Australia contributed 7.7 per cent of total Australian manufacturing turnover. Turnover of manufacturing establishments decreased, in current price terms, by 1.6 per cent between 1990-91 and 1991-92. Six industry subdivisions recorded decreases and six recorded increases. Transport equipment (up 21.1 per cent from \$335.4m to \$406.3m) and Non-metallic mineral products (up 7.6 per cent from \$712.7m to \$766.5m) recorded the largest percentage increases. The largest percentage decreases were recorded by Basic metal products (down 12.9 per cent from \$3,328.5m to \$2,900.5m) and Miscellaneous manufacturing (down 11.6 per cent from \$408.2m to \$360.8m).

At the ANZSIC sub-division level, Basic metal products and Food, beverages and tobacco made the largest contributions to turnover in 1991-92. Industries with the largest turnover per person employed in 1991-92 were recorded in the Chemical, petroleum and coal products and Basic metal products divisions.

**TABLE 15.2 - PRODUCTION OF SELECTED COMMODITIES (a)**  
(Includes quantities produced and used in own establishment)

Reference: Catalogue No. 1305.5

Commodity	Unit	1990-91	1991-92	1992-93	1993-94
Aerated and carbonated waters	'000 L	145,679	147,249	148,253	163,141
Alumina (b)	'000 t	6,800	7,129	7,548	7,830
Bacon and ham	tonnes	10,674	9,974	10,574	10,950
Butter (c)	"	1,477	1,989	2,665	3,193
Cheese (c)	"	5,258	5,380	5,804	5,170
Footwear	pairs	319,456	311,387	350,382	387,625
Ice cream	'000 L	19,412	23,295	24,423	29,881
Inedible tallow	tonnes	38,049	29,727	36,790	33,267
Paints	'000 L	8,027	8,055	7,312	n.y.a
Ready-mixed concrete	'000 cu m	1,042	1,000	1,234	n.y.a
Rock lobster tails	tonnes	1,098	1,515	1,686	688
Scoured wool from greasy shorn wool	"	22,815	27,320	25,788	29,168
Stock and poultry foods—					
Meat and bone meal	"	44,875	39,098	43,073	42,834
Prepared stock and poultry food	"	311,719	306,851	329,108	345,698
Terracotta and concrete tiles	'000 sq m	2,733	2,977	3,669	n.y.a.

(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 Minerals and Energy. (c) Source: Australian Dairy Corporation.

A wide range of manufactured commodities is produced in Western Australia, as indicated in Table 15.2. 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.

## Retail and Wholesale Trade

### Wholesale Trade

Wholesale trade is described as the resale of new or used goods to retailers and other business users (including farmers, builders, government and professional bodies).

### Retail Trade

Retail trade is described as the resale of new or used goods to final consumers for personal or household consumption. Detailed information about the retail sector has been collected using Censuses of Retail Establishments, the first of which was taken for 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. 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 1992 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.

### *Survey of Retail Establishments*

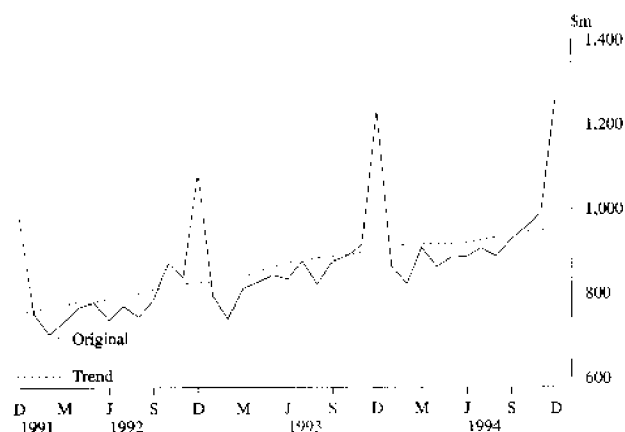
Since 1956, intercensal estimates of the value of retail sales have been produced by means of sample surveys. Surveys were initially conducted quarterly but are now conducted on a monthly basis. The surveys are reviewed periodically, generally to account for changes reflected in the results of each retail 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 1991-92 to 1993-94 are provided in Table 15.3.

Diagram 15.3, covering the period December 1991 to December 1994, 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 15.3  
RETAIL TURNOVER  
WESTERN AUSTRALIA**



**TABLE 15.3 – RETAIL TURNOVER ANNUAL ESTIMATES  
AT CURRENT PRICES, BY INDUSTRY GROUPS (a)  
1991-92 TO 1993-94  
(\$ million)**

Reference: Catalogue No. 8501.0

Industry group	1991-92	1992-93	1993-94
Grocers, confectioners, tobacconists	2,938.8	3,123.5	3,232.1
Butchers	77.3	94.8	88.8
Other food stores	685.2	731.7	955.6
Hotels, liquor stores, licensed clubs	878.9	952.1	1,075.8
Cafes and restaurants	513.5	596.0	665.5
Clothing and fabric stores	474.7	561.7	542.7
Department and general stores	980.1	1,026.2	1,087.3
Footwear stores	92.5	106.0	127.3
Domestic hardware stores, jewellers	245.3	269.2	305.3
Electrical goods stores	452.8	536.7	659.0
Furniture stores	164.6	193.3	179.1
Floor coverings stores	71.6	74.0	89.7
Pharmacies	370.3	374.2	419.4
Newsagents	192.3	290.5	338.8
Other	459.6	443.3	545.3
<b>Total</b>	<b>8,597.2</b>	<b>9,373.2</b>	<b>10,311.7</b>

(a) Excludes motor vehicle dealers, petrol and tyre retailers.

## 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 individual local councils.

Road statistics at 30 June 1993 were:

Highways	8,231 kilometres
Main Roads	7,497 kilometres
Secondary Roads	8,397 kilometres
Unclassified Roads	115,752 kilometres

State sealed road length totalled 43,057 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 53.5 kilometres of freeway from Thomas Road, Kwinana 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.

**TABLE 15.4 – MOTOR VEHICLE REGISTRATIONS**

References: Catalogue Nos. 9304.5, 9305.5

	1992	1993	1994
<b>NEW MOTOR VEHICLE REGISTRATIONS</b>			
Year ended 30 June			
Motor cars and station wagons	41,979	45,567	48,589
Utilities and panel vans	7,664	9,581	10,350
Trucks and buses	1,909	1,975	2,136
Motor cycles	1,814	2,117	2,103
<b>Total</b>	<b>53,366</b>	<b>59,240</b>	<b>63,178</b>
<b>VEHICLES ON REGISTER</b>			
At 30 June			
Motor cars and station wagons	781,600	803,728	827,837
Utilities and panel vans	150,086	153,346	156,889
Trucks and buses	112,208	116,062	120,577
Motor cycles	37,816	37,894	37,078
<b>Total</b>	<b>1,081,710</b>	<b>1,111,030</b>	<b>1,142,381</b>

## 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.

Bikewest has sought to service the rapid growth in bicycle use by improving the standard of existing bicycle facilities and by assisting in, and 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. From July 1 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.

*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 15.5 – ANNUAL KILOMETRES TRAVELLED (a)  
YEAR ENDED 30 SEPTEMBER 1991  
(Million kilometres)**

Reference: Catalogue No. 9208.0

Vehicle type	Perth Statistical Division	Area of travel		Total
		Rest of State	Inter- state	
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
<b>Total</b>	<b>10,125.0</b>	<b>5,681.7</b>	<b>262.9</b>	<b>16,069.3</b>

(a) Vehicles registered in Western Australia

**TABLE 15.6 – FUEL CONSUMPTION AND TONNES CARRIED (a)  
YEAR ENDED 30 SEPTEMBER 1991**

Reference: Catalogue No. 9208.0

Vehicle type	Fuel consumption (million litres)				Tonnes carried (million)
	Petrol	Diesel	Other (b)	Total	
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	—
<b>Total</b>	<b>1,556.7</b>	<b>622.5</b>	<b>66.8</b>	<b>2,245.9</b>	<b>133.7</b>

(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), bears 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.

*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.

TABLE 15.7 – TRANSPERTH BUS AND FERRY SERVICES (a)

	1991-92	1992-93	1993-94
<b>BUSES</b>			
Number (b)	923	901	851
Route kilometres	1,911	1,918	1,919
Bus kilometres (millions)	r49.2	r49.4	48.7
Passenger boardings (millions)	51.2	r49.7	45.4
<b>FERRIES</b>			
Number (b)	3	3	3
Route kilometres	1.3	1.3	1.3
Kilometres run (thousands)	42	40	43
Passenger boardings (millions)	0.6	r0.5	0.5

(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

*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 Services* Road transport of passengers outside the metropolitan area is provided by railway road services (see the Rail Services section) and privately operated bus services. Railway coach services operate in the southern part of the State (a private company competes with Westrail on the Perth-Augusta 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.

Intratown 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 Services

The Taxi Control Board controls the operations of taxis in the Perth Metropolitan Traffic Area and any other designated areas. The Department of Transport is responsible for taxi operations in 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. 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.

TABLE 15.8 - LICENSED TAXI CARS: 14 AUGUST 1994

	Number
Metropolitan area—	
Metered taxis—	
Unrestricted	899
Multi-purpose	16
Area restricted	7
Private	25
<b>Total</b>	<b>947</b>
Country areas	330

Source: Taxi Control Board, (State) Department of Transport

## Rail Services

### 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.

At 30 June 1994, there were 5,583 kilometres of railway owned and operated by Westrail. 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.

*Mining Company  
Railways*

The exploitation of extensive inland deposits of iron ore in Western Australia has necessitated the construction of private

**TABLE 15.9 – WESTRAIL SERVICES**

	1991-92	1992-93	1993-94
Kilometres of railway (a)—			
Route kilometres	5,554	5,583	5,583
Track kilometres	6,952	6,987	6,987
Kilometres run ('000)—			
Train	7,549	7,018	7,561
Road bus (b)	3,019	2,971	3,040
Passenger journeys ('000)—			
Rail	r230	r233	246
Road (b)	192	198	215
Tonnes carried ('000) (c)	25,890	26,523	27,726

(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.

**TABLE 15.10 – SUBURBAN RAIL SERVICES**

	Unit	1991-92	1992-93	1993-94
Rail cars and carriages	No.	46	80	86
Route kilometres	"	66	95	95
Train kilometres	m	2.6	4.0	6.4
Passenger boardings	"	9.7	r14.2	22.9

Source: Metropolitan (Perth) Passenger Transport Trust

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. At 30 June 1992, private railways operated from Newman to Port Hedland (485 kilometres), Paraburdoo to Dampier (389 kilometres), Shay Gap to Finucane Island (185 kilometres) and Pannawonica to Cape Lambert (201 kilometres).

*Tourist Railways and  
Tramways*

A number of private organisations operate tourist railways in the 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. It also has 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.

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.

**TABLE 15.11 - PASSENGER TRAFFIC BETWEEN PERTH AND PRINCIPAL AIRPORTS (a)**

	1991	1992	1993
DOMESTIC			
Adelaide	283,521	298,471	319,222
Alice Springs	31,560	47,058	48,021
Brisbane	12,081	6,491	8,537
Melbourne	708,881	633,318	638,178
Sydney	278,403	489,972	615,998
INTERNATIONAL			
Auckland	66,894	69,653	66,846
Bangkok	41,954	41,405	40,588
Denpasar	100,262	113,657	129,672
Hong Kong	62,163	71,462	77,557
Kuala Lumpur	82,389	92,042	103,961
London	76,839	75,398	80,177
Singapore	287,241	309,926	326,346

(a) Total of embarkations and disembarkations. From 1992, also includes passengers in transit. (b) From 1 July 1993, includes international service traffic carried by the major Australian airlines.

Source: Department of Transport and Communications.

## 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.

TABLE 15.12 - PASSENGER AND AIRCRAFT MOVEMENTS AT PRINCIPAL AIRPORTS

Airport	Passengers (a)			Aircraft movements (b)		
	1991	1992	1993	1991	1992	1993
Broome	65,892	119,181	123,082	2,565	2,700	2,643
Carnarvon	16,737	33,652	35,383	908	907	866
Derby	23,108	60,646	64,842	1,620	1,603	1,586
Geraldton	26,187	56,282	60,723	1,313	1,288	1,284
Kalgoorlie	67,635	75,222	89,657	1,440	1,550	1,658
Karratha	119,356	171,976	176,192	3,452	3,724	3,854
Kununurra	44,502	102,159	112,096	1,965	1,988	2,213
Learmonth	16,803	22,586	27,408	634	654	722
Newman	26,187	73,080	76,367	1,472	1,624	1,536
Paraburdoo	26,962	54,370	55,539	1,276	1,335	1,281
Perth—						
Internal (c)	1,938,958	1,908,765	2,126,368	21,970	21,463	23,569
International	824,172	897,290	1,001,063	5,351	5,907	7,119
Port Hedland—						
Internal	83,927	123,594	136,068	3,336	3,352	3,435
International	4,974	5,176	4,455	104	106	106

(a) Total of embarkations and disembarkations. From 1992, also includes passengers in transit. (b) Total of arrivals and departures. (c) Interstate and intrastate. From 1 July 1993, includes international service traffic carried by the major Australian airlines over Australian flight stages.

Source: Department of Transport and Communications.

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.

#### Western Australian Coastal Shipping Commission

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.

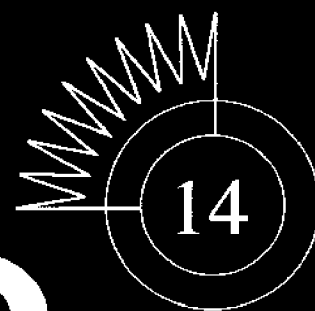
In 1986, the Commission extended its operations to include Papua New Guinea; and in 1988, after a break of fifty years, the shipping service with South East Asia recommenced.

### 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.



# HOUSING. and construction



## Chapter 14

# HOUSING AND CONSTRUCTION

---

Contents	Page
<b>Housing and Construction in 1993</b>	
Introduction	233
Residential Building	233
Alterations and Additions	235
Non-Residential Building	235
<b>The 1993 Property Market Review</b>	<b>236</b>
<b>Dwelling Commencements: Top Ranked LGAs In 1993</b>	<b>237</b>
Engineering Construction Activity	238
References	238

## Chapter 14

# HOUSING AND CONSTRUCTION

---

## Housing and Construction in 1993

*by Gavan J. Forster, B Comm (Hons), MBA (Econs), Dip Ed,  
Director, Economics and Housing, Master Builders Association of WA*

**Introduction** The Western Australian building and construction industry can be broken down into three distinct sectors:

- Housing/residential building;
- Commercial/non-residential building; and
- Engineering construction.

Each sector often operates at a different stage of the business cycle and this was the case in Western Australia in 1993.

**Residential Building** This sector covers construction of single detached housing, multiple unit development including villas, town houses, duplexes and flats.

**Housing** Housing activity was extremely strong in 1993, being the second highest on record. Activity exceeded expectations due to:

- continued lower interest rates and ample availability of housing finance;
- a stronger economy and job creation which induced buyers into home ownership;
- higher consumer and investor confidence; and
- a strong public housing programme by the State Government.

Variable housing interest rates remained low, falling from 9.5 per cent in April 1993 to 8.75 per cent by the end of the year. Many first home buyers and investors took advantage of these lower interest rates resulting in a strong demand for housing.

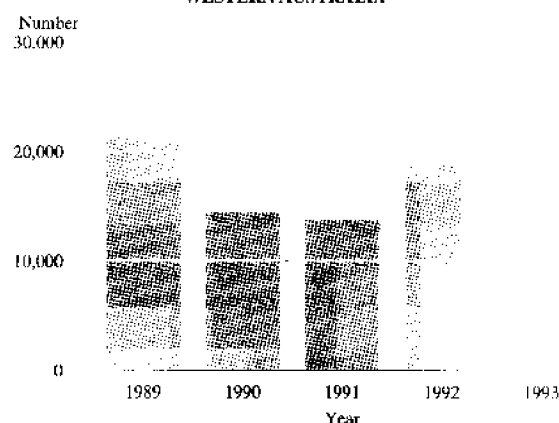
A significant feature of 1993 is that all parts of regional Western Australia, from Albany to Derby, were experiencing significant levels of housing activity.

The State Government continued its extensive public housing programme in an attempt to stimulate the economy, and provide accommodation for its constituents.

With such a strong level of housing activity, building trades were in high demand. Bricklayers and finishing trades such as plasterers, and ceramic tilers were the main areas of short supply. The cost of building materials, and labour rose markedly during this period of high demand.

As seen in Diagram 14.1, in 1993 there were 21,680 dwelling commencements in Western Australia compared to 18,866 in 1992, an increase of 14.9 per cent. The Perth metropolitan area continued to show growth with commencements rising to 11.9 per cent (16,010). This focus on the Perth metropolitan area has been concentrated in local authority areas such as Wanneroo, Stirling, Swan and Rockingham. Mandurah also continues to be an area of strong residential building activity.

**DIAGRAM 14.1  
BUILDING COMMENCEMENTS  
WESTERN AUSTRALIA**



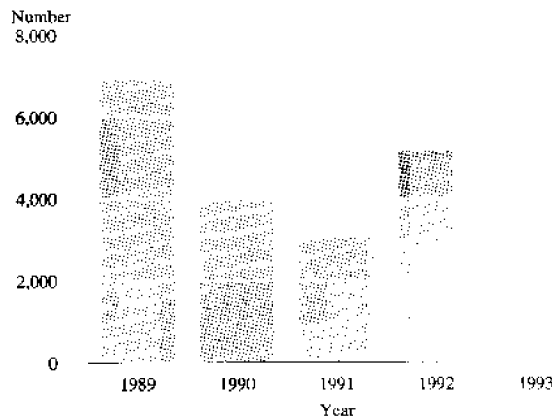
Source: ABS Catalogue No.8741.5

### *Unit Construction*

Unit and other dwelling construction continued to increase in 1993. With interest rates still low and housing affordability high, investors continued to place money into property. Urban infill remains popular as investors sought locations close to the city for unit development.

Diagram 14.2 shows 5,892 dwelling starts in this category compared to 5,161 in 1992, an increase of 14.2 per cent.

DIAGRAM 14.2  
UNIT CONSTRUCTION  
WESTERN AUSTRALIA



Source: ABS Catalogue No. 8741.5

### Alterations and Additions

Alterations and Additions enjoyed a 15 per cent rise in 1993 with a value of \$143.2m of work approved, compared to \$124.3m in 1992. With lower interest rates and greater consumer confidence the market for alterations is expected to remain high.

Official estimates of activity levels in this sector are about one third of the actual level of building. This is because many jobs are either carried out without a building licence, undervalued by the applicant, or excluded from the scope of the Australian Bureau of Statistics collection which only includes projects valued at greater than \$10,000 in its published estimates.

### Non-Residential Building

#### Commercial

This sector includes activity in the construction of buildings such as offices, hotels, educational premises and shopping centres.

On site activity improved in 1993, however, it was not widespread. This recovery was mainly focused around the retail area as population growth in outer suburbs boosted the outlook for the retail sector and encouraged significant new construction and refurbishment activity.

With an improving economy and lower interest rates, a boost was also provided to the smaller industrial development. Additional Federal and State Government funding resulted in some activity in smaller institutional work e.g. schools, libraries and hospitals.

Although office vacancy rates began to fall in late 1993, Perth's CBD mainstream construction is not expected to improve for some time. However, a buoyant share market and high corporate

### **The 1993 Property Market Review**

**Contributed by Lino Iacomella of the Real Estate Institute of Western Australia (REIWA).**

The 1993 property market was characterised by strong growth in the residential sector and improved conditions in the commercial/industrial markets.

The median established house price in Perth rose by 10.2 per cent during 1993, from \$100,000 to \$110,200. The number of homes sold in the established housing market also rose significantly. There were 29,384 homes sold in Perth during 1993 which is 27 per cent more than the previous year.

The non-residential property market also showed improvement during the year. A REIWA survey of commercial/industrial sales over \$300,000 in value shows that there was a 72 per cent rise in the number of sales in 1993 compared with the previous year. However the commercial/industrial sector was coming off a severe downturn. This is highlighted by the total value of commercial/industrial sales (over \$300,000) which rose by only 15 per cent despite the substantially bigger rise in the level of sales. The REIWA survey also showed that there were 521 commercial/industrial sales in 1993 (72 per cent greater than 1992) and the total value of sales in 1993 was \$441 million (15 per cent greater than the previous year).

The strong improvement in the residential property market during 1993 was brought about by falls in interest rates and general improvements in homebuyer affordability. At the start of 1993 the most common variable home loan rate was 9.5 per cent. By year's end the variable home loan rate had fallen to 8.75 per cent.

The REIWA Affordability Index which measures the proportion of average incomes spent on home loan repayments, fell to 17.7 per cent by the end of 1993. In contrast the proportion of average earnings spent on home loan repayments in 1989 was over 30 per cent.

Residential property was very popular with investors during 1993. During the year investors rose to 38 per cent of all buyers in the established housing market. There was also a big increase in the number of new homes built during 1993. During the year there were 16,020 new homes built in Perth, which is a 12 per cent increase on the year before.

As can be expected from the fall in interest rates, the level of bank lending for home buying rose significantly. The year 1993 saw the beginning of a home loan lending boom. Borrowers took advantage of the record low interest rates and competition amongst lenders to lift

the level of home loan borrowing to record levels. Other factors which influenced the high level of lending was a high level of home loan refinancing and borrowing for non-housing purposes using the family home as security.

There were no major construction projects completed in the Perth CBD during 1993 and the CBD office market continued to experience very high levels of vacancies. Vacancies in the Perth CBD office market peaked late in 1993 at 30 per cent.

## Dwelling Commencements: Top Ranked LGAs In 1993

LGA	Number
METROPOLITAN	
Wanneroo	3,914
Stirling	1,842
Swan	1,741
Rockingham	1,406
Cockburn	780
COUNTRY	
Mandurah	1,094
Busselton	438
Bunbury	325
Greenough	292
Harvey	274

Source: ABS Catalogue 8741.5

The focus of construction activity was in the residential sector and in suburban commercial sectors, particularly in Joondalup and renovations to various regional shopping centres.

There were significant additions to the number of inner city apartments during the year and a genuine inner city apartment market emerged. The pioneering East Perth redevelopment project made large advances during 1993. The major roads through the area were realigned and a water channel was made though to the Swan River, connecting the river with the heart of the East Perth area. The project was on target for the first release of residential blocks of land in early 1994.

Development of the north eastern corridor of the metropolitan area (north of Midland) was also given a boost during 1993 with the commencement of major earthworks in the Ellenbrook residential development. Over the next 15 years it is anticipated that 12,000 homes will be built in this development housing 35,000 people.

profits may contribute to expansion plans by the corporate sector in resource development and commercial property sooner than expected providing a gradual recovery in the non-residential area.

Much of the activity focus is in suburban areas of Perth where major retail outlets are located.

In overall terms, the value of non-residential building was higher. In 1993, \$895.4 million worth of non-residential building activity was approved compared to \$881.3 million in 1992, an increase of 1.6 per cent. Private sector growth remained slow, although with some improvement in the tender market in late 1993, the non-residential building industry can look forward to moderate growth in 1994.

## Engineering Construction Activity

This survey measures engineering construction activity in Australia by public and private sector organisations. The data is compiled from the Engineering Construction Survey (ECS).

**TABLE 14.1 - VALUE OF ENGINEERING CONSTRUCTION WORK DONE  
WESTERN AUSTRALIA, 1993  
(\$ MILLION)**

Reference: Catalogue No. 8762.0

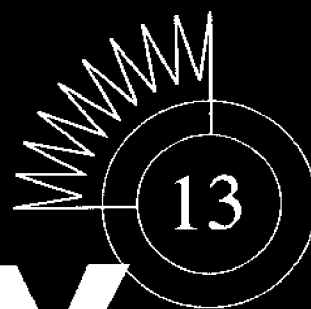
Type of work done	Amount
Roads, highways, bridges & railways	459.0
Harbours	58.9
Electricity generation, transmission & distribution	77.1
Pipelines	69.5
Heavy Industry	504.1
Other	372.8
<b>Total</b>	<b>1,541.5</b>

## References

- ABS publications
- Estimated Stocks of Dwellings, Western Australia* (8705.5)
  - Building Approvals, Western Australia* (8731.5)
  - Dwelling Unit Commencements, Western Australia* (8741.5)
  - Building Activity, Western Australia* (8752.5)
  - Engineering Construction Survey, Australia* (8762.0)
  - Census Counts for Small Areas, Western Australia* (2730.5)



# MINING, ENERGY and water resources



## Chapter 13

# MINING, ENERGY AND WATER RESOURCES

---

Contents	Pages
<b>Mining and Energy in 1993-94</b>	
Overview and Outlook	223
<b>Metallic Minerals</b>	224
<b>Economic and Political Factors Affecting the Mining Industry</b>	<b>225</b>
<b>Petroleum and gas</b>	227
Non-metallic minerals	227
Other minerals	228
Minerals and petroleum exploration	228
<b>Water Resources</b>	
The Water Authority of Western Australia	230
<b>First water restrictions introduced in 16 years</b>	<b>231</b>
Water Quality	232
Irrigation Schemes	232

## MINING, ENERGY AND WATER RESOURCES

---

### Mining and Energy in 1993-94

Contributed by Department of Minerals and Energy

#### Overview and Outlook

The value of mining and petroleum production increased by 2.3 per cent in 1993-94 to reach \$12.6 billion. The rise was mainly due to higher volumes of production, as prices for most commodities remained at historically low levels despite the strong rally in world commodity prices in the latter half of the year.

Both iron ore and oil prices fell, with oil reaching a five year low of around \$US15 per barrel in December 1993. Oil prices subsequently recovered slightly over the following months. By contrast, the gold price remained relatively high, after a dramatic rise in the first half of 1993 in response to strong world demand. Alumina prices recovered slightly, albeit from a very low base. Prices also rose for mineral sands in 1993-94. Again, however, the increase followed substantial declines in previous years.

Strong production increases occurred in the State for most mineral and petroleum commodities. This improvement partially reflected Western Australia's successful development of new trading links with Asia and the mining sector's competitiveness on world markets particularly through output increases, to achieve economies of scale. Increases in production levels were recorded for gold, iron ore, alumina, petroleum and nickel. Diamond sales also increased. There were, however, falls in the production of salt and certain mineral sands.

In 1994-95 the United States economy is expected to remain buoyant but only modest growth is expected in the Japanese and European economies. Japan aside, prospects for the Asian economies are very good. Economic growth is expected to strengthen in South Korea, Hong Kong and Taiwan and remain high in Singapore, Indonesia and Malaysia. The continued improvement in world economic conditions is expected to lead to increased demand for most of Western Australia's major resources. This will sustain, if not improve, the higher prices for a number of mineral and energy commodities experienced in the latter half of 1993-94.

Although higher prices will be counteracted to some degree by an expected firm exchange rate, the outlook for Western Australia's resources industry in 1994-95 is favourable, with a further rise forecast in the value of Western Australia's mineral and energy production.

### **Metallic Minerals**

#### *Gold*

For only the second time in the last 20 years gold surpassed iron ore as the State's most valuable mineral commodity with the value of output in 1993-94 increasing by over 21 per cent to \$3,415 million. At around 194 tonnes of fine gold this represented 76 per cent of Australia's total gold output. Western Australia also now accounts for approximately 8 per cent of the world's gold production.

The 12 biggest producing projects accounted for half of the State's gold production in 1993-94. Of these, the largest projects with gold production worth over \$100 million in 1993-94 were the Golden Mile - Kalgoorlie (22.2 tonnes), Boddington (12.4 tonnes), Telfer (12.2 tonnes), Kambalda (9.9 tonnes), Hill 50-Mt Magnet (6.6 tonnes) and Granny Smith (5.9 tonnes).

#### *Iron*

The value of Western Australia's iron ore production fell by over 4 per cent to \$2,865 million. This fall was due entirely to lower prices which fell in terms of the benchmark standard to Japan by an average 10 per cent in US\$ terms. These falls were partially offset by a 7 per cent increase in production which reached a record 120 million tonnes, accounting for almost all of Australia's iron ore output.

Lower iron ore prices resulted from weak demand in the Japanese steel industry which accounted for 47 per cent of Western Australia's overseas iron ore exports in 1993-94. However, the overall effect of this on producers was offset to some degree by increased demand from steel producers in China, Korea and Taiwan. Iron ore exports to China increased during the year to account for 16 per cent of the State's overseas sales. Western Australia currently supplies around 50 per cent of China's iron ore imports.

#### *Nickel*

Despite production disruptions associated with the upgrading of smelting and refining operations, Western Australia's nickel production increased by 15 per cent in 1993-94 to reach 61,113 tonnes of contained nickel in matte, metal and concentrate products. However, the value of that production was down by almost 3 per cent, reflecting lower average prices during the year.

The value of overseas nickel exports in 1993-94 was \$516 million. The chief export destination was Japan which accounted for over half the shipments. Other significant importers of the State's nickel output were Europe, US, Canada and South Korea.

### Economic and Political Factors Affecting the Mining Industry

Contributed by the Department of Minerals and Energy

The mining industry is vital to Western Australia's economic prosperity. The revenue earned from mining activity depends on prevailing economic and political conditions – both locally and overseas. Some of the more important factors that influence mining revenue are:

- **Commodity prices** – increased prices for mineral commodities increase the revenue earned from exports. However gains from commodity price rises can be moderated by forward sale contracts with set price clauses – in particular gold, iron ore, petroleum products, alumina and mineral sands;
- **Exchange rates** – as many export contracts are written in \$US, the exchange rate between the \$A and the \$US is a major economic determinant. For example, it has been estimated that a one per cent appreciation in the value of the \$A against the \$US equates to a decrease in sales value of about \$35 million a year for gold exports;
- **Inflation and Interest rates** – of particular value to export industries such as mining is continued low inflation and low interest rates. A lower level of inflation and interest rates contributes to international competitiveness by keeping prices down;
- **Investment** – levels of investment in mining impact on the amount of exploration for new mineral deposits. In 1993-94, \$454 million or 57 per cent of total Australian expenditure on mineral exploration was spent in Western Australia;
- **Productivity and Wages** – restrained wage increases and the spread of enterprise agreements have assisted international competitiveness. It has been argued that enterprise bargaining has led to multi-skilling, extension of work shifts associated with fewer days, simplification of rosters, abandonment of some penalty rates and increased use of contract staff. These micro-economic reforms help maintain competitive prices;
- **Multilateral and Bilateral Trade Agreements** – the conclusion of the General Agreement on Tariffs and Trade (GATT) negotiations in December 1993 will see lower tariffs on manufactured goods and increased openness of major markets. Western Australia is likely to benefit as Asian economies will require additional raw material inputs necessary to expand into those markets made more accessible under GATT; and
- **Native Title** – for a detailed analysis of the Native Title issue please read the feature article "The Mabo Controversy" written by Dr Harry Phillips of Edith Cowan University in Chapter 3.

TABLE 13.1 – MINERAL PRODUCTION

Mineral		1991-92		1992-93		1993-94	
		Quantity	Value	Quantity	Value	Quantity	Value
			\$'000		\$'000		\$'000
<b>Metallic minerals—</b>							
Bauxite/Alumina (a)	'000 tonnes	7,129	1,758,150	7,548	1,818,116	7,830	1,784,319
Copper metal	'000 tonnes	28.5	17,441	22.9	27,439	28.8	33,410
Gold bullion	kilograms	182,043	2,689,922	179,800	2,834,190	193,599	3,415,060
Iron ore	'000 tonnes	111,065	2,953,270	111,730	2,991,141	119,690	2,865,156
Manganese	'000 tonnes	395	71,856	252	46,887	300	46,082
<b>Mineral sands concentrates—</b>							
Ilmenite	'000 tonnes	1,280	236,271	1,352	250,208	1,402	246,259
Leucoxene	'000 tonnes	11.8	6,518	11.2	4,446	17.4	6,935
Monazite	'000 tonnes	7.4	2,131	6.2	1,814	5.8	1,667
Rutile	'000 tonnes	47.5	26,879	75.9	42,135	68.9	35,758
Zircon	'000 tonnes	226.9	61,114	302.5	49,192	349.1	63,099
Nickel concentrate	tonnes	475,528	485,908	521,030	470,436	521,030	458,621
Nickel ore	tonnes	5,210	3,135	—	—	—	—
Tantalite	tonnes	873	25,006	537	19,741	246	14,279
Tin concentrate	tonnes	273	1,286	209	1,140	—	791
Zinc	tonnes	312,042	125,579	127,963	104,107	133,557	77,529
Other	..	..	52,154	..	35,741	..	49,408
<b>Total value metallic minerals</b>	..	..	<b>8,499,506</b>	..	<b>8,696,733</b>	..	<b>9,098,373</b>
<b>Coal, oil and gas—</b>							
Coal	'000 tonnes	5,491	243,540	5,428	244,774	5,153	236,288
Crude oil (incl. condensate)	megalitres	7,429	1,280,204	6,533	1,218,729	7,678	1,164,045
Liquefied natural gas	Gigajoules	219,701	846,339	254,466	1,025,056	296,362	1,015,679
Natural gas	gigalitres	3,769	349,257	3,960	407,019	4,457	413,371
<b>Total value coal, oil and gas</b>	..	..	<b>2,719,340</b>	..	<b>2,895,575</b>	..	<b>2,829,383</b>
<b>Construction materials—</b>							
Aggregate	'000 tonnes	121.3	737	298.9	1,791	51.4	226
Gravel	'000 tonnes	120.7	620	57.7	283	106.3	526
Rock	'000 tonnes	144.6	539	58.6	494	144.7	2,055
Sand	'000 tonnes	1,031.6	5,752	1,304.1	6,098	2,434.0	9,927
Dimension stone	tonnes	6,358	1,973	2,688	505	2,757	530
<b>Total value construction materials and dimension stone</b>	'000 tonnes	<b>1,424.6</b>	<b>9,621</b>	<b>1,722.1</b>	<b>9,172</b>	<b>5,493.4</b>	<b>13,264</b>
<b>Other non-metallic minerals—</b>							
Clays	'000 tonnes	61.8	6,475	76	6,353	151	6,772
Diamonds	'000 carat	47,485	564,769	24,827	519,981	28,864	476,747
Gypsum	tonnes	101,822	1,041	124,486	1,100	195,158	2,071
Dolomite	tonnes	—	—	0	0	2.5	25
Limestone	'000 tonnes	2,054	12,145	2,104	13,587	2,147	14,765
Salt	'000 tonnes	6,927	153,141	6,633	158,378	6,155	149,179
Silica-Silica sand	'000 tonnes	654.6	6,239	518	4,984	568	5,233
Spodumene	'000 tonnes	42,516	8,893	42,550	7,342	47,787	10,246
Talc	'000 tonnes	168,891	11,822	158,789	11,525	141,057	10,043
Other	..	..	5,026	..	6,889	..	760
<b>Total value other non-metallic minerals</b>	..	..	<b>769,551</b>	..	<b>730,140</b>	..	<b>675,841</b>
<b>TOTAL VALUE ALL MINERALS</b>	..	..	<b>11,998,019</b>	..	<b>12,331,622</b>	..	<b>12,616,859</b>

(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 an indication of the size of this industry in Western Australia.

Source: Department of Minerals and Energy

### *Alumina*

Western Australia produced 7.8 million tonnes of alumina in 1993-94. This was over 3 per cent up on the previous financial year and represented 61 per cent of national output. However, the value of that production was down slightly by 2 per cent, reflecting poor world prices for aluminium metal.

About 88 per cent of the State's alumina production in 1993-94 was exported overseas, largely as smelter grade product. Of the portion exported overseas, the majority went to the US and China which accounted for 28 per cent and 17 per cent respectively. Other significant overseas consumers of the State's alumina output were Canada and Bahrain (13 per cent each), United Arab Emirates (UAE) (7 per cent), Indonesia (6 per cent) and Egypt (5 per cent).

### **Petroleum and gas**

The overall value of petroleum production in 1993-94 was \$2,593 million. This was down by over 2 per cent on the previous financial year. The decrease in sales value took place despite output increases in all petroleum products.

Production values were down due to very low world oil prices in the second quarter. Prices remained depressed in the third quarter in a weak and oversupplied market. The situation was aggravated by unauthorised increases from some OPEC producers.

Western Australia is the only State producing LNG, with its output representing 8 per cent of the world's production. Although the bulk of LNG in 1993-94 continued to be exported to Japan (over 97 per cent), there were minor sales to Spain during the year. Entry into other markets is limited by shipping constraints. The volume of diamond sales increased by a significant 16 per cent in 1993-94 to reach 29 million carats. However, the overall value of sales was down due to lower prices. As usual, almost all sales went overseas, with 77 per cent going to the Central Selling Organisation (CSO) who are based in London. Remaining sales went to Belgium.

### **Non-metallic minerals**

#### *Diamonds*

World demand for diamonds remained depressed, particularly for the lower quality and industrial grade stones. Demand for gem quality stones in Europe was weak but the US market grew and demand from Japan and other Asian countries was strong. This at least boosted diamond sales by the CSO in the second half of 1993-94. However, world supply exceeds current demand and inventories held by the CSO, merchants and producers continued to increase.

#### *Heavy mineral sands*

The heavy mineral sands sector continued to face weak demand for its product and weak prices during 1993-94, although marginal improvements were noticeable towards the end of the

period. Nevertheless, the total value of sales in 1993-94, was over \$359 million, up by 2 per cent on the previous year.

The value of heavy mineral sands exported overseas was \$318 million. The main export destination was the US which accounted for 35 per cent of shipments. Japan and the United Kingdom both shared roughly equally in another 29 per cent. The Netherlands, Italy and Spain each accounted for 5 per cent respectively.

### *Salt*

The State's salt industry suffered a 6 per cent decrease in sales to reach \$149 million with tonnages down by 7 per cent. Over half the State's salt production was exported to Japan, South Korea and Taiwan were also significant customers. Despite strong growth in Asian (excluding Japanese) demand, 1993-94 was characterised by an oversupplied world market and low prices.

Tough trading conditions led to producers implementing cost reductions. Coupled with recovery in the world economy, this should lead to a more promising outlook for the industry in 1994-95.

### **Other minerals**

Coal output was down by 5 per cent 1993-94, and there was a decrease in sales value to \$236 million. All coal now produced in the State comes from open cut operations following the closure of western Collieries last underground operation. Future capacity will be enhanced with production from the new Premier Mine in Collie, the development of which is expected to start in mid 1995.

### **Minerals and petroleum exploration**

Western Australia recorded another year of strong exploration activity, with \$454 million spent in 1993-94 on mineral exploration. This was about \$100 million above 1992-93 and represented significant growth after four years of relatively static expenditure of around \$350 million in 1994 terms.

The State continued to attract the major share of Australian expenditure with over 57 per cent of national mineral exploration dollars spent in 1993-94. Queensland, at under 18 per cent of the total, was a distant second.

Gold and diamond exploration were the main sectors in increased activity in 1993-94. Expenditure on gold exploration was up almost 38 per cent and diamond exploration expenditure was up by over 50 per cent. Base metals (copper, lead, zinc and nickel) were the other major sector of activity.



## Water Resources

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.

Water supply availability has been a major issue from the earliest days of the formation of the Swan River Colony in 1829. Most farmers and householders supplied their own water from shallow wells, roof tanks or excavated earthen dams, paying little attention to the quality and safety of the water.

By the 1870s the focus of development of water supplies shifted to surface sources because of the widespread contamination of shallow wells. Low winter rainfall, water shortages, high costs and typhoid outbreaks, combined with a deal of scandal, placed pressure on the Forrest government to improve the water supplies to Perth, and in 1891 the Victoria Reservoir on Munday Brook was built. Unfortunately the cost of connection to the new supply was too high for many people, so wells remained the main source of water for several decades.

In parallel with this, the discovery of gold in the Coolgardie-Kalgoorlie area, and the high cost and lack of available water resources led to the start of the construction of the Coolgardie Goldfields Water Supply Scheme in 1895. These pressures led to the reservation and protection of catchments in the Darling Scarp for public water supply - decisions that are still admired for their wisdom and foresight.

**TABLE 13.2 – SURFACE WATER AND GROUNDWATER  
RESOURCES OF  
WESTERN AUSTRALIA  
1995**

<i>Drainage Division</i>	<i>Area (km<sup>2</sup>)</i>	<i>Annual Mean Run-off</i>	<i>Divertible Resource</i>	<i>Divertible Groundwater Resource</i>
South West	314,500	6,670	2,869	1,220
Indian Ocean	518,600	3,960	295	504
Timor Sea	277,200	29,980	8,660	741
Western Plateau	1,415,700	—	—	267
<b>TOTAL</b>	<b>2,526,00</b>	<b>40,610</b>	<b>11,824</b>	<b>2,732</b>

Source: Water Authority of Western Australia

### **The Water Authority of Western Australia**

The Water Authority of Western Australia (WAWA) is responsible for cost effective water services throughout the state. It manages all water resources for the continuing benefit of the community including, providing a public water supply, waste water disposal services, drainage and irrigation services to a population of more than 1.6 million in over 300 towns and communities throughout Western Australia.

In order to supply these services WAWA maintains:

- 26,872 kms of water mains;
- 7,865 kms of sewers;
- 903 kms of irrigation channels and pipes; and
- 2,603 kms of drainage channels and pipes.

During 1992-93 310,000 megalitres of water were supplied and 126,000 megalitres of sewage treated.



Lake Joondalup – a natural suburban wetland and relaxing parkland setting for local residents.  
*Photograph: Courtesy of Tammy Oo, South Fremantle Senior High School.*

### First water restrictions introduced in 16 years Contribution by the Water Authority of Western Australia

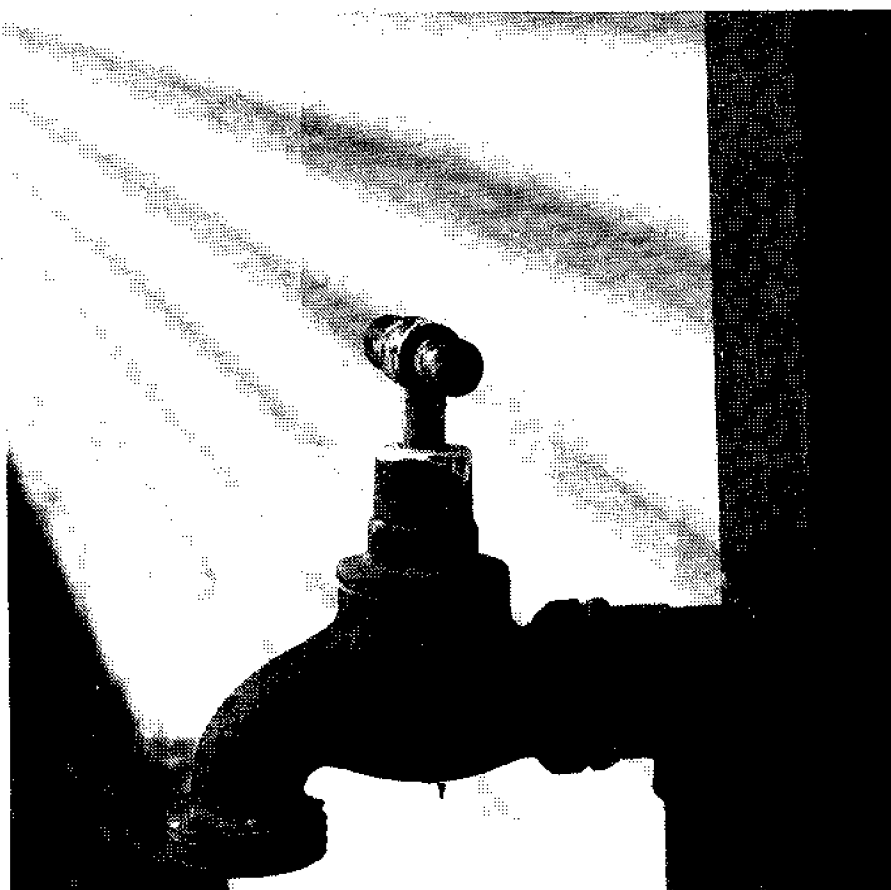
The first water restrictions in 16 years were introduced for Perth, Mandurah and the Goldfields on 1 November 1994.

The restrictions have banned the use of garden sprinklers between 8am and 8pm.

WAWA recommended the restrictions to cut consumption from the integrated scheme by 10 per cent.

The nine dams which supply about 60 per cent of the scheme water used were only 39 per cent full at the end of winter. They have a total capacity of 700 million cubic metres. The restrictions are designed to ensure that the dams are still 20 per cent full by the start of winter 1995.

Demand from the integrated system tops 1 million cubic metres on the hottest days during summer, compared with an average daily demand of about 300 cubic metres a day during the cooler months.



Water tap on a corrugated iron wall. *Photograph: Courtesy of Martha Clemen, Helena College.*

The management of the state's water utilities and general water resources requires the maintenance of:

- 1,720 monitoring bores;
- 370 river gauging stations;
- 410 rain measuring stations in catchments; and
- the administration of almost 16,000 private ground water licences.

About 73 per cent of surface waters, on a mean annual run-off basis, are in the Timor Sea Drainage Division (Kimberley). The South-West is next with 18 per cent and the Indian Ocean Division third with only 9 per cent (see Table 12.4).

The groundwater distribution is not quite so uneven, the South West Division having 45 per cent of the divertible resource, the Indian Ocean Division 18 per cent and the Timor Sea Division 27 per cent.

Rainfall tends to be strongly seasonal, mostly falling in winter in the South-West and in Summer in the Timor Sea Drainage Division. Western Australia's average annual rainfall is 310 mm compared with the Australian average of 420mm. The run-off is only 11 per cent of the nation's total.

To achieve reliable water supplies for human use, surface waters have been dammed and natural reservoirs of shallow and artesian groundwater have been tapped.

### **Water Quality**

WAWA 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.

### **Irrigation Schemes**

Irrigation activities conducted by WAWA are restricted to designated schemes within the North-West, 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 exiting 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.



# AGRICULTURE and forestry

## Chapter 12

# AGRICULTURE, FORESTRY AND FISHING

---

Contents	Page
<b>Agriculture</b>	
Agricultural Statistics	201
Agriculture in Western Australia	204
Land Use On Agricultural Establishments	204
Crops and Pastures	205
Vegetables	209
Fruit	210
Nurseries	213
Artificial fertiliser	213
Livestock	214
<b>Forestry</b>	
Forest Production	217
<b>Fisheries</b>	
References	218

## AGRICULTURE, FORESTRY AND FISHING

---

### Agriculture

**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 New Zealand Standard Industrial Classification (ANZSIC).

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 (ANZSIC) and also according to size of operations.

Since 1976-77, small establishments have been excluded from the census, to reduce ABS processing costs. 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 cut-off 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).

*Value Of Agricultural Commodities Produced* For agricultural production, the *gross value* is based on the wholesale price realised in the market place. Where commodities

**TABLE 12.1 - NUMBER OF ESTABLISHMENTS WITH AGRICULTURAL ACTIVITY  
BY INDUSTRY AND ESTIMATED VALUE OF AGRICULTURAL OPERATIONS, 1992-93 (a)**  
Reference: Catalogue No. 7102.0

Industry of establishment		Estimated value of agricultural operations (\$)						Total
ANZSIC code	Description	Less than 22,500	22,500- 49,999	50,000- 99,999	100,000- 199,999	200,000- 499,999	500,000 and over	
0111	Plant nurseries	19	25	33	50	24	11	162
0112	Cut flower & flower seed growing	18	19	31	17	21	10	116
0113	Vegetable growing	19	82	121	135	130	59	546
0114	Grape growing	37	82	46	14	6	1	186
0115	Apple and pear growing	16	43	50	52	29	7	197
0116	Stone fruit growing	35	51	39	16	9	—	150
0117	Kiwi fruit growing	—	—	2	3	—	—	5
0119	Fruit growing n.e.c.	86	46	48	67	86	10	343
0121	Grain growing	8	39	124	382	1,161	597	2,311
0122	Grain-sheep/beef cattle farming	21	170	644	1,486	1,467	220	4,008
0123	Sheep-beef cattle farming	52	169	193	125	74	20	633
0124	Sheep farming	212	427	562	536	263	25	2,025
0125	Beef cattle farming	190	434	269	139	93	50	1,175
0130	Dairy cattle farming	8	11	39	176	253	28	514
0141	Poultry farming (meat)	—	2	3	7	31	8	51
0142	Poultry farming (eggs)	1	4	8	15	36	26	90
0151	Pig farming	7	16	25	27	39	18	132
0152	Horse farming	21	36	24	12	7	1	101
0153	Deer farming	2	10	6	11	7	3	39
0159	Livestock farming n.e.c.	4	23	18	7	6	12	70
0161	Sugar cane farming	—	—	—	—	—	—	—
0162	Cotton growing	—	—	—	—	—	—	—
0169	Crop and plant growing	4	11	13	7	14	8	57
01	Total agriculture	760	1,700	2,297	3,284	3,756	1,114	12,911
..	Other industries	8	25	15	24	11	3	86
..	Unclassified	131	—	—	—	—	—	131
..	Total all industries	899	1,725	2,312	3,308	3,767	1,117	13,128

(a) Due to a variety of reasons a number of establishments neither grew crops nor grazed livestock during the year ended 31 March 1993.

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*.

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.



# Agriculture, Forestry and Fishing

**TABLE 12.2 - NUMBER OF ESTABLISHMENTS WITH AGRICULTURAL ACTIVITY  
BY INDUSTRY AND AREA OF ESTABLISHMENT, 1992-93 (a)**  
Reference: Catalogue No. 7102.0

Industry of establishment ANZSIC code    Description		Area of establishment (hectares)					Total
		0-49	50-499	500-2,499	2,500-9,999	10,000-49,999	
0111	Plant Nurseries	149	9	2	1	—	162
0112	Cut flower & flower seed growing	92	20	4	—	—	116
0113	Vegetable growing	316	201	27	2	—	546
0114	Grape growing	139	45	1	1	—	186
0115	Apple and pear growing	117	77	3	—	—	197
0116	Stone fruit growing	128	20	2	—	—	150
0117	Kiwi fruit growing	3	2	—	—	—	5
0119	Fruit growing n.e.c.	301	38	4	—	—	343
0121	Grain growing	1	82	1,134	1,067	27	2,311
0122	Grain-sheep/beef cattle farming	2	226	2,889	864	24	4,008
0123	Sheep-beef cattle farming	6	275	281	38	2	633
0124	Sheep farming	30	522	1,096	145	15	2,025
0125	Beef cattle farming	34	763	200	24	5	1,175
0130	Dairy cattle farming	14	433	67	—	—	514
0141	Poultry farming (meat)	47	4	—	—	—	51
0142	Poultry farming (eggs)	77	12	1	—	—	90
0151	Pig farming	27	63	39	2	1	132
0152	Horse farming	31	64	4	—	—	101
0153	Deer farming	20	18	1	—	—	39
0159	Livestock farming n.e.c.	43	11	15	1	—	70
0161	Sugar cane farming	—	—	—	—	—	—
0162	Cotton growing	—	—	—	—	—	—
0169	Crop and plant growing n.e.c.	11	21	22	3	197	57
01	Total agriculture	1,588	2,906	5,792	2,148	74	12,911
..	Other industries	23	31	23	5	1	86
..	Unclassified	59	44	22	3	—	131
..	Total all industries	1,670	2,981	8,818	2,156	75	13,128

(a) Due to a variety of reasons a number of establishments neither grew crops nor grazed livestock during the year ended 31 March 1993.

**TABLE 12.3 - FINANCIAL STATISTICS, AGRICULTURAL  
ENTERPRISES**  
(\$ million)

Reference: Catalogue No. 7507.0

	1990-91	1991-92	1992-93
Sales of crops	1,096.3	1,353.5	1,577.7
Sales of livestock	360.5	343.0	462.8
Sales of livestock products	1,023.8	737.8	690.8
Turnover	2,630.5	2,560.3	2,875.8
Purchases and selected expenses	1,538.3	1,620.3	1,710.5
Value added	927.1	1,193.5	1,188.9
Adjusted value added	747.6	1,000.5	1,006.4
Gross operating surplus	561.1	802.6	801.2
Total interest paid	268.9	215.9	190.8
Cash operating surplus	519.2	353.2	618.5
Total net capital expenditure	167.0	230.1	279.3
Gross indebtedness	1,984.0	1,919.7	2,192.5
Number of enterprises	11,179	11,346	11,136

## Agriculture in Western Australia

Wheat was the most important item in 1992-93 with a gross value of \$1,083.8 million, followed by wool with \$604.8 million. The total value of agricultural commodities produced rose slightly to \$3,114.8 million, a 9.3 per cent increase. Increases were recorded in the value of most commodities with total crops up 12.5 per cent from \$1,685.6 million to \$1,896.7 million. Livestock and livestock products rose by a smaller 4.6 per cent from \$1,163.5 million to \$1,217.8 million.

**TABLE 12.4 – GROSS VALUES, MARKETING COSTS AND LOCAL VALUES OF AGRICULTURAL COMMODITIES**  
(\$ million)

Reference: Catalogue No. 7503.5

	1990-91	1991-92	1992-93
<b>Crops and pastures—</b>			
Gross value of production	1,346.4	1,463.0	1,896.7
Marketing costs	244.2	196.9	267.5
Local value of production	1,102.2	1,266.1	1,629.2
<b>Livestock slaughterings and other disposals—</b>			
Gross value of production	388.6	423.9	466.2
Marketing costs	47.3	45.3	41.5
Local value of production	341.4	378.6	424.7
<b>Livestock products—</b>			
Gross value of production	1,001.4	745.5	751.8
Marketing costs	32.7	33.0	37.3
Local value of production	968.7	712.5	714.5
<b>Total agriculture—</b>			
Gross value of production	2,736.4	2,632.4	3,114.8
Marketing costs	324.2	275.2	346.4
Local value of production	2,412.2	2,357.2	2,768.4

## Land Use On Agricultural Establishments

In 1992-93, there were 13,128 agricultural establishments with an EVAO over \$22,500. They comprised 110.6 million hectares of land, or about 44 per cent of the total area of Western Australia.

Of the total area of these establishments, 5.7 million hectares were used for crops and 7.4 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 12.5 gives details of rural land use according to statistical division for 1992-93. Maps showing the boundaries of the statistical divisions and their component statistical local areas are located in the Appendix.

# Agriculture, Forestry and Fishing

**TABLE 12.5 - LAND USE IN EACH STATISTICAL DIVISION, 1992-93**  
Reference: Catalogue No. 7330.5

Statistical division	Agricultural establishments (number)	Land use during the season ('000 hectares)			Total area of establishments ('000 hectares)
		Used for crops	Under sown pastures	Lucerne (all purposes)	
Perth	1,144	6.7	29.6	0.5	79.9
South-West	2,257	33.8	509.9	2.0	750.3
Lower Great Southern	2,290	590.5	1,663.7	1.6	2,791.9
Upper Great Southern	1,913	1,091.5	1,635.9	—	3,397.0
Midlands	3,105	2,488.1	1,780.5	0.2	6,860.1
South-Eastern	751	435.8	1,029.2	1.3	17,314.0
Central	1,419	1,103.2	750.8	2.3	41,130.1
Pilbara	59	—	—	—	14,677.9
Kimberley	190	6.3	1.6	—	23,586.1
<b>Total</b>	<b>13,128</b>	<b>5,666.0</b>	<b>7,401.1</b>	<b>8.0</b>	<b>110,587.2</b>

## Crops and Pastures

### Wheat

Wheat plantings in 1992-93 were 3,669,000 hectares, an increase of 13.6 per cent over the previous year. This was the sixth 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 1992-93 of 5,979,000 tonnes was 26.2 per cent greater than in the previous financial year. The latest harvest represented a state yield of 1.63 tonnes per hectare, a new record well above the previous record of 1.58 tonnes per hectare. This continues the recent trend of yields well above the 20 year average yield of 1.16 tonnes per hectare. The record yield was largely the result of favourable growing conditions throughout the wheat-belt.

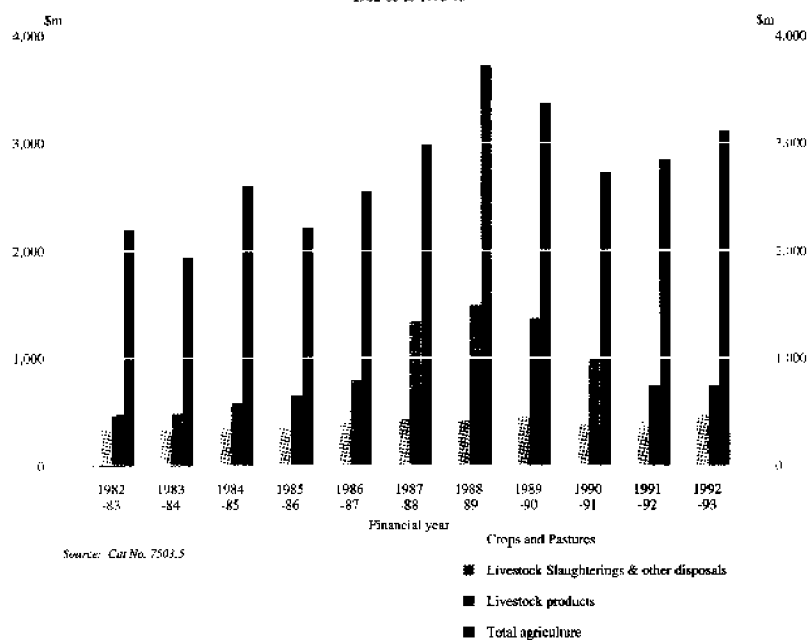
### Oats

Plantings of oats for grain in 1992-93 covered 332,000 hectares, a decrease of 9.7 per cent on the previous year. However, State production decreased by only 5.9 per cent to 578,000 tonnes as the yield reached a record 1.74 tonnes per hectare. The previous record of 1.67 tonnes per hectare had only been set in 1991-92. The improved yield was largely attributed to the good rains, especially in June and July, soon after planting in most growing areas.

### Barley

In 1992-93, barley plantings increased by 10.2 per cent over the previous year to reach 611,000 hectares. This was the largest area planted to barley since 1985-86 when the crop amounted to 824,000 hectares. Production increased 17.9 per cent to 1,061,000 tonnes, out-performing the increase in area and representing a new record state average yield of 1.74 tonnes per hectare. Favourable timing of rains after planting and generally good growing conditions have contributed to this record. The previous record of 1.62 tonnes per hectare had been set in 1991-92. Recent

**GROSS VALUES OF AGRICULTURAL COMMODITIES PRODUCED  
WESTERN AUSTRALIA  
1982-83 to 1992-93**



**THE EMERGENCE OF CANOLA IN WESTERN AUSTRALIA  
1982-83 to 1992-93**



yields have comfortably exceeded the 20 year average of 1.28 tonnes per hectare.

## Lupins

In 1992-93, lupin plantings increased to 823,000 hectares, an increase of 4.6 per cent on the previous year. This was the second highest area on record, exceeded only by the 876,000 hectares planted in 1987-88. However, production fell by 5.4 per cent to 826,000 tonnes leading to a decrease in the State average yield from a record 1.11 tonnes per hectare in 1991-92 to 1.00 tonnes per hectare in 1992-93. Although reduced, this latest yield was still above the 20 year average of 0.98 tonnes per hectare. The decreased yield could be attributed to the same late break in the season which led to record yields in cereal crops.

**TABLE 12.6 - CEREAL CROPS FOR GRAIN  
AREA AND PRODUCTION**

Reference: Catalogue No. 7330.5, 7503.5

	Unit	1990-91	1991-92	1992-93
<b>Wheat</b>				
Area	'000 ha	3,632	3,230	3,669
Production—				
Total	'000 t	5,448	4,736	5,979
Per hectare	tonnes	1.50	1.47	1.63
Gross value	\$'000	744,797	950,333	1,083,800
<b>Oats</b>				
Area	'000 ha	323	367	332
Production—				
Total	'000 t	494	614	578
Per hectare	tonnes	1.54	1.67	1.74
Gross value	\$'000	41,888	60,864	72,908
<b>Barley</b>				
Area	'000 ha	498	554	611
Production—				
Total	'000 t	742	900	1,061
Per hectare	tonnes	1.49	1.62	1.74
Gross value	\$'000	104,571	133,146	168,319
<b>Lupins</b>				
Area	'000 ha	664	787	823
Production—				
Total	'000 t	624	874	826
Per hectare	tonnes	0.93	1.11	1.00
Gross value	\$'000	99,639	148,166	162,899

## Other Grains and Oilseeds

At 11,616 hectares, plantings of Canola (rapeseed) in 1992-93 fell from the 1991-92 record of 16,702 hectares. This represented a decline of 30.4 per cent. The decline appeared to be the result of reduced numbers of farmers electing to plant the crop, possibly to allow for increased cereal crops, and is expected to be a temporary phenomenon. Production was 11,500 tonnes representing a yield of 0.98 tonnes per hectare.

Triticale, a wheat/rye cross, was first recorded in the Agricultural Census in 1978-79, and since then plantings increased each year until 1984-85 when a record 39,000 hectares were sown. Area planted in the 1992-93 season was 16,281 hectares, a decrease of 10.0 per cent on the 1991-92 figure of 18,102 hectares. Production, however, was 16,700 tonnes, an improvement of 6.7 per cent. This represented a yield of 1.10 tonnes per hectare compared to the 0.92 tonnes per hectare of the previous season.

Significant increases in the planting of field peas have occurred over the past decade. However, in 1992-93 plantings fell to 32,386 hectares, a decrease of 28.2 per cent over the previous season. Grain sorghum, linseed, rye, vetches, safflower and sunflower were also grown in small quantities.

### Hay

Large quantities of pasture hay were cut from clover and grass pastures, production in 1992-93 being 368,000 tonnes from 104,000 hectares. The principal cereal hay crop was oats and 357,600 tonnes of oaten hay were cut in 1992-93 from 83,800 hectares.

**TABLE 12.7 - HAY: AREA AND PRODUCTION**  
Reference: Catalogue No. 7330.5

	Unit	1990-91	1991-92	1992-93
Pasture (a)—				
Area	'000 ha	108	116	104
Production	'000 t	390	423	368
Crop (b)—				
Area	'000 ha	111	122	93
Production	'000 t	382	476	394

(a) Includes lucerne. (b) Principally from oats and wheat.

### Pastures

Of the 8.4 million hectares of improved pastures in the State, the majority are sown to the legume subterranean clover. Other species in use include medic, rose clover, serradella, lucerne and a variety of grasses, principally Wimmera ryegrass.

Sown pastures and grasses amounted to 7.4 million hectares in 1992-93, a reduction of around 1 million hectares or 11.9 per cent over the previous season.

*A history of the evolution of broadacre cropping can be found in previous issues of the Western Australian Year Book.*

**TABLE 12.8 - PASTURE SEED HARVESTED**  
Reference: Catalogue No. 7330.5

	Unit	1990-91	1991-92	1992-93
Area harvested	'000 ha	15.7	10.3	13.2
Production	tonnes	2,704	1,829	2,841

## Vegetables

In 1992-93, total vegetable plantings increased by 3.7 per cent over the previous year to reach 9,594 hectares, despite decreases in some of the more significant crops. Potato plantings accounted for 27.5 per cent of the vegetable area, covering 2,640 hectares — a decrease of 1.0 per cent over the previous year. More significantly, potato production rose by 10.6 per cent to 108,171 tonnes due to increased yields. The area for growing onions decreased by 26.4 per cent to 321 hectares as a result of lower market prices. However, production fell only 15.1 per cent as yields improved. Whilst the area for growing green peas remained relatively static at 1,034 hectares (down only 1.3 per cent), production fell by 13.1 per cent to 1,685 tonnes.

**TABLE 12.9 – PRINCIPAL VEGETABLES**  
**AREA, PRODUCTION AND GROSS VALUE**  
Reference: Catalogue No. 7330.5, 7503.5

	Unit	1990-91	1991-92	1992-93
<b>Carrots—</b>				
Area	hectares	682	706	715
Production	tonnes	29,841	31,040	36,439
Gross value	\$'000	12,883	15,144	20,049
<b>Cauliflowers—</b>				
Area	hectares	801	773	899
Production	tonnes	17,152	15,204	14,656
Gross value	\$'000	10,682	14,354	15,472
<b>Lettuce—</b>				
Area	hectares	417	389	377
Production	tonnes	14,354	17,971	17,451
Gross value	\$'000	6,227	8,346	8,293
<b>Onions—</b>				
Area	hectares	490	436	321
Production	tonnes	27,524	22,299	18,936
Gross value	\$'000	8,668	6,655	5,675
<b>Potatoes—</b>				
Area	hectares	2,877	2,614	2,640
Production	tonnes	110,095	97,817	108,171
Gross value	\$'000	37,514	33,170	34,635
<b>Tomatoes—</b>				
Area	hectares	236	219	247
Production	tonnes	8,178	7,587	8,385
Gross value	\$'000	7,429	8,426	8,933
<b>All vegetables—</b>				
Area	hectares	10,049	9,248	9,594
Gross value	\$'000	126,276	131,137	139,926

Minor reductions in area and production occurred for celery, cucumber and lettuce. However broccoli plantings increased in area by 39.0 per cent to 292 hectares and this was reflected in the 42.2 per cent increase in production to 2,994 tonnes. Rock melons and water melons continued to increase in both area and production. Carrot production increased 17.4 per cent on the previous year to 36,439 tonnes while cauliflower production

decreased from 15,204 tonnes in 1991-92 to 14,656 tonnes in 1992-93. Of the smaller root crop plantings, both parsnips and turnips showed greater grower interest with increased plantings of 25.0 and 50.0 per cent respectively.

*For a detailed history of vegetable growing in Western Australia, including background on areas predominantly involved, please refer to previous editions of the Western Australian Yearbook.*

## Fruit

### Apples and pears

In 1992-93, the number of apple trees recorded in the Census was 769,835, a decrease of 1.1 per cent over the previous season. Granny Smiths accounted for 60.5 per cent of the total 36,551 tonnes of apples produced. However, production of the newer varieties of apples such as Gala, Pink Lady and Sundowner, increased by 101.8 per cent compared to the 1991-92 season. This increase in new varieties made a significant contribution to the 7.1 per cent increase in apples produced. An increase in mature age trees resulted in production increasing despite the fall in total tree numbers.

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. Pear tree numbers rose to 192,142 in the 1992-93 season. This represented an increase of 9.6 per cent compared to the previous season. Nashi pear plantings have become the predominant variety rising to 31,879 trees, or 33.9 per cent of total pear trees under six years of age.

**TABLE 12.10 - FRUIT: AREA AND GROSS VALUE OF PRODUCTION**

Reference: Catalogue No. 7330.5

	Unit	1990-91	1991-92	1992-93
Area—				
Orchard fruit	ha	4,801	5,110	5,687
Plantation and berry fruit	"	536	657	783
Grapes	"	1,947	2,199	2,515
<b>Total</b>	"	<b>7,284</b>	<b>7,966</b>	<b>8,985</b>
Gross value of production—				
Orchard fruit	\$'000	34,427	44,984	45,984
Plantation and berry fruit	"	25,060	34,731	37,076
Grapes	"	10,960	11,919	14,205
<b>Total</b>	"	<b>70,287</b>	<b>91,634</b>	<b>97,265</b>

### Citrus fruit

Oranges remained the dominant citrus fruit in 1992-93. Production of oranges for the season increased by 22.9 per cent to 5,519 tonnes, reversing the general downward trend in production evident since the late 1960s. Much of this increase can be attributed to a large number of trees reaching maturity. The



**TABLE 12.11 – ORCHARD FRUIT: TOTAL NUMBER OF TREES,  
PRODUCTION AND GROSS VALUE**  
References: Catalogue Nos. 7330.5, 7503.5

	Unit	1990-91	1991-92	1992-93
<b>Apples—</b>				
Trees	'000	726	778	770
Production	tonnes	36,156	37,418	36,551
Gross value	\$'000	16,104	19,497	17,756
<b>Pears—</b>				
Trees	'000	180	175	192
Production	tonnes	7,254	8,399	8,311
Gross value	\$'000	3,679	4,997	5,596
<b>Lemons and limes—</b>				
Trees	'000	18	18	19
Production	tonnes	1,106	1,125	1,191
Gross value	\$'000	931	738	833
<b>Mandarins—</b>				
Trees	'000	52	55	66
Production	tonnes	1,158	1,315	1,348
Gross value	\$'000	993	1,830	1,083
<b>Oranges—</b>				
Trees	'000	173	183	190
Production	tonnes	5,128	5,304	6,519
Gross value	\$'000	1,592	1,830	1,882
<b>Nectarines—</b>				
Trees	'000	114	147	168
Production	tonnes	1,732	2,333	2,225
Gross value	\$'000	1,836	2,333	2,769
<b>Peaches—</b>				
Trees	'000	117	126	150
Production	tonnes	2,355	2,507	2,145
Gross value	\$'000	2,920	4,070	3,881
<b>Plums and prunes—</b>				
Trees	'000	193	190	218
Production	tonnes	3,051	3,494	3,563
Gross value	\$'000	3,450	4,392	5,090

number of trees capable of commercial crop production rose by 48.7 per cent while total orange tree numbers rose only 3.5 per cent. Production of lemons and limes increased by 5.8 per cent to 1,191 tonnes. The number of mandarin trees increased by 20.7 per cent to 66,500 trees while an increase in production of 2.5 per cent saw 1,348 tonnes produced. Grapefruit production fell 21.8 per cent to 597 tonnes as a result of a 13.2 per cent decrease in the number of mature trees.

#### 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 1992-93 with most types of stone fruit recording increases. Production of avocados rose 102.0 per cent to 929 tonnes. This

was partly the result of a 17.9 per cent increase in the number of avocado trees aged over six years. The general trend of steadily increasing nectarine production over recent years was reversed in 1992-93. A fall of 4.6 per cent in production to 2,225 tonnes has been attributed, in part, to poor weather conditions in the growing areas. This decrease occurred despite an increase of 3,500 (or 5.5 per cent) in the number of mature nectarine trees. The trend of increasing plum production evident since 1988-89 continued with a 2.0 per cent increase to 3,563 tonnes. Apricot production also increased during 1992-93 but peach production fell despite an increase in mature tree numbers. Mango production fell 0.4 per cent despite a 52.7 per cent increase in mature tree numbers. These decreases in production were due to storms prior to harvest in many of the growing areas.

#### *Vineyards*

In 1992-93, the total area of plantings for grapes were 2,527 hectares - an increase of 14.9 per cent on the previous year's plantings of 2,199 hectares. The area of red grapes planted was 1,252 hectares producing 6,527 tonnes. White grapes produced 7,315 tonnes from 1,275 hectares. Winemaking production increased by 4.1 per cent to 10,167 tonnes while production of grapes for drying increased by 71.8 per cent to 1,441 tonnes. Table and other production rose by 13.7 per cent to 2,234 tonnes.

**TABLE 12.12 - GRAPES: AREA AND PRODUCTION**

Reference: Catalogue No. 7330.5

	Unit	1990-91	1991-92	1992-93
Area of vines—				
Bearing	ha	1,688	1,919	2,261
Not yet bearing	"	260	280	254
Grapes for wine making and table use—				
Quantity	tonnes	9,734	9,763	10,163
Gross value	\$'000	10,025	11,196	13,050
Grapes for drying—				
Quantity	tonnes	1,085	839	1,347
Gross value	\$'000	934	722	1,155

#### *Other fruit*

Banana production continued to increase during 1992-93, with a 11.4 per cent rise in production to 18,094 tonnes. The average yield per bearing hectare was the highest on record at 41.3 tonnes, surpassing the record average yield of 39.8 tonnes per hectare reached in 1991-92. The total area of bananas rose to 566 hectares, with bearing area increasing to 438 hectares.

Strawberry production decreased for the first time since 1987-88, following the record 1991-92 crop of 2,257 tonnes. Production fell by 24 per cent to 1,716 tonnes despite a record bearing area of 102 hectares. The total area of strawberries also increased by 93 per cent to a record 145 hectares. The average yield per hectare fell to 16.8 tonnes per hectare, largely due to hailstorms in October

and November 1992 causing heavy strawberry losses in the Wanneroo area, and difficulties with labour availability during harvesting. Nearly 90 per cent of the area planted is within the Perth Statistical Division.

## Nurseries

Nurseries and the Nursery industry were the subject of a new National collection during 1992-93. This detailed collection was sponsored by the Nursery Industry Association of Australia (NIAA) for a three year period and collected additional data on labour and other operating costs associated with the operation of nursery businesses. For 1993-94, department stores operating nursery sections will be included. Data from the 1992-93 collection was not available at the time this publication was prepared, but is scheduled for release in late 1994.

**TABLE 12.13 - NURSERIES (a)**  
**AREA AND GROSS VALUE**  
Reference: Catalogue Nos. 7330.5, 7503.5

	Unit	1990-91	1991-92	1992-93
Area	hectares	1,724	1,541	1,987
Gross value	\$'000	53,220	45,001	62,359

(a) Including cut flowers and cultivated turf.

## Artificial fertiliser

Fertiliser usage rose from 767,000 tonnes in 1990-91 to 797,000 tonnes during 1992-93. A similar increase in the area to which fertilisers were applied was also recorded, rising from 7,284,000 hectares to 7,455,000 hectares.

The area treated by soil conditioners decreased by 41 per cent to 151,600 hectares. A total of 154,500 tonnes of soil conditioners including lime, gypsum and dolomite, were applied.

**TABLE 12.14 - ARTIFICIAL FERTILISER USED ON RURAL HOLDINGS**  
Reference: Catalogue No. 7330.5

	Unit	1990-91	1991-92	1992-93
Artificial fertiliser used—				
Area fertilised	'000 ha	9,129	7,284	7,455
Quantity used	'000 t	1,010	767	797
Soil conditioners—				
Area treated	'000 ha	161	262	152
Quantity used	'000 t	199	(a)	154

(a) Not collected

## Livestock

### Sheep

Sheep numbers continued to decrease during 1992-93 by 3.2 per cent to a total of 33.0 million at the end of March 1993. This followed a 6.4 per cent decrease in the previous year.

Slaughterings to June 1993 increased 24.4 per cent over the previous year. The number of sheep and lambs slaughtered increased to 3,752,300. The gross value of sheep and lambs slaughtered also increased to \$147.2 million, a rise of 27.5 per cent over the previous year.

**TABLE 12.15 - LIVESTOCK NUMBERS AT 31 MARCH**  
(000)

Reference : Catalogue No. 7113.5

	1991	1992	1993
Meat cattle	1,457.3	1,536.3	1,532.0
Milk cattle (excludes house cows)	108.7	112.8	116.2
Sheep	36,390.0	34,060.5	32,964.8
Pigs	270.4	317.8	305.3
Poultry	5,365.6	5,140.7	6,496.7

**TABLE 12.16 - SHEEP NUMBERS AND DISTRIBUTION AT 31 MARCH**

Reference: Catalogue No. 7221.5

Year	In agricultural areas		In pastoral areas		Number
	Number	Proportion of State total	Number	Proportion of State total	
	'000	per cent	'000	per cent	'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	33,934	93.2	2,456	6.7	36,390
1992	31,782	93.3	2,279	6.7	34,060
1993	30,741	93.2	2,224	6.8	32,965

### Wool

The National Council of Wool Selling Brokers has estimated the 1992-93 wool clip at 205,540 tonnes representing a 10.6 per cent increase over the previous year. The 1989-90 clip of 236,079 tonnes remains the highest on record and falling sheep and lamb numbers mean it is unlikely to be exceeded in the foreseeable future. Numbers of sheep and lambs shorn in 1992-93 also increased to 43,490,000 - 11.2 per cent more than in 1991-92 despite the slight fall in total sheep population. The latest average clip per head was only marginally down on the 4.65 kilograms per head of the previous season, decreasing to 4.63 kilograms per animal shorn.

**TABLE 12.17 – SHEEP SHORN AND WOOL PRODUCTION AT 30 JUNE (a)**  
Reference: Catalogue No. 7221.5

	Unit	1990-91	1991-92	1992-93
Sheep shorn	'000	35,530	33,459	35,620
Lambs shorn	"	7,636	5,648	7,870
<b>Total</b>	"	<b>43,165</b>	<b>39,107</b>	<b>43,490</b>
Average weight of wool shorn	kg	4.97	4.65	4.63
Wool production (greasy)—				
Shorn	'000 t	215	182	201
Dead, fellmongered, exported on skins	"	8	4	4
<b>Total</b>	"	<b>222</b>	<b>186</b>	<b>206</b>

(a) Data supplied by the National Council of Wool Selling Brokers.

## Cattle

Cattle statistics are classified according to the two broad categories of 'meat production' and 'milk production', regardless of breed. At 31 March 1993, meat cattle comprised over 93 per cent of the State's cattle herd.

In 1993, the State meat cattle herd was 1,532,000, a fall of less than 1 per cent on the previous season. 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 relatively stable at about 1,500,000.

**TABLE 12.18 – LIVESTOCK SLAUGHTERED AND MEAT PRODUCED**

Reference: Catalogue Nos. 7221.5, 7503.5

	Unit	1990-91	1991-92	1992-93
Livestock slaughtered (a)—				
Sheep and lambs	'000	5,769	4,255	5,233
Gross value (b)	\$'000	91,541	115,485	147,208
Cattle and calves	'000	449	431	457
Gross value (b)	\$'000	180,309	179,628	186,664
Pigs	'000	466	526	568
Gross value (b)	\$'000	58,870	61,923	64,149
Meat produced (c)—				
Mutton and lamb	tonnes	107,880	79,970	100,316
Beef and veal	"	95,637	91,804	100,499
Pigmeat produced (c)(d)	"	26,993	30,967	33,562

(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.

**Slaughtering** Slaughterings of cattle and calves in the year to June 1993 rose by 6.0 per cent to 456,900. This followed a 3.8 per cent decrease the previous year. The value of cattle and calves slaughtered also increased 3.9 per cent to \$186.6 million.

**Dairying** 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 1993 numbered 116,200 - a 3.0 per cent increase over the previous year. Milk production for 1992-93 rose 7.3 per cent on the previous year. This is the fourth year milk production has increased representing in a 23 per cent rise in production since 1989.

**TABLE 12.19 - WHOLE MILK PRODUCTION (a)**  
Reference: Catalogue No. 7221.5

	Unit	1990-91	1991-92	1992-93
Quantity	million L	283	302	318
Gross value	\$'000	93,875	104,067	114,044

(a) Includes milk used for processing.

**Pig raising** 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 1993 stood at 305,300, a fall of 3.9 per cent on the previous year. Slaughterings rose 7.9 per cent in the year to June 1993 but the gross value of these slaughterings rose only 3.6 per cent, reflecting the lower market prices.

**Poultry farming** Poultry numbers have risen significantly with a total number of 6,496,700 for 1992-93. The number of turkeys remained fairly static at 24,000 in 1992-93. Egg production increased slightly with 18,845 dozen eggs produced during 1992-93. Poultry slaughtered tonnage increased by 5.0 per cent, to 39,421 tonnes.

**Beekeeping** The number of productive hives decreased from 21,800 in 1991-92 to 19,700 in 1992-93. Honey production fell to 2,039 tonnes a decrease of 9.9 per cent. An extensive review of the methods of collecting beekeeping statistics is currently underway which should result in the collection of production data directly from honey packers rather than beekeepers. Initially, the two collections may run concurrently to evaluate their relative accuracy.

**TABLE 12.20 - EGG PRODUCTION AND POULTRY  
SLAUGHTERED FOR TABLE PURPOSES  
YEAR ENDED 30 JUNE**

Reference : Catalogue No. 7221.5

	Unit	1990-91	1991-92	1992-93
Egg production—				
Quantity (a)	'000 dozen	18,578	18,059	18,845
Gross value	\$'000	30,591	30,305	39,370
Poultry slaughtered for table purposes—				
Dressed weight	tonnes	35,299	37,526	39,421
Gross value	\$'000	57,724	61,028	67,977

(a) Source: Western Australian Egg Marketing Board.

**TABLE 12.21 - BEEHIVES AND PRODUCTION OF HONEY AND  
BEESWAX**

Reference: Catalogue No. 7221.5

	Unit	1990-91	1991-92	1992-93
Beehives—				
Productive	'000	20	22	20
Unproductive	"	6	6	5
Honey production	tonnes	1,490	2,264	2,039
Beeswax production	"	28	38	38

## Forestry

### Forest Production

Forest production in Western Australia falls into three broad categories: Hardwoods, Total Sawlogs and Total Log Timber. Of the hardwoods, jarrah and karri remain the dominant species, amounting to some 581,432 cubic metres. This equates to 92.0 per cent of total hardwood production or 30.9 per cent of total log timber production in the State during 1992-93. Total log timber production for 1992-93 rose by 3.5 per cent from 1,817,115 to 1,881,517 cubic metres. Total hardwood production fell by 18.0 per cent to 631,953 cubic metres but pine production increased by 35.3 per cent to 149,487 cubic metres. This led to a small (1.4 per cent) increase in total sawlogs, up from 770,784 cubic metres to 181,440 cubic metres.

*Further detail on the history and current management of the States' forests can be found in previous editions of the Western Australian Yearbook or the Department Conservation and Land Management.*

TABLE 12.22 – LOG PRODUCTION FROM CROWN LAND  
AND PRIVATE PROPERTY  
1992-93  
(cubic metres)

Type	Crown Land	Private Property	Total
Sawlog Timber (a)—			
Hardwood—			
Jarrah	379,550	6,269	385,819
Karri	189,596	6,017	195,613
Marri	41,290	4,297	45,587
Blackbutt	1,303	188	1,491
Wandoo	331	338	669
Sheoak	1,494	19	1,513
Other	1,098	163	1,261
Total Hardwood	614,662	17,291	631,953
Pine	133,346	16,141	149,487
<b>Total Sawlogs</b>	<b>748,008</b>	<b>33,432</b>	<b>781,440</b>
Other log material (b)—			
Hardwood	643,583	98,778	742,361
Softwood	279,195	78,521	357,716
<b>TOTAL LOG TIMBER</b>	<b>1,670,786</b>	<b>210,731</b>	<b>1,881,517</b>

(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 1992-93

## Fisheries

Following a review of the collection and dissemination of fisheries statistics in late 1993, it was decided that the Australian Bureau of Agricultural Research Economics (ABARE), with assistance from State Fisheries Departments, would become the principal collector of this data. This year finds the collection in transition and, at the time of going to print, no data was available.

*A detailed history and background to the fishing industry, as well as historical statistics can be found in previous editions of the Western Australian Yearbook.*

### References

- ABS Publications      *Agricultural Industries, Financial Statistics, Australia* (7507.0)  
                              *Agriculture, Western Australia* (7113.5)  
                              *Characteristics of Australian Farms* (7102.0)  
                              *Livestock and Livestock Products, Western Australia* (7221.5)  
                              *Summary of Crops, Western Australia* (7330.5)



*Value of Agricultural Commodities Produced, Western Australia*  
(7503.5)

*Other Publications*      *Annual Report.* Department of Conservation and Land  
Management.

*Annual Report.* Western Australian Department of Agriculture.





# ECONOMY

the

## economy

## Chapter 11

# THE ECONOMY

---

Contents	Page
<b>The Year in Review</b>	
Consolidation in 1993-94	189
Key Indicators	190
Prospects for 1994-95	192
<b>Using ABS data to track the Western Australian Economy</b>	
Economic and Social Data	194
State Accounts	195
Indicator of Trends	196
References	198

## Chapter 11

# THE ECONOMY

---

*The first section of this chapter, an analysis of the performance of Western Australia's economy in 1993-94 and prospects for 1994-95, has been provided by Ms Nicky Cusworth, Economist, Chamber of Commerce and Industry, Western Australia.*

## The Year in Review

### Consolidation in 1993-94

In 1993-94 Western Australia's economy maintained further strong growth consolidating upon the rapid expansion which had been achieved since the trough of recession in 1990-91. Not only was absolute growth strong, but significantly, Western Australia's growth relative to the rest of Australia was high.

The Western Australian economy recorded the strongest growth of all States across a range of key indicators - building approvals, employment, retail turnover and vehicle registrations. The unemployment rate, for example, was the lowest of the States (though not the Territories), while growth in Gross State Product was 7.7 per cent, again the highest of the States. The rebound in private business investment of 9 per cent followed growth in 1992-93 of almost 30 per cent. Table 11.1 shows the growth in some key indicators for Australia and Western Australia over the past five financial years. It also shows Western Australia's growth rate ranked relative to the other five states.

Such league tables can provide useful guides to relative economic performance, but it is important to treat them carefully. The relative performances of the states, and their absolute growth levels, have as much to do with the timing of the economic cycle as with fundamental economic strengths.

At least some of Western Australia's apparently strong relative performance reflects its experience over the business cycle - a sharper downturn in 1989 to 1991 followed by an earlier and stronger recovery from 1992 onwards. Thus, the strong growth recorded in 1992-93 and 1993-94 is in marked contrast with Western Australia's performance in the trough of recession. In 1990-91 the contraction in many areas of economic activity was the worst of the states, or second only to Victoria.

**TABLE 11.1 – WESTERN AUSTRALIA'S ECONOMIC PERFORMANCE IN RECESSION AND RECOVERY (a)**

Reference: Catalogues 6202.0; 9303.0; 8731.0; 8501.0; 5646.0; 5242.0

Year	1989-90	1990-91	1991-92	1992-93	1993-94
<b>WESTERN AUSTRALIA (b)</b>					
CPI Inflation (c)	8.3(1)	5.1(3)	0.8(6)	0.3(6)	2.2(2)
Unemployment Rate	6.7(4)	9.3(2)	10.9(4)	10.2(6)	8.9(6)
Building Approvals	-37.8(6)	-15.9(5)	28.6(2)	21.0(1)	18.2(1)
Employment	2.1(6)	-0.7(5)	-1.1(2)	1.9(2)	4.2(1)
Business Investment	2.0(3)	-6.4(5)	0.6(1)	29.1(1)	9.0(2)
Real Retail Turnover	4.3(2)	-1.3(5)	5.0(1)	6.8(1)	7.5(1)
Vehicle Registrations	-3.1(6)	-15.0(5)	7.5(1)	10.8(1)	6.9(2)
National/State Accounts—					
Current GSP(I) (d)	10.1(2)	4.4(1)	3.1(3)	5.8(2)	7.7(1)
Real Final Demand	2.4(4)	-4.8(6)	1.5(2)	6.8(1)	3.4(1)
Real Priv. Consumption	4.0(3)	1.1(4)	4.0(1)	5.3(1)	5.4(1)
Real Priv. Investment	-4.4(3)	-19.7(5)	-3.1(2)	16.5(1)	11.4(1)
<b>AUSTRALIA</b>					
CPI Inflation (c)	8.0	5.3	1.9	1.0	1.8
Unemployment Rate	6.2	8.3	10.3	10.9	10.5
Building Approvals	-24.9	-10.0	19.2	13.6	8.3
Employment	3.8	-0.6	-1.9	0.0	1.9
Business Investment	2.0	-5.3	-14.9	6.3	5.2
Real Retail Turnover	2.7	-1.5	2.3	1.0	2.5
Vehicle Registrations	10.3	-13.6	-3.9	3.9	6.0
National/State Accounts—					
Current GSP(I) (d)	9.0	2.4	2.1	4.3	5.4
Real Final Demand	3.2	-1.4	0.7	2.3	2.7
Real Private Consumption	4.7	1.0	2.5	2.5	2.8
Real Private Investment	-4.5	-11.3	-7.7	5.0	5.7

(a) Figures for CPI and Unemployment are Average Rate over year. All others are Yearly Percentage change. (b) 1-6 Western Australia's rank of the six Australian States (excludes Territories). (c) Capital cities only. (d) Not adjusted for inflation.

It is especially important to bear these cyclical factors in mind because ranked comparisons of States' growth rates are likely to show Western Australia in a less favourable light in 1995. Growth in employment and retail turnover in Western Australia started to accelerate in 1991-92, while the national recovery only really gained momentum in mid-1993. The rebound in Western Australia's employment and retail growth peaked in late 1993 and early 1994, and growth decelerated somewhat before levelling out in the third quarter.

#### Key Indicators

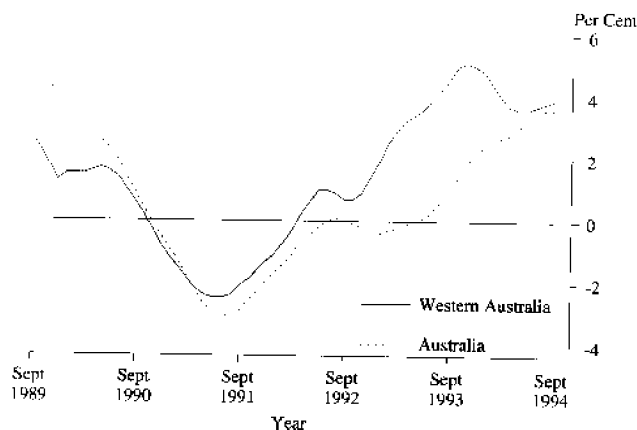
By early 1994, there were already signs that some economic activity in Western Australia was levelling off. As the year progressed, Western Australia's annual growth in some areas had fallen into line with or behind the national average in a number of key areas; employment growth, building approvals and retail sales being perhaps the most significant.

Nationally, growth in employment and retail turnover still seemed to be accelerating by the third quarter of 1994. As a result

of these two trends, growth rates in the Western Australian and national economies converged.

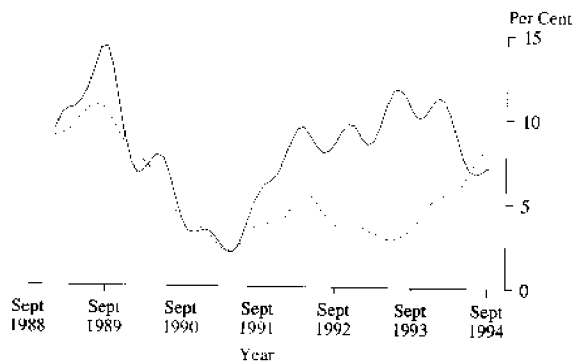
The building cycles in the respective economies were much more closely synchronised but the cycle in Western Australia was more pronounced, with a steeper downturn in 1989-90 and sharper acceleration from 1991-92. From May 1994 building approvals trended downwards in Western Australia, and positive annual growth rates recorded later in the year reflected strong growth over most of 1993-94.

**DIAGRAM 11.1  
EMPLOYMENT GROWTH**



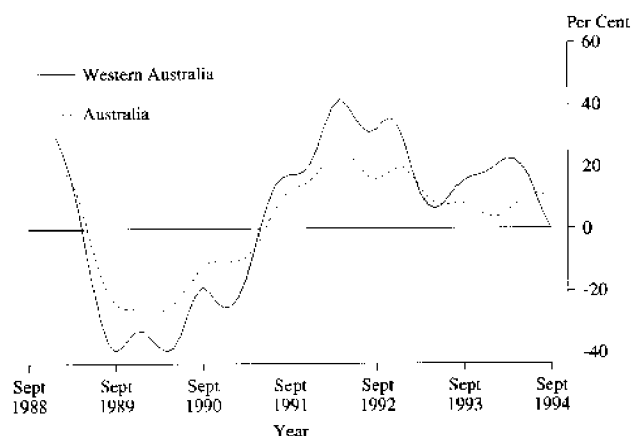
Source: ABS Cat. 6203.0

**DIAGRAM 11.2  
RETAIL TURNOVER**



Source: ABS Cat. 8501.0

DIAGRAM 11.3  
BUILDING APPROVALS



Source: ABS Cat. 8731.0

**Prospects for 1994-95** The fundamentals of Western Australia's economy which provided it with such a strong and early impetus out of recession look as healthy as ever. This is perhaps most exemplified by those areas of economic activity likely to perform strongly in Western Australia over the medium term - investment and exports.

Total business investment in Western Australia rose by 40 per cent in the two years to 1993-94. By 1993-94 Western Australia accounted for over 20 per cent of Australian business investment.

This investment surge has been driven by the mining sector, which in 1993-94 invested \$3.8 billion - 70 per cent of Western Australian business investment and 14 per cent of all investment across Australia. This compares with total business investment of \$1.4 billion in South Australia and \$4.0 billion in Queensland.

Prospects for continued growth in mining capacity, and subsequent output, look good. A range of new projects are planned or in progress. If there is some cause for concern in the generally strong growth in investment in Western Australia, it is that the recovery has so far been confined largely to the mining sector, although investment in finance, property and business services has also picked up.

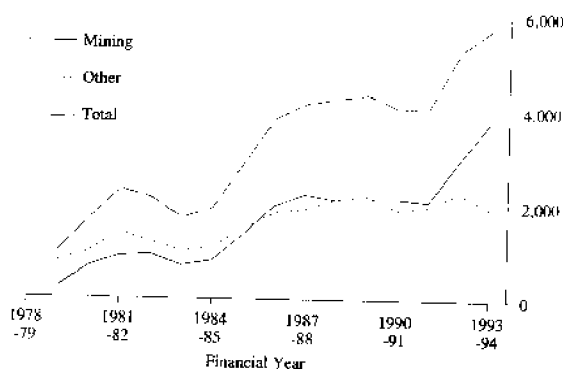
Manufacturing investment fell again in 1993-94 to its lowest level in eight years, in contrast with the modest but positive growth achieved nationally over the past two years.

Strong investment in Western Australia's internationally oriented mining sector augurs well for future growth in export earnings. While the rising dollar could dampen the growth in export revenues from rising world commodity prices, it should not offset

190

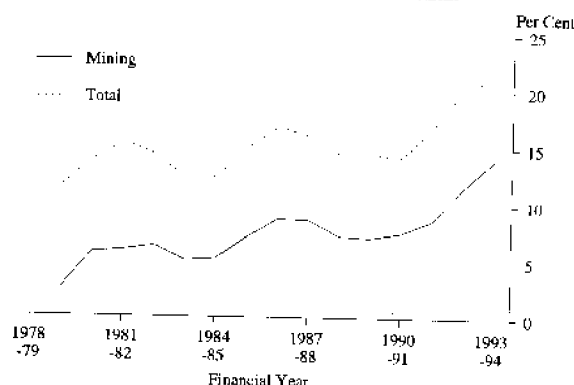


DIAGRAM 11.4  
WESTERN AUSTRALIAN BUSINESS INVESTMENT  
\$ Million



Source: ABS Cat. 5646.0

DIAGRAM 11.5  
WESTERN AUSTRALIAN BUSINESS INVESTMENT  
As a percentage of Australian Investment



Source: ABS Cat. 5646.0

it completely (though this is small consolation for those exporters, such as iron ore producers, whose prices are not yet rising).

Western Australia's contribution to national exports has slipped back a little from its peak at over 25 per cent in 1991-92. However, the strengthening world economy and increase in mining capacity should support a resumption of strong growth in Western Australian exports, which have been sluggish over the past two years.

While prospects for minerals exports look bright, there may be something of a question mark over whether the strong growth in non-mineral manufactured exports will be sustained unless investment and capacity start to expand.

In the short term, Western Australia's economic prospects look generally sound although in some areas of economic activity, recorded growth rates will probably be lower in 1995 than over

the past two years, both in absolute terms and relative to the national average.

Residential building activity, for example, is expected to contract, while retail sales growth looks set to stabilise. This was to be expected given that growth in retail sales was running ahead of household income growth and always looked likely to moderate. Employment growth, too, may level out at a rate closer to the current trend rate of 3 per cent than the 5 per cent peak recorded in 1993-94.

In the more medium term, prospects seem to be brighter. Many surveys indicate that Western Australia, or Western Australia and Queensland, will experience the strongest growth of the Australian states over the next few years. Employment, Gross State Product and export growth appear to have a firm foundation on sound economic fundamentals, notably strong investment.

However, this state's exposure to volatile international commodity cycles, and the uneven spread of its economic recovery into all sectors (notably manufacturing) raise some question marks over whether the strength of growth will match the rapid expansion of the late 1980s.

## Using ABS data to track the Western Australian Economy

*This section, explaining the use of ABS data, State Accounts in particular, to assess Western Australia's economic performance, has been written by Mr Alan Langford, Economist, Bank of Western Australia.*

The ABS is the primary source of data for analysis of the structure and performance of both the national and Western Australian economies. Official ABS statistics are analysed in conjunction with data disseminated by financial information services, industry associations, other Federal and State government departments and individual companies.

### Economic and Social Data

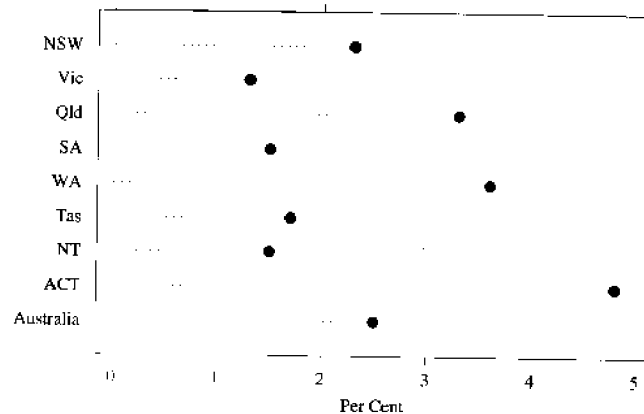
Although economists predominantly analyse ABS economic data (for example National Accounts, Balance of Payments, Labour Force and the Consumer Price Index) other key data collected by the Bureau have important implications for the general socio-economic development of the nation. For example, demographic data contained in the five yearly population census and associated inter-censal collections help to formulate marketing strategies, while the recent detailed survey of Social Trends in Australia assists policy makers in targeting social initiatives.

While purely national economic statistics steal the majority of the limelight in the popular press (for instance television coverage of the scramble at the Sydney office of the ABS for the monthly Balance of Payments bulletin) a range of important state based data is published by the Bureau. Businesses operating predominantly or exclusively within the confines of one or more of Australia's States or Territories have an obvious interest in state based data, while a nationally operating business may formulate future strategies based on comparative analysis of the various States' economies.

## State Accounts

Just as the National Accounts provide the broadest quarterly measure of the nation's economic output, the State Accounts detail the value of each State and Territory's economy each quarter. Although the latter are not able to provide a full equivalent to the nation's GDP, they nevertheless capture the vast majority of economic activity in each State and Territory on a consistent basis.

**DIAGRAM 11.6 - REAL STATE FINAL DEMAND**  
Percentage Average of Nine years to 1993-94

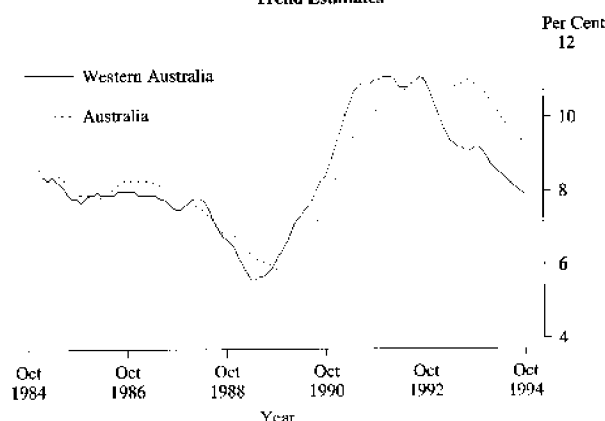


Source: ABS Cat. 5242.0

Historical analysis of the State Accounts reveals that Western Australia's real State Final Demand (SFD) grew at an average annual rate of 3.6 per cent in the nine years to 1993-94 (Diagram 11.6). By comparison, the aggregate SFD of all States and Territories grew at an average annual rate of 2.3 per cent over the same period. Only the ACT grew at a faster average rate.

When Western Australia's SFD is analysed in conjunction with a range of other important indicators (for instance Labour Force, Building Approvals, Retail Turnover and population growth estimates) users of ABS statistics are able to examine in detail many of the major determinants of activity in their particular area of interest.

DIAGRAM 11.7  
UNEMPLOYMENT RATES  
Trend Estimates



Source: ABS Catalogue 6202.0

Analysis of the State Accounts for individual years and quarters reveals that the depth of the recession in Western Australia in 1990-91 was more pronounced than in any other State or Territory. However, this State's recovery from recession in 1992-93 and 1993-94 was more vigorous than elsewhere.

One example of this trend is clearly illustrated by the comparative unemployment rates (Diagram 11.7) which show Western Australia's unemployment rate, which had risen above the national rate during the economic downturn of 1990-91, fell sharply on the strength of strong economic growth in 1993-94. During the latter half of 1994, the rate continued to remain well below the national level.

#### Indicator of Trends

The health of any particular State or Territory's labour market is an important element of the demand for a wide range of goods and services. When unemployment is high, retail turnover, for example, can be expected to struggle under the weight of consumers' constrained purchasing power. Conversely, when employment and population are simultaneously growing strongly, not only is retail turnover likely to increase but the robust consumption expenditure is likely to increase the demand for new residential dwellings (as was the case in the late 1980s).

The building and construction industry therefore closely monitors employment growth and demographic trends, as well as the more obvious building approvals, to assess the most likely level of construction activity in the future. That clutch of ABS statistics is read in conjunction with interest rate trends to construct a broad profile of Australians' needs for residential dwellings over time.

While the building industry itself has a significant direct interest in the future demand for residential dwellings, providers of finance also have a need to construct a profile of future trends not

only in that industry, but other sectors of the economy as well. Private investment in new residential dwellings was a major engine of growth in the early stages of Australia's recovery from the recession of the early 1990s. Rapid and substantial reductions in mortgage interest rates increased the affordability of home ownership, inducing strong growth in construction of new dwellings. The capital value of that building is reflected in the National Accounts in the expenditure based measure of gross domestic product [GDP(E)] under the classification "private capital expenditure (i.e. investment) on dwelling construction". Individual State and Territories' shares of that component of GDP in turn are detailed under an identical classification in the State Accounts. Just as falling mortgage interest rates generally fuel the demand for new residential dwellings, rising interest rates usually dampen the level of activity as renting becomes a relatively more attractive option. Thus, when interest rates are rising, ABS building approval data assumes added significance as builders, financiers and policy makers attempt to forecast the extent to which activity is likely to decline. Forecasting highlights the importance of building approvals - it is viewed as a "leading" indicator, because they provide a good guide to construction activity in the future. National and State Accounts, on the other hand, are key "lagging" indicators in that they detail what has actually happened in the past.

As important as is the level of interest rates to the demand for residential dwellings, demographic and employment growth trends also have important implications for the level of construction activity. If the level of employment were to continue to expand for a sustained period, then rising aggregate incomes could be expected at least partially to offset the impact of rising interest rates, while any acceleration in population growth (for instance due to higher levels of interstate migration) also would underpin demand.

### *Inflation and Interest Rates*

The interaction of ABS statistics and data published by other organisations becomes more apparent when the relationship between interest and inflation rates is considered. The Reserve Bank of Australia's (RBA) activation of monetary policy in August 1994 (that is, when it started to increase official short-term interest rates after almost five years of reductions) was predominantly based on the Central Bank's determination to head-off the possibility of an unmanageable resurgence of inflation in the wake of accelerating economic growth.

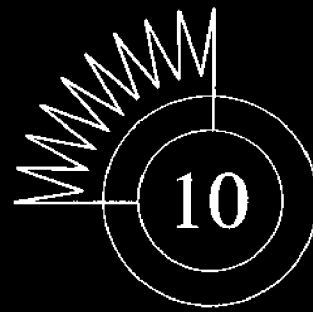
ABS measures of inflation, therefore, take on added importance, because virtually all Australian individuals and businesses have a keen interest in the level of interest rates. The consumer price index (CPI) and important derivations of the CPI (in particular Federal Treasury's "underlying" rate of inflation) head the RBA's inflation watch list. However, a wide range of important other measures of inflation, most of which are also derived from ABS

data, also shape the RBA's perceptions about inflationary trends. Examples of ABS price movement measures other than the CPI include building material price indices (both house and non-house) manufacturing input and output prices, the prices of exports and imports, and a range of implicit price deflators that are derived from the National Accounts. To return to the example of a residential builder, not only will a key measure of inflation such as the underlying measure impact on building demand via interest rates, but trends in the cost of house building material prices (indices of which are collected for all capital cities) also are important to the affordability equation.

As the composition of economic growth changes, different sets of statistics are analysed to target business in sectors of the economy that are growing at a faster rate than those that may already have begun to decelerate. That process is an integral part of the strategic and operational activities of all businesses.

### References

- ABS Publications*
- Australian National Accounts: National Income, Expenditure and Product* (5204.0)
- Australian National Accounts: State Accounts* (5242.0)
- Foreign Trade, Australia: Merchandise Exports and Imports by Country* (5422.0)
- Foreign Trade, Australia: Merchandise Exports* (5424.0)
- Foreign Trade, Australia: Merchandise Imports* (5426.0)
- State Estimates of Private New Capital Expenditure* (5646.0)
- The Labour Force, Australia, Preliminary* (6202.0)
- The Labour Force, Australia* (6203.0)
- Retail Trade, Australia* (8501.0)
- Building Approvals, Australia* (8731.0)
- Motor Vehicle Registrations, Australia* (9303.0)



# SPORT. and recreation

## Chapter 10

# SPORT AND RECREATION

---

Contents	Page
Key Sporting Organisations	177
<b>Sport in 1993</b>	
Local Events	178
<b>1993 Sport Census</b>	<b>180</b>
International Events	182
Obituaries	183
Sydney 2000	183
<b>Recreation</b>	
Some Of the Main Attractions Within 60 Kilometres of Perth	184



## Chapter 10

# SPORT AND RECREATION

---

*This section on sport in Western Australia during 1993 was compiled and written by Alan Newman for the Western Australian Sports Federation.*

### Key Sporting Organisations

#### *Ministry of Sport and Recreation*

The Ministry is responsible to the Minister for Sport and 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. The Ministry also administers the Sports Lottery fund.

#### *Western Australian Sports Federation (WASF)*

The WASF began preparing a Sports Plan for the State to guide sports development towards the year 2000. The plan takes into account the role and functions of Government, the responsibilities of sports organisations and the needs and expectations of the community.

The WASF Council, in setting criteria for membership, defined sport as "a human activity which is by its nature competitive; requires physical exertion and/or physical skill in competition; and is organised competitively with the object of achieving a result". It also put forward a submission on behalf of all sport to the Minister for Education calling for the compulsory physical education in primary schools.

The Federation adopted a new priority list for the funding and construction of major sports facilities. This placed a rowing/canoeing course as the number one priority followed by the State Tennis Centre, stage two of the Whiteman Park shooting complex and a major multisport outdoor stadium.

#### *Western Australian Institute of Sport (WAIS)*

WAIS, in its ninth year of operations, continued to achieve its goal of improving the level of performance of Western Australian athletes in international competition. At the end of 1993 WAIS employed 20 full-time coaches and several more on a part-time basis. WAIS scholarship holders Richard Nizielski (ice speed skating) and Scott Walker (four-man bobsleigh) were chosen in

Australia's team for the Winter Olympic Games at Lillehammer, Norway, in February 1994.

## Sport in 1993

### Local Events

#### *Australian Football*

The West Coast Eagles dream of winning successive Australian Football League (AFL) premierships was dashed when they lost 16.12 (108) to 11.10 (76) to Essendon in the first semi-final at the Melbourne Cricket Ground. The Eagles lacked the consistency of previous seasons and deficiencies in attack proved costly in the latter part of the season. Essendon beat Carlton by 34 points in the grand final.

Claremont won the Western Australian Football League (WAFL) premiership for the fourth time under the coaching of Gerard Neesham, beating West Perth 13.14 (92) to 8.14 (62) at Subiaco Oval. Claremont defender Dale Kickett won the Simpson Medal.

In State of Origin football, Western Australia beat South Australia by 24 points in Perth but South Australia won the return encounter in Adelaide by 36 points to set up a grand final against Victoria, which they duly won.

West Perth midfield player Neil Mildenhall (38 votes) won the Sandover Medal from Mike Richardson (Swan Districts). West Perth, the oldest existing WAFL club (formed 1891), played their last match at Leederville Oval before a crowd of more than 20,000. From 1994 West Perth will be known as the Joondalup Falcons with headquarters at the new Joondalup sporting complex. On 14 December 1993 the AFL announced that a Fremantle side would be offered a licence to join the competition in 1995.

#### *Cricket*

For the first time since 1988-89, Western Australia did not win either the Sheffield Shield or the national limited-overs competition for the Mercantile Mutual Cup. In the centenary year of the Sheffield Shield, Western Australia finished fourth. Western Australia reached the qualifying final of the limited-overs competition before being defeated by Victoria - 9/187 to 109.

#### *Hockey*

The WAIS Thundersticks became the only one of several Western Australian teams competing in national league competitions to achieve their ultimate objective, retaining the National Hockey League title won 12 months earlier. The Thundersticks, trailing 0-2 at half-time, took command in the second half to beat the Sydney Scorpions 4-3 in the Grand Final at Perth's Commonwealth Hockey Stadium.

The womens hockey team, the WAIS Diamonds, bowed out of the National Women's Hockey League premiership race when beaten 3-2 by the Balsam Arrows in the semi-finals played in Sydney.

### *Basketball*

The Perth Wildcats stumbled at the last hurdle in their quest for the NBL premiership, going down 104-103 to the Melbourne Tigers in the third and deciding match of the playoffs at the Perth Entertainment Centre.

The WAIS Breakers suffered a similar fate in the Women's National Basketball League when they lost 65-64 to the Sydney flames in the Grand Final in Sydney. Late in 1993 the Breakers were subject to a change of ownership when the franchise was brought by Australian Capital Equity, owned by Perth businessman Kerry Stokes.

### *Baseball*

The Perth Heat, beaten finalists in 1992, again performed admirably to qualify for the Australian Baseball League Grand Final, but proved no match for the Melbourne Monarchs, who won 14-2 and 1-0 at Parry Field and made a third game unnecessary.

### *Netball*

Western Australia, once a major power in Australian Netball, finished last of the eight teams at the national championships in Darwin. The appointment of former Australian world tournament player Michelle Wilkins as full-time coach will hopefully improve on-field performance.

### *Lawn Bowls*

Western Australia's bid to win the Australian Sides Championship for the third year running foundered in Adelaide when they were beaten in their first two matches of the Round Robin tournament. Victoria won the title and Western Australia finished fourth.

### *Yachting*

Western Australia won the interstate fleet racing championship for the Lexcen Cup for the third successive year. The seven-race series was sailed in Farr 36 yachts on Melville Water and Western Australia registered two wins, a second, two thirds and two fourths. The Western Australian boat skippered by Paul Eldrid also won the inaugural Lexcen Shield match-racing championship.

### *International Successes*

A number of Western Australians achieved success at international level in various parts of the world. They included Shelley Taylor-Smith (long-distance swimming); Grant Greenham (archery); Dean Capobianco (athletics); Maryanne DiFrancesco (women's basketball); Steve Srhoy and Pieter Harris (lawn bowls); Ross Dunkerton (car rallying); Helene Thurston (crocquet); Priya Cooper (disabled swimming); Tanya Holl (golf); Desly Hill (roller sport); Ben Sandstrom (pistol shooting); Carol Gianotti (tenpin bowling); Marilyn Lammass (weightlifting); Louise Suavage (wheelchair events); Ramon Andersson (kayaking); Peter Gilmour (yachting); Craig Mann (golf); Henk Vogels and Darryn Hill

### **1993 Sport Census**

**Contributed by Alan Farmer for the Western Australian Sports Federation**

One in three Western Australians is a registered member of a sporting association, according to the 1993 Sport Census, a joint operation by the Ministry of Sport and Recreation and Western Australian Sports Federation.

Questionnaires were sent to 102 Western Australian sporting associations. Of these 89 responded to a wide range of questions relating to membership, participation, fees, finance, coaching and administration. The other 13 associations did not lodge a return.

A summary of findings made these points:

- at the end of 1993 more than 598,000 individuals were registered members of sporting organisations;
- of these, more than 420,000 were active participants as players or competitors;
- the 10 sports with the highest membership figures were, in rank order, Football, Netball, Cricket, Lawn Bowls, Hockey, Golf, Basketball, Tennis, Indoor Cricket and Soccer;
- the ratio of registered male and female participants was 2 to 1;
- more than 4,100 clubs were affiliated with State associations;
- 35 per cent of sports were team sports and more than 19,100 teams were registered;
- State Government or statutory organisation funding provided the major source of income for 28 per cent of associations in the previous financial year; and
- more than 8,900 active accredited coaches were registered with State associations.

The Ministry of Sport and Recreation (MSR) concluded that registration figures provided by some associations were approximations and their accuracy was questionable.

MSR defined registered members as anyone who had paid a fee in return for membership registration. These included players and non-players, the generic term pertaining to those involved in any capacity other than participant/competitor (eg coach, administrator, associate, official).

Football, with 175,499, had by far the highest number of registrations followed by Netball with 41,499. However, Football's figures included more than 128,000 non-players, most of them social club members. Just over 47,000 footballers were registered players.

Sport Census 1993, is the fourth census to be conducted by MSR. Previous censuses were carried out in 1981, 1984 and 1990.

**MEMBERSHIP REGISTRATIONS**  
(Above 5,000)

<i>Sport</i>	<i>Number</i>
Football (WAFC)(a)	175,499
Netball	41,121
Cricket—men's	33,367
Hockey—men's	25,928
Basketball	25,000
Tennis	24,818
Cricket—indoor	24,400
Golf—men's	20,529
Bowls—men's	20,270
Soccer	16,422
Karate	14,270
Yachting	13,894
Bowls—ladies	12,084
Softball	10,142
Darts	9,615
Gymnastics	9,350
Golf—ladies	8,811
Swimming	6,863
Football—amateur	6,500
Rugby Union	6,468
Squash	5,801
Surf Life Saving	5,523
Eightball	5,502
Athletics—Little	3,391
Touch	5,350
Disabled Sports	5,134

(a) Including social club members

(cycling); Kate Fitzsimmons and Kathryn McQueen (yachting); Liz Smylie (tennis); Dave Macaulay (surfboard riding) and Roger MacKay (golf).

*National Champions* Many others won national championships. Most prominent of these were Ron Krikke (sprintcar racing); Grant Greenham (archery); Darryn Hill (cycling); Graham Hunt (darts); Priya Cooper (disabled swimming); Vyinka Arlow (diving); Miklos Szabo (judo); Mark Golding (karate); Desley Hill (roller sport); Blair McNaught (lifesaving); Alan Williams (smallbore rifle shooting); Jake Patterson (surfboard riding); Harry McDonald (shooting); Gary Caporn; Steve Fields; Tom Burt; Grant Anderson; Gerard Wilson; Kayne Binks and Nikki Bergel (yachting); Piers Goodman and Michelle Rodgers (kayaking); Dean Capobianco, James Miller, Renee Poetschka and Alison Inverarity (athletics); Ramon Andersson (kayaking); William Kirby (swimming); Emy Snook (rowing); Ben Sandstrom (pistol shooting); Jane Leary and Erica Jayatilaka (golf); Dale Britton (motocross) and Greg Chalmers (golf).

### International Events

*Tennis* Germany, represented by Michael Stich and Steffi Graf, became the fifth European country in five years to win the \$700,000 Hopman Cup mixed teams tournament at the Burswood Dome. They beat the Spanish combination of Emilio Sanchez and Arantxa Sanchez-Vicario 2-0 in the final.

*Golf* The \$300,000 Heineken Classic at The Vines was won by Peter Senior (Queensland) with a 13-under-par total of 275 from New Zealander Michael Campbell (278) and Victorian Robert Allenby (279).

*Baseball* Japan beat South Korea 11-4 in the final of the Asian Championship at Parry Field. In the playoff for the third place Taipeh defeated Australia 6-4.

*Surfriding* Australian Gary Elkerton overcame a star-studded field to win the men's event and compatriot Pam Burridge did best of the women in the \$130,000 Surfmasters Classic held on giant waves off Margaret River.

*Motocross* Western Australia's Dale Britton outpointed a field of leading overseas and Eastern States riders in the Manjimup 15,000 Classic.

*Sailing* The World Match Racing Championship, sailed on Matilda Bay with all skippers at the helm of identical Farr 36 class yachts, was won by Russell Coutts (New Zealand) from Ed Baird (United States) and Rod Davis (New Zealand). The European yacht *Intrum Justitia*, skippered by Britain's Lawrie Smith with an all-European crew, took line honours in the second leg of the Whitbread Round-The-World race, completing the voyage from Punta del

Este, Uruguay, to Fremantle two hours ahead of the Japanese entry Tokio, the overall race leader.

### *Motor Rallying*

Tragedy marred the running of the Telecom Rally Australia when co-driver Rodger Freeth died of chest injuries after the Subaru Legacy driven by fellow New Zealander Possum Bourne crashed near Sawyers Valley. The rally was won by Finland's Juha Kankkunen, at the wheel of a Toyota, from his countryman Ari Vatanen (Subaru) with Frenchman Francois Delecour (Ford Escort) third. Of the Australian drivers, Ross Dunkerton did best by finishing fourth. Kankkunen went on to clinch the world championship for the fourth time.

### *Horse Racing*

The \$250,000 Perth Cup, 3,200m, was won at Ascot by the Alan Matthews trained Field Officer, ridden by apprentice Peter Knuckey. Although downgraded to Group 2 status, the Perth Cup remained the State's premier horse race.

### *Harness Racing*

Western Australian pace *Jack Morris* was adjudged Australia's Harness Horse of the Year. Driven by Rod Chambers, he won the \$400,000 Interdominion Championship at Brisbane's Albion Park, and confirmed his status as the Number One pacer in Australia when Sean Harney drove him to victory in the Australian Pacing Championship at Moonee Valley.

### **Obituaries**

Noted sports personalities who died in 1993 included footballers Greg Brehaut, a great Perth wingman; and South Fremantle's goalkicking genius Bernie Naylor; champion jockey Frank Treen; winner of five Perth Cups; reinsman Frank Kersley; who drove Tennessee Sky to victory in the 1954 Interdominion Championship in Adelaide; and former WACA curator Roy Abbott; who achieved international recognition for turning out high-quality wickets used in first-class and international cricket fixtures.

### **Sydney 2000**

Sydney's success in being awarded the Olympic Games for the Year 2000 rekindled Western Australian interest in trying to secure more major international events in the lead-up to the Games. Perth has lodged a bid for the 1997 World Senior Cycling Championships and the 1998 World Swimming Championships

have also been targeted. Just before the end of 1993 Sport Minister Norman Moore said Perth had given notification of its interest in bidding for the 2002 Commonwealth Games. A Task Force was appointed to investigate the wisdom of lodging an official bid.

## Recreation

*Material for this section has been gratefully supplied by the Western Australian Tourism Commission.*

### **Some of the Main Attractions Within 60 Kilometres of Perth**

#### *Rottnest Island*

Rottnest Island is the most popular holiday haunt for the people of Perth. Only 18 kilometres off-shore from Fremantle, it was labelled a "terrestrial paradise" by the Dutch explorer Willem de Vlamingh, when he landed there in 1696. The entire island which is about 11 kilometres long and five kilometres wide, is a public reserve and wildlife sanctuary.

Vlamingh named it Rottnest literally meaning 'rat's nest' because of the tiny marsupial quokkas (small relatives of the kangaroo), which he thought were giant rats.

The Rottnest Hotel commonly known as the "Quokka Arms" was originally the summer residence of the Governors of Western Australia. The best way to explore the island is by bicycle, the main form of transport on the island. Cars are not seen on Rottnest, the only vehicles allowed being tour buses and service vehicles.

The island off-shore and on-shore is a fisherman's dream. There are daily air and ferry services from the mainland and Rottnest has a wide range of accommodation. Surrounding waters are clear and much praised by skin divers.

#### *Swan Valley Vineyards*

The Swan Valley vineyards are only a 20 minute drive from Perth, some can be approached along the Swan River. Cruises leave the Barrack Street Jetty every day on wine tasting tours. Sights to be seen on the way are historic riverside homes like Tranby House and Woodbridge.

#### *Yanchep National Park*

Yanchep National Park, 52 kilometres north of Perth, is within easy driving distance. Set in more than 2400 hectares of bushland and wildflowers, the park is renowned for its koalas, limestone caves and black swans.



Yanchep Beach is a popular swimming and fishing spot and has a big marina. Part of Western Australia's big lobster fishing fleet is based at Yanchep.

### *Underwater World*

Even closer to Perth at Hillarys Boat Harbour, 17 kilometres from the city centre, is one of the world's outstanding aquariums. The \$8.3 million Underwater World shows 2,500 sea creatures representing 120 species. All have been culled from the waters of the Indian and Southern oceans and include sharks and stingrays. Divers swim among the sharks at feeding time.

Visitors stand on a moving walk-way that places them at eye level with fish in the curved aquarium. Education is an important element of Underwater World's philosophy.

### *Cohunu Koala Park*

Cohunu Koala Park, 24 kilometres east of Perth, has many native animals. Apart from koalas, there are kangaroos, emus, wombats and talking parrots in their natural surroundings. A miniature railway runs through the sanctuary, which features a daily koala show.

### *Pioneer World*

Pioneer World, in the outer suburb of Armadale, is a recreation of life in Western Australia a century ago. Visitors can play two-up, pan for gold, sample damper and billy tea and watch tradesmen and craftsmen working in traditional methods. Young and old alike can experience the thrill of riding in a horse drawn buggy, or on one of the few remaining horse drawn merry-go-rounds. Many of the 20 independent traders and craftsmen dress in traditional costume and all are housed in authentic buildings of the period.

### *Rail Transport Museum*

The Rail Transport Museum is a big collection of steam, diesel and electric locomotives and rolling stock that represent the State's rich rail history. Located in Bassendean, it is only a ten minute drive by car from the city. Opened in 1974, the museum has the most comprehensive collection of rail artefacts and photographs housed under one roof anywhere in Australia.

### *Agridome Farm*

Agridome Farm offers a unique rural experience. It's about a 40 minute drive south of Perth and is located on the South-West Highway at Mundijong. Here the working relationship between farmer and sheep is described on stage and with pictures and music. There are also sheep-shearing and fleece demonstrations. Australia's numerous sheep breeds are paraded, the role of wool in our lives is demonstrated.

### *York*

The York Motor Museum is recognised as the finest collection of veteran, vintage, classic and racing cars in Australia. Established in 1979, it features more than 100 vehicles. The collection presents the evolution of motor transport with prime examples of the finest quality workmanship from each era. These range from an 1894 Peugeot to the Saudia Williams driven by Formula One Grand Prix world champion, Alan Jones. The museum promotes

and participates in numerous rallies, events and displays. In Avon Terrace, it also has a restoration and maintenance workshop.

York is 97 kilometres from Perth in the fertile Avon Valley. Western Australia's most historic inland town, it was first settled in 1831, only two years after the establishment of the Swan River Colony.

### *Rockingham*

Rockingham, is one of the most popular getaway spots for city people and is an aquatic playground only 46 kilometres from Perth. With its safe, sandy and clean beaches and a backdrop of Cockburn Sound, there is a heavy emphasis on water related leisure activities. Nearby are Garden and Penguin Islands and Point Peron.

Garden Island is the site of Australia's newest navel base, HMAS Stirling. Although the island is not accessible to the public by road, a coach tour operates from Perth to the island. The tour also visits Marapana Deer Park and Penguin Island before returning to Perth.

Penguin Island is home to a colony of fairy penguins that come ashore at dusk and return to sea at dawn. The penguins live on the island from March to November. Regular day-time ferry services operate weekends and school holidays during the peak seasons. Point Peron look-out gives a commanding view of Cockburn Sound and Shoalwater Bay with their attractive coastlines and islands.

### *Cable Water-Skiing*

Cable water-skiing is Australia's latest water sport. It has all the thrills of boat skiing and snow skiing, but is easier, safer and doesn't cost as much. The overhead cable system tows skiers around manmade lakes at Cable Ski Park in Spearwood, south of Fremantle. Speeds of up to 30km/hour for single ski slalom and 60 km/hour for bare-foot skiers offer challenge and exhilaration.

### *Sailing*

Sailing is a prominent activity on the wide waters of the Swan River, and many types of craft are available for hire. Almost on the doorstep of the city you can hire one of a fleet of Windrush 14ft surf cats suitable for beginners or experienced sailors. As well, there are plenty of sail boards and canoes for hire from the operators on the South Perth foreshore at Coode Street Jetty.

At the Nedlands Jetty across the Swan River, international class mini-twelves can be hired. The mini-twelve is a scaled down version of the twelve metre racing yacht and can accommodate one or two people.



# CULTURE

and the

# arts

## Chapter 9

# CULTURE AND THE ARTS

---

Contents	Page
Culture and the Economy	163
Music and Performing Arts at Major Venues	164
Work in Selected Culture/Leisure Activities	164
The Western Australian Department for the Arts	165
<b>Barron Films - Ship to Shore 2</b>	<b>168</b>
<b>The Per Cent for Art Scheme</b>	<b>169</b>
Western Australian Museum	170
The Art Gallery of Western Australia	171
Perth Institute of Contemporary Arts	172
The 1994 Festival of Perth	172
References	173

## Chapter 9

# CULTURE AND THE ARTS

---

*This chapter was prepared in consultation with the following organisations: Department for the Arts, Screen West, the Library and Information Service of Western Australia and the Art Gallery of Western Australia.*

### Culture and the Economy

Australian Bureau of Statistics Household Expenditure Survey figures demonstrate the importance of the Arts to the Western Australian economy. The figures indicate that the domestic market for arts, cultural and entertainment goods and services in Western Australia is approximately \$930 million per year.

This market is growing rapidly, and in the two years to 1993, employment in Western Australian arts and cultural industries grew by more than 30 per cent - well above the general industry average of 4.7 per cent. In all, over 18,900 people were employed in activities as diverse as film, radio, and live theatre productions, publishing, libraries, museums and art galleries.

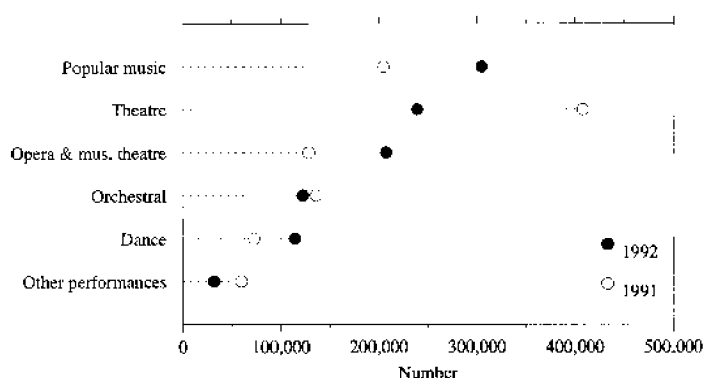
Data from the 1991 Census indicates that the total salaries paid to workers in Western Australia's arts and cultural industries was \$415.7 million. However, this figure is likely to be higher as the Census excludes those who had their 'main job' in other industries. During the same year, the total value of goods and services supplied to the Australian economy by the Western Australian arts and cultural industries was \$1.6 billion. The breakup of this amount is shown in the following table.

**TABLE 9.1 - VALUE OF GOODS AND SERVICES SUPPLIED BY INDUSTRY**

Industry	Total estimated value \$ millions
Motion picture industry	64.3
Other performing and non-performing arts	322.7
Library, museums and art galleries	67.3
Publishing	371.2
TV and audio equipment	51.8
Architectural and advertising services	737.7
Total	1,615.0

Source: Department for the Arts

**DIAGRAM 9.1 - ATTENDANCE AT MAJOR VENUES**  
Type of Event



Source: Catalogue No. 4171.0

### Music and Performing Arts at Major Venues

Since 1991, the Australian Bureau of Statistics has conducted a survey of major venues staging music and performing events in Australian capital cities. In 1992, the survey covered 14 major venues in Western Australia, with a total seating capacity of 23,224. The results of this survey indicated that during 1992 there were 2,080 separate performances, attended by more than one million people.

### Work in Selected Culture/Leisure Activities

The Australian Bureau of Statistics undertook a survey of Culture and Leisure in March 1993. This survey found that during the 12 months ended March 1993:

- 156,600 people or 12.0 per cent of the Western Australian population aged 15 years or more were involved in selected cultural or leisure activities; in addition
- a further 122,900 people were involved in some form of hobby activity involving either art/craft activities, writing/publishing, or music.

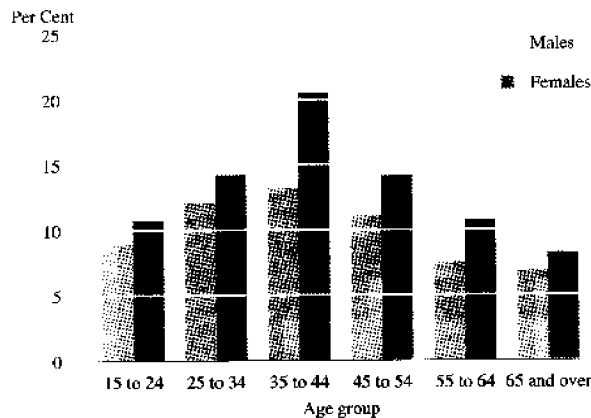
**TABLE 9.2 - PERSONS INVOLVED IN CULTURE AND LEISURE ACTIVITIES BY SEX, MARCH 1993**

Reference: Catalogue No. 6281.0

	<i>Paid involvement only</i>	<i>Unpaid involvement only</i>	<i>Paid and unpaid involvement</i>	<i>Total persons involved</i>
	'000			
Males	9.2	43.8	15.2	68.2
Females	13.0	59.2	16.2	88.4
Total	22.1	103.0	31.4	156.6

The survey also found that females had a higher participation rate than males for all age groups, and for all categories of employment. For example, 13.6 per cent of females over the age of 15 participated in some form of culture and leisure activity, compared with only 10.5 per cent of males.

**DIAGRAM 9.2 - PARTICIPATION RATE OF THOSE INVOLVED  
IN CULTURE AND LEISURE ACTIVITIES BY AGE AND SEX**  
March 1992-93



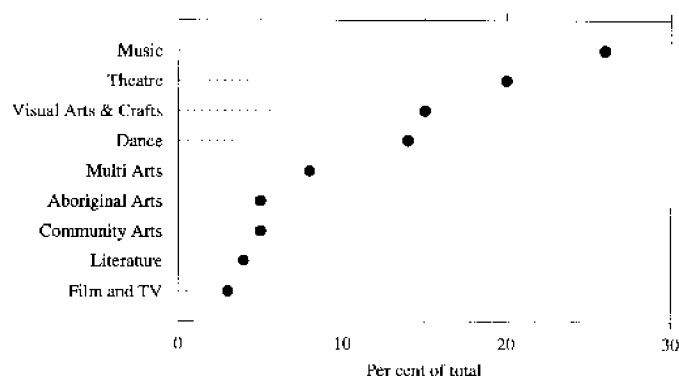
Source: Catalogue No. 6281.0 (Unpublished Data)

### The Western Australian Department for the Arts

The Western Australian Department for the Arts was established in 1986 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 Arts portfolio also includes Screen West (which replaced the Western Australian Film Council in 1994). Responsibility for the State Censorship Office was transferred to the Crown Law Department in 1993.

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, and is responsible for administering Western Australia's Arts Grants Program. Major funded arts organisations include 2 Dance Plus Ltd, Black Swan Theatre Company Ltd, Chrissie Parrott Dance Collective Ltd, Fremantle Arts Centre, West Australian Ballet Company, and the West Australian Symphony Orchestra. During 1992-93, total grants of \$10.4 million were provided.

DIAGRAM 9.3 - ARTS GRANTS BY ARTFORMS  
1992-93



Source: The Department for the Arts

## Screen West

Screen West is responsible for assisting the development of a diverse and commercially successful film industry in Western Australia, as well as creating an active and informed screen culture.

Screen West's main focus is to provide development loans and strategic investments as a means of bringing marketable film and television projects to fruition. Through these funding mechanisms it supports a diverse range of projects, including feature films, television series, documentaries, telemovies, short films and mini-series. In 1993-94, Screen West received a budget allocation of \$800,000 from the Western Australian Government Consolidated Fund, together with a one-off allocation of \$500,000 to establish a Film Investment Fund.

TABLE 9.3 - SCREEN WEST  
PROVISION OF INDUSTRY ASSISTANCE 1993-94

Type of Assistance provided	\$'000
Script/Project Development Loans	401,402
Marketing Loans	94,670
Industry Practitioner's Development	100,382
Film Industry and Screen Culture Promotion	50,420
Short Drama Fund	39,265
<b>Total</b>	<b>686,139</b>

Source: Screen West



The agency has also taken over responsibility for administering the Lotteries Commission Film Incentive Schemes, which collectively provide payments totalling approximately \$2 million each year. These Schemes support the employment of Western Australian film practitioners, the development of low-budget feature films, the provision of awards for excellence, and training in the use and application of multi-media technology.

TABLE 9.4 - LOTTERIES COMMISSION FILM INCENTIVE GRANTS 1993

Scheme	\$'000
Film Employment Scheme	1,619.6
Awards for Films Excellence	225

Source: Screen West

**Library and  
Information Service  
of Western Australia**

The is a statutory authority which through the Library Information Service of Western Australia (LISWA) is the custodian of the State's collection of library, information and archival resources.

Through its Public Libraries and Lending Services directorate, LISWA develops and maintains collections throughout the State in cooperation with local government authorities and the Public Libraries and Lending Service Programme, which provides regular supplies of appropriate bookstock and other resource material to public libraries.

TABLE 9.5 - THE LIBRARY BOARD OF WESTERN AUSTRALIA 1993-94

	Unit	
CRF Allocation	\$	23,385,714
Staff (a)(b)	No.	303
Associated public libraries	"	229
Books		
Total circulation stock (a)	"	2,171,864
Public libraries exchange program -		
Volumes despatched	"	375,018
Volumes received	"	367,211
Inter-library loan requests received	"	77,262
Enquires in Reference Library	"	200,919
Visitors to Reference Library (c)	"	497,814

(a) At 30 June 1994. (b) Number of full-staff plus full-time equivalent units of part-time staff. (c) Affected by re-organisation of services to the ground floor and new method of counting.

Source: LISWA

## Barron Films - Ship to Shore 2

Contributed by Screen West/Barron Films

In late-1994 Barron Films completed the shooting of **Ship to Shore 2**, a 26-part children's TV series which is being produced in association with the Australian Broadcasting Corporation and the Nine Network. Shot at Rockingham, Garden Island and Point Peron, the series depicts the adventures of a gang of enterprising children who have regular encounters with the Forces of Authority, as represented by the Head of Security for a Satellite Communications Relay Base. The location for these escapades is a fictitious island which is home to the children and their families, as well as a colony of rare kangaroos.

**Ship to Shore 2** is a follow-up to the original **Ship to Shore** series, which proved highly popular with family audiences when it was shown on television this year. These two series have consolidated the strong reputation that Barron Films enjoys as a producer of high-quality children's drama. Other successful children's programs produced by Barron include **Clowning Around** (1 and 2), **Haydaze**, **Kicking Around**, and **A Waltz through the Hills**. With a production budget of \$6.7 million **Ship to Shore 2** was the largest television project of any kind to be undertaken in Western Australia, and provided employment for some 200 actors and film crew. The idea for the series originated in Western Australia and involved a number of local

writers, directors, as well as most of the cast and crew.

The concept for the original series was developed with the assistance of Screen West and a substantial incentive payment through the Lotteries Commission Film Employment Scheme. Barron Films is probably the best-known and



The cast of **Ship to Shore 2** at work. Photograph: Courtesy Barron Films Ltd.

most active Western Australian producer of drama material for film and television. Since it was formed twelve years ago the Company has developed and produced no fewer than six feature films (**Blackfellas**, **Father, Shame, Fran**, **Bush Christmas**, and **Windrider**), ten television mini-series or telemovies, and four documentaries.

Barron productions have sold extensively both in Australia and overseas, and have collected a string of major national and international awards for excellence. The Company has worked in association with every television network in Australia, and its productions have attracted highly respected overseas buyers and partners.

### **The Per Cent for Art Scheme**

**Contributed by Terri-Ann White, Department for the  
ARTS**

Art plays a powerful role in enlivening and humanising our urban environment, helping to make distinctive and memorable places. In recognition of this, the Western Australian Government has developed a Per Cent for Art Scheme. This scheme is applied to selected projects from the State Government Capital Works List, with one per cent of the total cost of the project allocated to the creation of artworks. The artworks may be decorative details and special aesthetic finishes, or works of art which are integrated into the fabric of the building or its landscaped surroundings. Sometimes they are both.

The Scheme places artists alongside members of the design team who are responsible for the design and planning of public buildings and spaces. The objective is to develop lively places that are both imaginative and expressive of local identity and environment. It is also a chance for the public to see the work of the State's artists outside the gallery structure.

The Scheme is achieved through a partnership between the Western Australian Department for the Arts and the Building Management Authority, in association with the Ministerial Taskforce on Public Art. The Department for the Arts has particular responsibility for the initial phases of artist selection through its arts register, the Public Art Directory, and also coordinates an artist selection panel process.

One project completed last year was the Parkfield Primary School at North Australind. The artist, Coral Lowry, incorporated the ideas of the school children into her completed design and consulted with them throughout in determining the placement of the figures.

The work plays on the fascination children have with their own shadows. Through a series of metal silhouettes that weave in and out of curved balustrades and against limestone walls, different shadows are made as the sun moves through the sky. This is best viewed from the children's perspective: from the pathways and routes that the children take through their school. The work, then, is made with input from the users, rather than being an idea imposed from outside.

The State Reference Library is situated in the Alexander Library Building, in Perth's Cultural Centre, and provides reference services in a large range of areas, including: the Humanities and Social Sciences, Science, Technology and Commerce. The Reference Library also maintains an extensive map collection, as well as incorporating the J. S. Battye Library of Western Australian History which seeks out, acquires and makes available local materials for research covering printed records, film archives and oral history.

## Western Australian Museum

The Western Australian Museum, which celebrated its one hundredth birthday in 1992, has its headquarters and principal display galleries located in the heart of the Cultural Centre. It has established branches in Fremantle (the Fremantle Museum, Western Australian Maritime Museum, Samson House and the Historic Boats Museum); Albany; Geraldton; and the Goldfields.

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 has special responsibilities for Aboriginal material (including sites), historic shipwrecks and meteorites. The Director has also been delegated powers for wrecks and material under Commonwealth control. For a photographic essay on the Western Australian Museum, refer to the 1992 *Western Australian*

**TABLE 9.6 – REGISTER OF ABORIGINAL SITES**  
Number listed at 30 June 1993

Area	Number
Kimberley	2,796
Pilbara	6,467
Western Desert/Goldfields	2,019
South West (including greater metro area)	2,751
<b>Total</b>	<b>14,033</b>

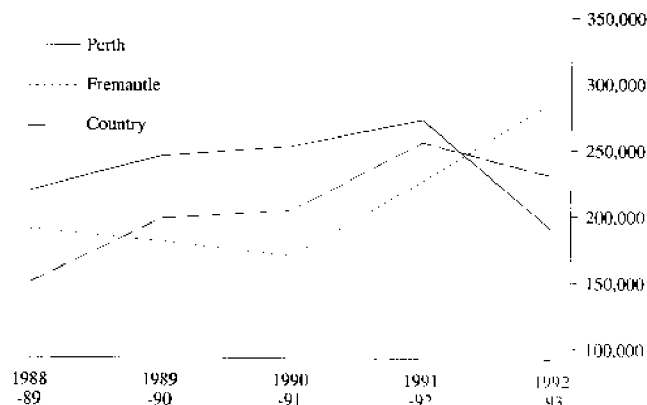
Source: *Western Australian Museum*

## Year Book.

## Museum Events in 1994

The Museum is a vital resources centre, its collections and displays reflecting the research and fieldwork constantly being undertaken by its curatorial staff. With an emphasis on both display and research, a new permanent butterfly exhibit was opened during 1994, and a significant upgrade occurred to the Mammal gallery. Progress continued to be made with the "Diamonds to Dinosaurs" exhibition with the introduction of a number of new specimens, and landscaping of the grounds enabled the creation of a Cretaceous garden.

DIAGRAM 9.4  
VISITORS TO WESTERN AUSTRALIAN MUSEUMS



Source: Western Australian Museum

### The Art Gallery of Western Australia

The mission of the Art Gallery of Western Australia is to increase knowledge and appreciation of the art of Western Australia and the world for the enjoyment and cultural enrichment of the people of Western Australia.

During the 1993-94 financial year, the total attendance at the Art Gallery of Western Australia was 353,194.

Together with exhibitions of art works from the permanent collection, the Gallery presents touring exhibitions initiated in Australia and from overseas.

#### Exhibitions in 1993-94

Major international exhibitions during 1993-94 included *Imperial China: The Living Past, Splendour of the Baroque*, *Mao Goes Pop: China Post-1989* and *J'Aime La France: 150 Years of French Photography*.

The Gallery organised a major exhibition *Tjukurrpa: Desert Dreamings* which was the most comprehensive exhibition of Central Australian art ever assembled in Australia. Other important exhibitions of Australian art on display included *The Heritage of Namatjira*; *Hans Heysen: The Creative Journey*; *Charles Blackman: Schoolgirls and Angels* and *Year 12 Perspectives* featuring art works by Year 12 students who graduated in 1993. A major exhibition from the Gallery's collection was *Pride of Place: New Acquisitions 1990-1994*.

The current collection policy of the Gallery places emphasis on the acquisition of Western Australian art, Australian and international contemporary art, and Aboriginal art. In addition, there is also a commitment to build a small but relevant collection of contemporary Asian art, and to actively seek Western

Australian State heritage works from the colonial and 19th century period across all art forms.

**Bunbury Art Galleries** In 1993-94, the Bunbury Art Galleries program focused on Western Australian contemporary art and craft practice through exhibitions such as *Life Size Sculpture*, the *Bunbury Biennale* and *Signature: Fine Woodwork of Western Australia*. The outreach program included the first printmaker as artist-in-residence, Tim Pearn, a varied education program for adults, activities for children and guided tours.

**Geraldton Regional Art Gallery** During 1993-94, the Geraldton Art Gallery extended the opportunities for the public to actively participate in arts-related projects. The creation of an Education Room for workshops and art classes and a Reference Room for lectures was welcomed by patrons and community groups. Exhibitions included *Mutsuko Bonnardeaux*, *George Deurden Retrospective*, *Max Pam* (photography), *Cake Extravaganza*, *Indonesian Textiles* and *Tjukurrpa: Desert Dreamings*.

**Perth Institute of Contemporary Arts** The Perth Institute of Contemporary Arts Ltd. (PICA) is situated in the old Perth Technical College building in the Perth Cultural Centre. From these premises, PICA seeks to promote the rich diversity of investigative Australian cultural practices.

Total income during the 1993-94 financial year was \$576,692, of which \$319,370 was provided by the Department for the Arts, and \$110,225 by the Australia Council. During the year, PICA successfully mounted a wide range of exhibitions, of which the highlight was *Yarnangu Ngaanya: Our Land - Our Body*, perhaps one of the most extraordinary and ambitious co-operative events between Aboriginal and non-Aboriginal people yet undertaken in Australia.

Sixty Ngaanyatjarra people from Warburton and close relations from neighbouring Western Desert communities camped at PICA, performed 'inma', exhibited their painting and spoke to visitors about their culture. Apart from public galleries there were restricted galleries for paintings which dealt with both men and women's secret realms.

**The 1994 Festival of Perth** The Festival of Perth is Australia's oldest, and largest annual arts festival. The 1994 Festival featured 782 performances and events with over 900 artists from 20 countries and was attended by 610,621 people.

Works were presented by eight Western Australian companies including; Chrissie Parrott Dance Company, Black Swan Theatre Company, Swy Theatre Company and Theatre West, Barking Gecko Theatre Company, West Australian Opera, Nova Ensemble, 20th Century Ensemble and the West Australian Symphony Orchestra.

More than 1,250 Western Australians were employed by the Festival. The total amount of money directly injected into the Western Australian economy was \$3,463,300 while the estimated economic impact on the Western Australian economy has been estimated at more than \$13 million dollars.

## ABS Publications

*Time Use of Culture/Leisure Activities, 1992 (4173.0)*

### Other Publications

The Western Australian Museum, *Annual Report*, 1992-93

Vital Statistics - Western Australian Cultural Statistics, October 1993 (a consultancy undertaken by the ABS for the Department for the Arts)

Department for the Arts

Library Information Services of Western Australia

The Art gallery of Western Australia







# EDUCATION

## education

## Chapter 8

# EDUCATION

---

Contents	Page
Pre-Primary Education	147
Primary and Secondary Education	148
Primary and Secondary School Curriculum	150
The Secondary Education Authority	151
Post Secondary Education	152
The Independent Colleges	153
Tertiary Institutions	153
<b>Staying on at School</b>	<b>154</b>
Commonwealth Government Assistance for Education	158
Financial Assistance for Students	158
State Government Assistance for Education	159
Western Australian Office of Non-Government Schools	159

## Chapter 8

# EDUCATION

*Material for this Chapter was prepared in consultation with the relevant State and Commonwealth Education Authorities.*

In Western Australia, education at pre-primary, primary and secondary levels is provided at government schools administered and staffed by the Department 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 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.

### Pre-Primary Education

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

**TABLE 8.1 – PRE-PRIMARY EDUCATION: JULY**

	1991	1992	1993
NUMBER OF CENTRES			
Government—			
Pre-primary	530	533	558
Community pre-school	121	116	113
Non-government—			
Pre-primary	143	155	174
Independent pre-school	26	23	20
<b>Total</b>	<b>820</b>	<b>827</b>	<b>865</b>
NUMBER OF TEACHING STAFF(a)			
Government	575	549	743
NUMBER OF CHILDREN			
Government—			
Pre-primary	26,254	25,966	24,087
Community pre-school	6,167	5,921	5,712
Non-government—			
Pre-primary	4,561	5,056	5,585
Independent pre-school	1,204	1,169	1,018
<b>Total</b>	<b>38,186</b>	<b>38,112</b>	<b>36,402</b>

(a) Numbers shown are for full-time equivalents rounded to the nearest whole number. Source: Education Department of Western Australia.

they turn five years of age. They may start during their fourth year where vacancies exist and attend two half day sessions per week.

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 Department of Education.

#### Primary and Secondary Education

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 or the new Western Australia Certificate of Education.

Western Australia currently has two Senior Colleges and two Senior Campuses run by the Department which give 'second chance' secondary education to those people who left the school system before achieving their goals.

**TABLE 8.2 – GOVERNMENT AND NON-GOVERNMENT  
SCHOOLS, FULL-TIME STUDENTS CLASSIFIED  
ACCORDING TO AGE (a)  
JULY 1993**

<i>Age last birthday (years)</i>	<i>Government schools (b)</i>	<i>Non- government schools (c)</i>	<i>Total</i>
Under 6	9,178	2,474	11,652
6	20,447	5,505	25,952
7	20,936	5,562	26,498
8	20,903	5,461	26,364
9	20,516	5,622	26,138
10	20,266	5,696	25,962
11	20,036	5,784	25,820
12	18,496	6,573	25,069
13	17,080	7,367	24,447
14	17,089	7,281	24,370
15	15,692	6,891	22,583
16	12,451	6,048	18,499
17	6,660	3,352	10,012
18 and over	2,701	672	3,373
<b>Total</b>	<b>222,451</b>	<b>74,288</b>	<b>296,739</b>

(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.

TABLE 8.3 - GOVERNMENT SCHOOLS: JULY

	1991	1992	1993
NUMBER OF SCHOOLS			
Primary schools	547	548	553
Education support schools/centres	60	58	59
Secondary schools—			
District high schools	58	59	60
High schools	7	6	5
Senior high schools	86	87	87
Senior colleges	2	2	2
Distance Education Centre	1	1	1
<b>Total</b>	<b>761</b>	<b>761</b>	<b>767</b>
NUMBER OF TEACHING STAFF (a)			
Engaged in teaching duties—			
Primary	7,501	7,560	7,651
Secondary	5,991	6,167	6,286
Education support (b)	392	398	421
<b>Total</b>	<b>13,884</b>	<b>14,125</b>	<b>14,358</b>
NUMBER OF FULL-TIME STUDENTS (c)			
Level of education—			
Primary	141,699	142,897	143,871
Secondary—			
Years 8, 9 and 10	52,107	51,512	51,622
Years 11 and 12	23,490	25,053	25,574
Senior colleges	1,572	1,572	1,384
<b>Total</b>	<b>218,868</b>	<b>221,034</b>	<b>222,451</b>
Males	112,884	113,880	114,590
Females	105,984	107,154	107,861

(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 disabilities) who attend primary or secondary schools. Source: Education Department of Western Australia.

The Department 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 and gifted and talented students. Special programs are also available which address issues of gender equity in education.

In Western Australia distance education operates as a constituent of the general school system. The Distance Education Centre (DEC) of the Education Department provides schooling to a wide variety of students who are unable to attend a conventional school for reasons of isolation. These include students living in rural and remote areas, and isolated Aboriginal communities. It also caters for students who are unable to attend conventional schools for various medical and social reasons, as well as for

prisoners in jails. The DEC enrolls students from schools that are unable to offer the maximum choice of subjects because of the limitations of small staff size and timetables. In some cases the DEC enrolls students travelling interstate and overseas with their parents. Adults who are isolated and seeking a second chance are able to access the DEC.

A feature of the service offered by the DEC is the field support given to students by visiting teaching staff. Another feature is the increasing use of interactive television and telematics to support student's learning.

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.

#### Primary and Secondary School Curriculum

The curricula of both the primary and secondary schools are organised into the learning areas of: English; Mathematics; Science; Physical Education and Health; studies of Society and the Environment; Technology and Enterprise; and the Arts and Languages (other than English).

TABLE 8.4 - NON-GOVERNMENT SCHOOLS: JULY

	1991	1992	1993
NUMBER OF SCHOOLS			
Primary	147	146	147
Secondary	38	39	39
Primary/secondary combined	62	63	61
Special	2	2	2
<b>Total</b>	<b>249</b>	<b>250</b>	<b>249</b>
NUMBER OF TEACHING STAFF (a)			
Primary	1,968	2,058	2,153
Secondary	2,549	2,595	2,691
Special (b)	—	—	—
<b>Total</b>	<b>4,517</b>	<b>4,653</b>	<b>4,844</b>
NUMBER OF FULL-TIME STUDENTS			
Level of education—			
Primary (c)	37,531	38,362	39,653
Secondary—			
Years 8, 9 and 10 (c)	21,494	21,897	22,021
Years 11 and 12	11,689	12,048	12,448
Ungraded	271	245	166
<b>Total</b>	<b>70,985</b>	<b>72,552</b>	<b>74,288</b>
Males	35,454	36,361	37,314
Females	35,531	36,191	36,974

(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.

**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 above broad categories.

**Secondary School  
Curricula**

Lower Secondary school students (Years 8 to 10) progress through 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.

Students in Years 11 and 12 study a combination of year-long courses, semester long courses or vocational programmes, which assist transition to further education, training or employment.

**The Secondary  
Education Authority**

The Secondary Education Authority (SEA) is a statutory body which accredits upper secondary courses, moderates student assessment, issues certificates and administers the Tertiary Entrance Examination. The SEA is responsible to the Minister for Education.

**Student Achievement**

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 courses selected from 158 accredited and vocational courses and a range of registered and vocational 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 some 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 an attachment to the Certificate of Secondary Education. 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 Scaling Test (AST).

Entrance to Universities is based on the 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 AST 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.

Entrance to TAFE is based on a profile of information covering courses completed, grades, and work experience.

### Post Secondary Education

#### *Higher Education Council*

The Western Australian Higher Education Council provides a forum for the discussion of matters relating to higher education in Western Australia and for advising the State Minister for Education. The Education Policy and Co-ordination Bureau (formerly the Western Australian Office of Higher Education) supports the operation of the Council through the provision of administrative, secretarial and research services. As a government department, the Education Policy and Co-ordination Bureau contributes to the development of the educational system in Western Australia by providing objective and independent advice to the Minister on strategic issues and policy settings and by co-ordinating portfolio-wide initiatives directed toward system improvements.

#### *Technical and Further Education (TAFE)*

Vocational education and training is co-ordinated by the Western Australian Department of Training (WADT). In 1993 there were 125,528 students enrolled in TAFE institutions in Western Australia, an increase of 0.8 per cent on 1992.

The WADT was formed on 1 December 1993 through the amalgamation of the Department of Employment, Vocational Education and Training and the State Employment and Skills Development Authority.

The Department is committed to satisfying the changing skill requirements of the State's workforce and enhancing the State's economic performance by improving the delivery of service to industry. The WADT aims to meet the growth in vocational education and training sector demand, and to ensure equitable access to vocational education and training.

The new department is not involved with the day to day administration of the State's network of colleges, the management of college resources is the responsibility of individual colleges.

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. These colleges also administer TAFE centres within their 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 Colleges**

In addition to the TAFE facilities already detailed, independent colleges have been established and may provide advanced education and technical and further education in specific circumstances. They currently include: Eastern Goldfield Region's Kalgoorlie College; and the Pilbara Region's Karratha College, Hedland College and Pundulmurra College. Pundulmurra College is the most recent of these, and primarily services the Pilbara's Aboriginal students.

The colleges and the TAFE regional colleges provide higher education courses under contract to Perth-based institutions. In addition to academic subjects, the colleges also provide a broad range of courses aimed at personal and life-style development.

**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.

*Edith Cowan University* The University is 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.

### **Staying on at School**

**Contributed by the Department of Employment,  
Education and Training**

The National Aboriginal and Torres Strait Islander Education Policy (AEP) was developed in response to the 1988 Report of the Aboriginal Education Policy Taskforce (Hughes Report) which identified the need for a coordinated and comprehensive national Aboriginal education policy.

The broad objectives of AEP are:

- to ensure Aboriginal involvement in decision making about education;
- to provide equal access to education services;
- to raise the rates of educational participation to those of all Australians; and
- to achieve equitable and appropriate education outcomes.

In addition to providing a national and coordinating role the Commonwealth also delivers programs of educational assistance to Aboriginal and Torres Strait Islander people. The 'Staying On At School' campaign was funded under one of these programs, the Vocational Educational Guidance for Aboriginals Scheme (VEGAS).

As 1993 was the 'International year of the World's Indigenous People', it was seen as appropriate to deliver the 'Staying On At School' campaign to Aboriginal and Torres Strait Islander students attending a secondary education facility in rural Western Australia. The aim of the campaign is to;

- encourage young Aboriginal and Torres Strait Islander students to complete their secondary education;
- to raise their career aspirations; and
- to increase the retention rate amongst Aboriginal and Torres Strait Islander students attending secondary institutions.

West Coast Eagles Footballer, Chris Lewis, and two other young Aboriginal role models were chosen to deliver the 1993 'Staying On At School' campaign message. The three role models, representing the secondary, tertiary and trade arenas, visited selected secondary institutions in rural Western Australia and spoke to Aboriginal and Torres Strait Islander Students about furthering their education

studies and how they overcame obstacles to achieve their goals.



West Coast Eagles footballer Chris Lewis with (from left): DEET's *Staying On* coordinator Cass Douglas, and campaign promotion participants Cecilia Chesson and Selina Swan. Photograph: Courtesy of DEET

A small campaign was also delivered, through the Department's Area North Office, located at Broome, to several remote schools. Cathy Freeman, a very prominent international and national athlete, and two local Aboriginal role models delivered the '*Staying On At School*' campaign message. Both campaigns proved to be highly successful.



Olympic athlete Cathy Freeman with audience members at a *Staying On* campaign gathering in the Kimberley last year. Photograph: Courtesy of DEET

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.

*University of  
Western Australia*

The University of Western Australia 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.

*Murdoch University*

Established in 1973, Murdoch University is situated 13 kilometres from Perth, and comprises over 220 hectares. The university has a strong research record, with key centres in Asian studies, metallurgy and agricultural biotechnology.

Murdoch is one of the fastest growing universities in the State and has Federal and State Government support to launch two regional campuses at Rockingham and Mandurah to accommodate demand in these rapidly growing areas. The gardens are a feature of the University and 60,000 native trees, plants and wildflowers have been planted. There is also a Chinese garden, the materials for which were donated by Chinese communities in Asia. Crafts people from Taiwan visited Perth to assemble the garden.

On campus, accommodation is provided for 430 students. The Student Village provides self-service accommodation with each student having a single study/bedroom. Groups of students share common kitchen, dining and lounge areas.

*Curtin University of  
Technology*

The main campus of the University is in the Perth suburb of Bentley and features the University's Centre for Aboriginal Studies. 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 Centre for Aboriginal Studies is committed to higher education that furthers the advancement of Aboriginal and Torres Strait Islander values, relevant control and the achievement of equity through culturally appropriate programs. The Centre offers a number of courses in areas as diverse as management and health studies and is developing postgraduate programs and a useful research capacity. Although providing education is the first priority of the Centre, it also has a deep commitment to obtaining equality for Aboriginal people.

#### Western Australian School of Mines

The Western Australian School of Mines is a branch of Curtin University. It comprises the Departments of Mineral Exploration and Mining Geology; Minerals Engineering and Extractive Metallurgy; Mining Engineering and Mine Surveying, and it also offers courses in science and mineral economics. Students may study for awards from the Associate Diploma, the Bachelor of Science or Engineering, course work or research Masters degrees, to the Doctorate by research.

**TABLE 8.5 - THE UNIVERSITIES: NUMBER OF STUDENTS**

<i>Field of study</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>
Agriculture	772	807	801
Architecture	792	836	869
Arts	12,390	12,709	12,850
Business	13,116	12,924	12,930
Education	8,069	7,772	7,500
Engineering	3,183	3,364	3,632
Health	6,612	6,872	7,039
Law	1,195	1,526	1,696
Science	7,166	7,563	7,769
Veterinary Science	330	349	362
Non-Award	14	11	12
<b>Total</b>	<b>53,636</b>	<b>54,733</b>	<b>55,460</b>

*Source:* Department of Employment, Education and Training

The School of Mines is in the process of joining with Kalgoorlie College to become a University College of Curtin University. The University College will offer a wide range of technical and further education programs, and introduce further degree programs in response to community needs.

#### Muresk Institute of Agriculture

Muresk Institute of Agriculture offers a range of courses which allows its graduates to fill almost any role in the rural industries.

The campus of 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 (Incorporated) 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.

*The University of  
Notre Dame Australia*

The University of Notre Dame Australia is the only private university in Western Australia and was the first Catholic university to be founded in Australia. It has its campus in Fremantle and offers a wide range of post-graduate courses in Education, and undergraduate degrees in Arts, Theology, and Business, and will eventually open faculties in Health and Law. 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.

*The Tertiary  
Institutions Service  
Centre (Incorporated)*

The Tertiary Institutions Service Centre (Incorporated) processes applications for admission to undergraduate courses at the four government universities in Western Australia and carries out such other functions as agreed by those universities. Applicants seeking admission apply through a joint system operated by the Centre. Applicants list up to four preferences from all undergraduate courses available and offers are made by the universities on the basis of a ranked order for each course.

**Commonwealth  
Government  
Assistance for  
Education**

The Commonwealth Government provides supplementary finance to the State and is responsible for the total funding of the four government universities. The Commonwealth also has special responsibility for Aboriginal people and for migrants, as well as the power to provide assistance for students.

**Financial Assistance  
for Students**

*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.

**State Government Assistance for Education**

The State Government provides a 'boarding away from home' allowance, to supplement the isolated children's allowance paid by the Commonwealth Government. 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 Secondary Assistance Scheme is 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.

**Western Australian Office of Non-Government Schools**

The State Government established the Western Australian Office of Non-Government Education on 1 July 1994 to co-ordinate and provide advice on policy and resource issues in the non-government education sector, to administer State Government financial assistance to non-government schools, and to register non-government schools.

Financial aid to non-government schools is provided by means of a direct per capita grant for each student enrolled. The grant incorporates a needs component and separate rates apply to pre-primary, primary and secondary students. The base per-capita grant is supplemented for special education 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 schools' capital development projects. This includes school site acquisition and, at locations north of the Twenty-Sixth Parallel the provision of teacher accommodation.

The State Government also provides an annual subsidy to the Western Australian Catholic Education Office to supply school psychology and guidance services to a majority of non-government schools, both Catholic and non-Catholic, located throughout the State.

New non-government schools receive small grants to purchase primary school reading materials and other basic equipment and materials.

Additionally, other allowances and benefits which are paid to support students' attendance at non-government schools include boarding away from home, and text book and clothing allowances. Non-government school teachers employed at schools in the north of the State are eligible for a travel concession.

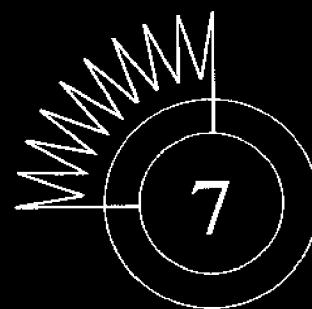


LAW,

ORDER

and

emergency services



## Chapter 7

# LAW, ORDER AND EMERGENCY SERVICES

---

Contents	Page
<b>Law and Order</b>	
The Law Courts	135
The Jury System	137
Law Reform Commission of Western Australia	137
Legal Aid	138
State Ombudsman	138
Corrective Services	139
Police	139
<b>Emergency Services</b>	
Fire	141
St. John Ambulance Australia (Western Australia)	142
Royal Flying Doctor Service	143
State Emergency Service	143
References	144

## Chapter 7

# LAW, ORDER AND EMERGENCY SERVICES

---

## Law and Order

In Western Australia the State Government has responsibility for enacting legislation, providing a police force, judiciary and corrective service.

### The Law Courts

#### *Courts*

The court system continues to experience rising demands and pressures mainly resulting from the increase in complexity and duration of civil and criminal trials.

Courts administered by the Courts Development and Management Division of the Ministry of Justice include the Supreme, District, Magistrates' (Courts of Petty Sessions, Local Courts, Coroners), Children's and Family as well as the Western Australian Sheriff's Office.

#### *Supreme Court of Western Australia*

The Supreme Court of Western Australia is constituted under the *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 Court is also vested with a wide range of appellate jurisdictions.

In August 1993 the Court conducted a Special Civil Sittings including dedicating its resources to reducing civil case delay. By December 1993 all matters entered for trial up to July 1993 had been disposed of.

As at 30 June 1994 there were 36 civil matters awaiting trial with listing intervals up to 12 months. Criminal trials are being contained with delays of five months between first appearance at the Court and trial date. Full Court Appeals stand at 90 with a listing delay of 12 months. The Court of Criminal Appeal has a listing delay of three months.

The Supreme Court has embarked on a civil case flow management system supported by a computerised database of all files past 1990, designed to enable the Court to take a more pro-active role in the conduct of matters and reduce delay.

An "Electronic Court" has been established to enable lengthy complicated trials and appeals to be conducted with the minimum use of paper, based on electronic format transcript and computer imaging of documents and exhibits.

### *District Court of Western Australia*

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

The number of criminal trials heard in the District Court increased by 45 per cent in 1993-94, with the number heard in the civil jurisdiction experiencing a 22 per cent increase.

Within both jurisdictions large backlogs still remain, the number of matters pending being 285 civil and 583 criminal trials. As a consequence of some jurisdictional changes for the Court, the average length and complexity of trials is also increasing, as well as is the number of matters. A comprehensive package is being planned for 1994-95 to reduce the delays experienced in the criminal jurisdiction.

### *Magistrates, Courts*

#### *Courts of Petty Sessions*

Courts of Petty Sessions are established under the *Justices Act 1902*. These Courts are held throughout the State and deal with minor criminal cases, as well as committal proceedings in cases of more serious offences. The number of actions dealt with has decreased over recent years due to the expansion of the Infringement Notice Registration and Enforcement Procedure system (INREP). The number of matters registered with INREP has continued to increase to the extent that in 1993-94 the number of matters registered totalled 59,495.

#### *Local Courts*

Local Courts are held throughout the State to determine minor civil issues. Jurisdiction is limited in most cases to claims not exceeding \$25,000. The Court also handles disputes between landlord and tenants under the provisions of the *Residential Tenancies Act 1987*. The number of applications lodged in the Local Court has continued to increase, with 10,227 applications being lodged in 1993-94.

#### *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.

### *Children's Courts*

Children's Courts in Western Australia are constituted under the *Children's Court of Western Australia Act 1988* as a distinct jurisdiction, headed by the President who is a District Court Judge. The Court has exclusive jurisdiction to deal with all offences alleged to have been committed by children, as well as to hear applications to have children declared in need of care and protection.

The number of charges heard by the Court continues to fall. For 1993-94 the number of criminal charges lodged in the State fell 14.2 per cent from the previous year. Since 1989-90 this fall is 46.4 per cent overall.

In 1994-95 proposed new legislation will affect major changes to the way the Court deals with young offenders, including the increased involvement of responsible adults, the introduction of juvenile supervised release (parole), a new set of sentencing options and the replacement of Children's Panels with Juvenile Justice Teams.

### *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. For a more detailed explanation of the Family Law Court, see page 117 of the 1993 *Western Australian Year Book*. See also Chapter 5 for further information on divorces.

### **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**

The Law Reform Commission of Western Australia was established by the *Law Reform Commission Act 1972*. The 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 *Police Act* offences, professional privilege for confidential communications and the enforcement of orders under the *Justices Act 1902*.

As at October 1994, the commission had issued a total of 83 reports, 77 of which recommended legislative changes. To date, 49 of these have been implemented by legislation passed by the Western Australian Parliament.

### 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 currently employs a staff of 164 of which 65 are legally qualified.

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 1993-94, 19,930 people received legal advice and 13,441 requests for financial assistance towards legal costs were received. Of these, 7,745 were granted and comprised: Family Law 1,964; Criminal Law 4,872; Civil Law 909.

#### *Aboriginal Legal Service*

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 100 people working out of 16 offices throughout the State. The Aboriginal Legal Service is funded by a grant from the Aboriginal and Torres Strait Islander Commission. The Legal service deals with around 40,000 matters each year. The service includes family law; criminal law; a Civil and Public Interest Unit and a Land and Heritage Unit.

#### State Ombudsman

The Parliamentary Commissioner for Administrative Investigations (or State Ombudsman, as he is better known) receives and investigates complaints about things that go wrong in the administration of State Government departments, local government authorities, and most statutory authorities (e.g. Transperth, Westrail), as well as about both the conduct and administrative actions of members of the Police Force.

The State Ombudsman cannot investigate complaints about non-government matters. It is outside the Ombudsman'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 are outside the Ombudsman's jurisdiction.

In the financial year 1993-94, the Ombudsman received 2,794 allegations, of which 2,784 were finalised. This was the largest number of allegations both received and finalised in one year.

### **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. The Department's mission statement is, "positively contributing to the criminal justice system and the protection of the community through the management of offenders".

In fulfilling its mission the Department's key strategic initiatives are to:

- consolidate existing offender management systems,
- match the cost efficiency of comparable prisons under private sector management, and
- provide effective and culturally appropriate alternatives to imprisonment so as to assist in reducing the rate of imprisonment towards the national average.

### *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.

The daily average muster of prisoners during 1992-93 was 1,873. This represents an increase over last year's figure of 1,861. The muster peaked at 2,036 during June 1993.

There were 62 escapes during the financial year compared with 83 during 1991-92, a decrease of 25 per cent. One of these was a remand prisoner (maximum security) and four were rated medium security.

### **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

**TABLE 7.1 - CRIMES VICTIMS BY OFFENCE CATEGORY WESTERN AUSTRALIA,  
AUSTRALIA: 1993**  
Reference: Catalogue No. 4510.0

Offence	Western Australia		Australia	
	Number	Rate (a)	Number	Rate (a)
Homicide—	77	4.59	802	4.54
Murder	29	1.73	290	1.64
Attempted murder	14	0.83	359	2.03
Manslaughter	10	0.60	39	0.22
Driving causing death	24	1.43	114	0.65
Sexual Assault	1,263	75.29	12,390	70.15
Kidnapping/abduction	33	1.97	643	3.64
Robbery—	973	58.00	12,765	72.28
Armed robbery	475	28.31	5,308	30.05
Unarmed robbery	498	29.69	7,457	42.22
Blackmail/extortion	5	0.30	140	0.79
Unlawful entry with intent	52,766	3,145.33	381,617	2,160.73
Motor vehicle theft	16,208	966.14	112,508	637.02

(a) Rate per 100,000 of population.

law, detect and apprehend offenders and render help to those in need.

To carry out this mission, Western Australia is serviced by 40 police stations within eight metropolitan regions and by 120 police stations in eight country regions. At the 30 June 1994 there were 4,217 sworn police officers and they were supported by 774 public service staff.

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.

In their "Crime Statistics Report 1992-93 and 1993-94" the Police reported total offences reported for 1993-94 were down 11,013 or 5.0 per cent compared to 1992-93.

The report stated that during 1993-94 there were 55 homicide offences, a decrease of 7 or 11.3 per cent compared to last year. A total of 54 offences were cleared.

Reported burglary (break and enter) offences decreased marginally (0.9 per cent) in 1993-94 with 11.9 per cent of offences being cleared. Indications are that the community policing concepts, such as Neighbourhood Watch, and greater public awareness of security needs are playing a major part in the decrease.



## Law, Order and Emergency Services

The report said the number of motor vehicles stolen decreased 7.9 per cent to 18,510 (includes 2,248 attempted thefts) in 1993-94.

TABLE 7.2 - OFFENCES REPORTED: 1992-93, 1993-94

Offence	Number of offences reported		Offences cleared 1993-94	
	1992-93	1993-94	Number	Rate (per cent)
Homicide (a)	62	55	54	98.2
Indecent assault	2,595	1,794	1,712	95.4
Deprivation of liberty	212	235	192	81.7
Aggravated sexual penetration	734	607	600	98.8
Sexual penetration	230	324	286	88.3
Burglary (break and enter)	54,331	53,866	6,393	11.9
Robbery (b)	1,033	1,095	442	40.4
Serious assault	2,891	3,342	2,752	82.4
Assault public officer	735	756	748	98.9
Common assault	4,833	5,637	4,552	80.8
Stealing	70,858	67,487	14,135	20.9
Motor vehicle theft	20,098	18,510	3,224	17.4
Fraud	13,509	9,421	5,413	57.5
Damage	30,810	31,619	5,392	17.1
Arson	529	564	171	30.3
Drugs (c)	12,465	9,831	9,831	100.0
Other offences	4,995	4,764	1,741	36.5
<b>Total</b>	<b>220,920</b>	<b>209,907</b>	<b>57,638</b>	<b>27.5</b>

(a) Includes murder, attempted murder and manslaughter. (b) Includes stealing with violence and armed hold-ups. (c) Currently drug offences are only compiled upon the apprehension and charging of an offender.  
Source: Western Australian Police Department

Some 3,743 offenders were charged in conjunction with 3,224 stolen motor vehicles, of the apprehended offenders 2,180 were juveniles.

## Emergency Services

### 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 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.

Within the Metropolitan Fire District there are 17 permanently staffed fire stations (one of these supported by volunteer fire-fighters) and one wholly volunteer station. Permanent fire-fighters are also stationed at Albany, Armadale, Bunbury, Geraldton, Kalgoorlie, Northam and Rockingham. 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 1994, the board was authorised to employ staff in 991 positions. Of these positions 827 were operational posts and the remaining 164 related to either clerical, technical or general support functions. There were also 2,140 volunteer fire-fighters registered.

During 1993-94 a total of 16,016 incidents were responded to throughout the State. Of these 31.7 per cent were false alarms, 8.8 per cent were special service calls (rescues, hazardous goods accidents, humanitarian services etc) and 59.5 per cent were either grass/scrub/bush, transport or property fires.

In terms of fire safety in 1993-94, the board conducted 1,977 building plan inspections, 7,366 building inspections, 1,503 connections of direct brigade alarms to premises, 234 fire investigations and 27 fire investigation lectures.

Education into fire safety involved conducted tours through the Fire Safety Education Centre, involving 7,438 children and 7,792 adults.

The Brigade currently has 266 fire fighting appliances, 128 non-fire fighting appliances and 69 rescue trailers.

### *Bush Fires Board*

Constituted under the *Bush Fires Act 1954-92*, the board's charter is to administer the provisions of the Bush Fire Legislation and to maintain a high standard of rural fire safety through the provision of fire protection services policy and direction supportive to local government and their bush fire brigades.

The mission of the Bush Fires Board is "to protect life, property and the environment by providing a service for the prevention, control and suppression of fire, and to support other emergency services across Western Australia".

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 organised statewide into 813 Bush Fire Brigades with a membership in the order of 30,000 persons.

### **St. John Ambulance Australia (Western Australia)**

St. John Ambulance provides the State's ambulance service throughout Western Australia. It manages the Ambulance Benefit Fund, teaches first aid and supplies volunteer first aiders for attendance at various public events. 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.

### **Royal Flying Doctor Service**

The Royal Flying Doctor Service of Australia (RFDS) is a non-profit organisation financed by grants 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, Port Hedland, Carnarvon, Meekatharra, Jandakot and Kalgoorlie, operating with a total of 17 aircraft. For the year ended 30 June 1994, the RFDS in Western Australia made 9,889 landings, flew 3,592,838 kilometres, was in contact with 53,576 patients, 5,416 of whom required transportation. In Western Australia, the RFDS has 137 staff, 28 of whom are pilots, 11 doctors (plus subcontracted doctors in Derby), 24 nurses and 10 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 Service**

The Western Australian State Emergency Service (WASES) mission is "to assist the community to cope with natural or man made emergencies." The organisation is managed as a civilian branch of the Western Australian Police Department and is headed by a public servant as Director.

The WASES is the "lead combat authority" for flood, cyclone, storm, earthquake, road accident rescue (in specified areas) and cliff and cave rescue. In addition to these roles, the WASES acts in a support role to other emergency services in dealing with emergencies when required.

February 1993 saw the WASES involved in one of the most protracted flood operations in the Kimberley Region. Extensive flooding between February and March required the "State Re-supply of Isolated Communities Plan" to be activated, which was co-ordinated by the WASES. Similarly, the State Resources Emergency Plan was activated to support this operation which

ran for several weeks. This major operation reinforced a prior decision to locate a WASES officer permanently in the Kimberley.

The WASES has close operational and planning links with Police Emergency Co-ordinators in the delivery of broad base emergency management in Western Australia. In recent times, WASES volunteers have assisted the Western Australian Police Force in non-crime oriented tasks such as land search.

### References

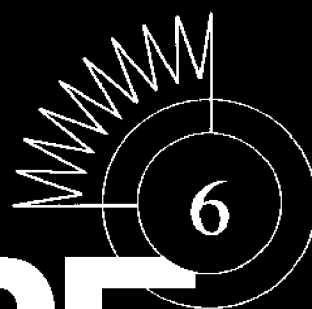
- |                           |                                                                                                                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>ABS Publications</i>   | <i>Year Book Australia</i> (1301.0)<br><i>Summary of Criminal Court Proceedings, Western Australia</i> (4504.5)<br><i>National Crime Statistics, January to December 1993</i> (4510.0) |
| <i>Other Publications</i> | <i>Annual Report 1992-93</i> . Western Australian Department of Corrective Services.                                                                                                   |

**SOCIAL**

**WELFARE**

and

**health**



## Chapter 6

# SOCIAL WELFARE AND HEALTH

---

Contents	Page
<b>Social Welfare</b>	
Income Support through the Department of Social Security	109
Income Support through the Department of Veterans' Affairs	112
Department of Health, Housing, Local Government and Community Services	114
Department for Community Development	115
Disability Services Commission	117
The Western Australian Council of Social Service	117
ABS Surveys	117
<b>Health</b>	
Commonwealth Government Health Benefits and Services	119
The Health Department of Western Australia	122
<b>Breast Cancer Screening</b>	<b>123</b>
Other Health Services	126
<b>Sexually Transmissible Diseases</b>	<b>127</b>
National Health Surveys	129
Health Insurance Surveys	131
References	132

## 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 through the Department of Social Security

The Social Security Portfolio has responsibility for six programs. Five of these are income security programs to meet the differing needs of the Department's clients and are based on supporting the 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.

### Age Pensions

To qualify for the age pension, a man must be at least 65 years and a woman at least 60 years of age. The claimant must have lived in Australia for ten years. Reciprocal social security

agreements may allow people to add together contributions in the agreement country and residence in Australia to meet residency requirements for the Australian age pension.

At 30 June 1993 there were 121,387 persons claiming the age pension in Western Australia, plus 3,375 persons on wife/carer pensions. The total amount paid for such pensions in Western Australia was \$838,977,000. At the same period for Australia 1,555,709 persons received an age or wife/carer pension with a total amount paid of \$10,588,244,000. Pension rates per fortnight at June 1993 were single rate - \$312.10, married rate (each) - \$260.30, wife pension - \$260.30 and carer pension - \$312.10.

**TABLE 6.1 - PENSIONS, BENEFITS AND ALLOWANCES  
30 JUNE 1993**

<i>Pension or benefit</i>	<i>Number</i>	<i>Amount paid \$'000</i>
Aged pension (a)	124,762	838,977
Disability Support/Invalid pension (a)	47,790	359,926
Child disability allowance (b)	7,636	15,451
Rehabilitation allowance (b)	41	1,282
Mobility allowance	1,037	1,119
Job search/Newstart allowance (c)	79,903	672,426
Sickness benefits (c)	4,090	32,419
Family allowance (d)	191,681	207,781
Family allowance supplement	78,882	n.a.
Sole parent pension	29,874	289,458
Double orphans pension	180	156
Special benefit (b)	2,745	21,666

(a) Includes wife's/carer's pension. (b) Amount paid includes pensions for wives, guardians etc. (c) Annual average number current. (d) Number of families.  
Source: Department of Social Security, Annual Report, 1992-93

**TABLE 6.2 - NUMBER OF AUSTRALIAN PENSIONS PAID  
OVERSEAS: 30 JUNE 1993**

<i>Pension or allowance type</i>	<i>Number</i>
Age pension (inc. wife/carer)	23,948
Disability Support pension (inc. wife/carer)	8,455
Wife pension	3,478
Class B Widow pension	1,683
Sole Parent pension	154
<b>Total</b>	<b>37,718</b>
<b>Total Benefits Paid</b>	<b>\$220.9m</b>

Source: Department of Social Security, Annual Report, 1992-93

#### *Disability Support*

The Income security for People with Disabilities and the Sick program is broken up into seven sub-programs. The disability support pension is aimed at men under 65 and women under 60 years of age who are unable to work full time at full award wages



owing to a substantial physical, intellectual or psychiatric impairment or who are permanently blind. A wife's pension may be paid to the wife of a disability support pensioner if she does not qualify for another pension in her own right. Carer pensions are payable to those who provide frequent personal care to a severely handicapped person.

Sickness allowance is paid to men aged 16 to 64 years and women aged 16 to 59 years who have suffered a loss of income or entitlement to Job Start Allowance or Newstart Allowance because they are temporarily incapacitated for work owing to illness or injury. Mobility allowance may be paid to people with disabilities who are aged 16 years and over and who are in paid or voluntary employment or vocational training or who are looking for work and who, because of their disability, are unable to use public transport without substantial assistance.

Child disability allowance provides assistance to a parent or guardian caring at home for children with disabilities. Postal concessions for the blind are paid to assist them by supplementing postal charges for braille and other postal charges.

### *Unemployed*

Since July 1991 a new active strategy for income support has operated for people who are unemployed. The new system, known as Newstart, has as its objective to actively assist the unemployed seeking employment back into paid work. The Income Security for the Unemployed program pays Job Start Allowance and Newstart Allowance to people who are actively seeking employment, or are improving their opportunities by, for example, undertaking education training courses or rehabilitation.

At June 1993 in Western Australia an annual average of 79,903 persons were in receipt of Job Search or Newstart allowance for an annual payment of \$672,426,000.

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 focuses 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 aligned 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 have 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 veterans and their dependants with a range of benefits, including service pensions and disability pensions to compensate veterans and their dependants for the effects of war or defence service.

*Disability pension* Where a veteran's incapacity or death is determined to be war or defence caused, compensation is provided in the form of pensions and associated allowances.

*Service pension* The main form of income support provided to veterans is the service pension. Introduced in 1935, it is an income and assets tested pension similar to the age pension paid by the Department of Social Security. However, the service pension is paid earlier than the age pension, at 55 for female veterans and at 60 for male veterans, in recognition of the intangible effects of qualifying service.

*Dependents pensions* War widow's/widower'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.

**TABLE 6.3 – DISABILITY PENSIONS: 30 JUNE 1993**  
(number)

<i>Type of service</i>	<i>Incapacitated veterans</i>	<i>Dependents(a)</i>	<i>Total</i>
World War 1	18	504	522
World War 2	10,032	12,449	22,481
Korea, Malaya and Far East Service Reserve	487	333	820
Special Overseas Service	1,128	879	2,007
Peacetime Forces & Gulf War	2,228	927	3,155
World War 2 Merchant Navy	15	5	20
<b>Total</b>	<b>13,908</b>	<b>15,097</b>	<b>29,005</b>

(a) Number of pensions payable to dependents of incapacitated or deceased veterans.

Source: Department of Veteran's Affairs Annual Report

**TABLE 6.4 – SERVICE PENSIONS: 30 JUNE 1993**  
(number)

<i>Type of service</i>	<i>Payable to veterans</i>	<i>Payable to wives/widows</i>	<i>Total</i>
World War 1	38	51	89
World War 2	14,110	9,994	24,104
Korea/Malaya	762	511	1,273
Special Overseas Service	570	387	957
British Commonwealth Forces	3,642	2,849	6,491
Allied Forces	412	331	743
Australian Mariners	158	119	277
British Commonwealth and Allied Mariners	68	45	113
Gulf War	1	0	0
<b>Total</b>	<b>19,791</b>	<b>14,287</b>	<b>34,047</b>

Source: Department of Veteran's Affairs Annual Report

*Carer's pensions*

Pensions are granted to persons who provide ongoing care in the home of a severely handicapped veteran service pensioner. The pension is a means-tested income support payment.

*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, telephone allowance, rent assistance housing loan subsidies. An education allowance is paid for children of certain deceased, blinded, totally and permanently incapacitated veterans.

**Department of  
Health, Housing,  
Local Government  
and Community  
Services**

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

These programs include: Health Advancement; Health Care Access; Aged Care; Disability Programs; Children's Services; and Housing and Urban Development.

*Health Advancement*

This program aims to improve the health of all Australians, to reduce differences in health status between social groups, and to promote high quality health research that improves the social and economic well-being of Australians. Major projects undertaken during 1992-93 included; a household survey on drug use and knowledge; a major revision of guidelines on lead in blood; evaluation of the national HIV/AIDS strategy; and development of a National Immunisation Strategy.

*Health Care Access*

The Health Care Access program covers Medicare benefits, the Pharmaceutical Benefits Scheme, hospitals, insurance and other health services and home and community care for people needing post-acute or palliative care. During 1992-93 new Medicare arrangements were made between the Commonwealth and the states. As well the Hospital Access Program was commenced with \$48.3m allocated to improve public patient access to elective surgery.

*Aged Care*

With a goal of enhancing the independence and quality of life of the frail aged and their carers this program makes available high quality and cost-effective services appropriate to assessed need.

*Disability Programs*

The Disability program aims to support people with disabilities so that they can properly participate in society, especially in the labour market. The Commonwealth/State Disability Agreement was implemented in Western Australia during the year so that all states and territories are now covered. Nationwide 1,174 new employment places were created and 52 new employment services established. The Commonwealth Rehabilitation Service assisted 20,480 Department of Social Security clients, with 45 per cent who completed programs being placed in jobs.

*Family and Children's  
Services*

By extending choices available for families and children at home, at work and in the general community this program aims to improve the quality of family life. In 1992-93, \$45.4 million was expended on grants for children's services and 563 operational services were conducted in Western Australia. The most numerous being 116 private long day care centres and 110 out-side school hours care centres.

**TABLE 6.5 - DISABILITY PROGRAM WESTERN AUSTRALIA,  
JUNE 1992-93**

	<i>Number of services</i>	<i>Expenditure \$'000</i>
Rehabilitation	16	9,031
Accommodation (a)	92	17,524
Employment	65	8,719
Community participation (b)	22	6,329
Commonwealth State Disability Agreement	n.a.	1,927
Program management	n.a.	53
<b>Total</b>	<b>195</b>	<b>43,583</b>

(a) Includes accommodation support services, respite care service and the attendant care scheme. (b) Includes advocacy services, print disability services, information services, recreation services, independent living and training services, and research and development projects.

Source: Department of Health, Housing, Local Government and Community 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 1992-93 an amended Commonwealth-State Housing Agreement will provide \$4 billion over four years, increasing public housing units to 400,000 by 1996. During the year Western Australia received \$105,721,000 in rental accommodation grants.

## **Department for Community Development**

The Western Australian Department for Community Development deals with a range of issues and problems in working towards its objectives of enhancing the welfare of families, individuals and groups, particularly those who are disadvantaged; providing and promoting preventative community support and assistance to people; preventing abuse, neglect and exploitation of children; and responding to the needs of young offenders, their families, and carrying out orders of the court.

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, conflict resolution, 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, affordable child care facilities.

The Department's role varies from providing the service directly, negotiating with, and funding community agencies to providing services and 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, Children's Services, and Out of Home and Alternative Care.

### *Financial and Material Assistance*

The objectives of this program are to assist financially disadvantaged people to address short-term financial emergencies, increase the affordability of essential goods and services and improve their ability to manage on a low income. Assistance is provided under the Concessional and Emergency Financial Assistance and Financial Counselling sub-programs.

### *Child Protection*

Through this program, the Department aims to reduce the incidence and damaging effects of child abuse and neglect, and to safeguard the child's right to protection and freedom from harm. This may be done by providing services for the assessment of allegations of harm to children; the provision of support and treatment services for victims, family members and perpetrators of harm; and the provision of education and community awareness programs.

During 1992-93 5,570 allegations were recorded on the Department's Child Protection Information System. This represents a 27 per cent increase from 1991-92 and a 98 per cent increase over the number recorded in 1988-89. Of all the allegations reported to the Department 40 per cent were substantiated or the child considered 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 focuses on the dual aims of reducing offending through prevention and diversion, and targeting services to specific groups of offenders to ensure the effectiveness of those services. Prevention services will be extended to further reduce the number of first and minor offenders coming into contact with the formal justice system.

### *Community Affairs*

This program aims to ensure that communities have the resources to deliver accessible services which meet local social needs. It provides an avenue for the development and implementation of the Department's community focused work. Community focused solutions to common social issues can be achieved by the location of services and facilities in appropriate places and the establishment of community net-works. In 1992-93 the Department expended a total of \$36.6 million for non-government services. This was an increase of over 18 per cent on the previous

year and represents approximately 31 per cent of the Department's total budget.

### **Disability Services Commission**

After seven and a half years in existence. The Authority for Intellectually Handicapped Persons has been replaced by the Disability Services Commission for the 1993-94 financial year. The aim of the new commission is to remove the artificial boundaries between people in general and between people who have disabilities. Services and support will be provided so as to take account of these differences and respond to individual need.

### **The Western Australian Council of Social Service**

The Western Australian Council of Social Service (WACOSS) is an independent organisation representing a wide 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 assist organisations within the community services sector develop professional, efficient, effective, and compassionate services;
- to act as a peak body to represent the views and needs of client groups and populations to government, the non-government sector, the media and the public;
- to educate people working within the field and the public about issues affecting social and community service organisation, their clients and people experiencing disadvantage; and
- to produce pro-active, powerful, principled and well informed policy.

One of the most important events in 1994 for WACOSS was the organisation's appointment as the Australians for Reconciliation Co-ordinators for Western Australia. WACOSS has been accepted by Aboriginal organisations for this role and the Council will work toward the National Reconciliation goal.

### **ABS Surveys**

The ABS conducts surveys of relevance to social welfare.

#### *Survey of Families in Australia*

A survey was conducted between March and May 1992 to examine the ways in which family members support each other in areas of employment, income, housing, child care, personal care/home help, education and transport. A household family was defined as two or more people living in the same household who are related by blood, marriage, fostering or adoption. The ways in which family members who live in different households give and receive support was also surveyed along with patterns of cohabitation and the formation of alternative family structures.

The findings indicated there were 4,775,200 household families in Australia and 459,200 household families in Western Australia. Nationally 88 per cent of persons were living with at least one other family member in the same household. Registered married couple families with dependent children families made up 40 per cent of all families in Australia. Of Australia's 620,000 one parent families 522,100 (84 percent) were lone mother families. For all family types Western Australia reported levels consistent with the national average. Further information may be obtained from *Australia's Families - Selected Findings from the Survey of Families in Australia March 1992 to May 1992* (Catalogue 4418.0).

### *Survey of Disability, Ageing and Carers*

The 1993 Survey of Disability, Ageing and Carers was conducted to provide up-to-date data on types of disability, level of severity of handicap, current and future care needs, the need for and provision of help and the effects of the caring role on carers.

The survey estimated that 3,176,700 persons or 18.0 per cent of the Australian population had a disability. In Western Australia, 305,000 people or 18.2 per cent of the population had a disability. The most common disabling condition was arthritis and other musculoskeletal conditions which accounted for over a quarter of all reported conditions.

Australia-wide there were 577,500 carers of disabled persons in 1993. For Western Australia, the figure was 45,700 of whom 67 per cent were female.



## 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 Government Health Benefits and Services

Commonwealth activity in the health area is mainly concerned with the formulation of broad national policies, the provision of benefits and grants to individuals and organisations, and the 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 out-patient 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.

**TABLE 6.6 - MEDICARE: WESTERN AUSTRALIA**  
30 June 1993

Persons enrolled (a)	1,632,000
Services processed—	
General practitioner attendances	7,750,000
Specialist attendances	1,176,000
Pathology	3,505,000
Other	2,013,000
<b>Total</b>	<b>14,444,000</b>
Average services processed per enrolled person—	
Males	6.7
Females	10.6
Persons	8.6
Benefits paid	\$407,275,000

(a) Medicare enrollees include some persons who are not Australian residents (e.g. visitors). Consequently the number of enrollees may exceed the resident population. Figures are as at 30 June 1993.

Source: Health Insurance Commission, Annual Report, 1992-93

### Health Insurance

The Health Insurance Commission pays Medicare and pharmaceutical benefits as provided for in the Health Insurance Act. It also undertakes measures to detect and prevent medical fraud and excessive servicing with respect to the payment of

benefits and provides services for the processing of the Department of Veterans' Affairs treatment accounts.

## *Veterans and Dependants*

The Commonwealth meets the costs for eligible veterans and their dependants of specialist, local medical officer, paramedical, dental services, the supply and maintenance of surgical aids, and travelling and other expenses incurred in obtaining medical treatment. Repatriation hospitals and clinics are maintained in each State for the treatment of eligible veterans and their dependants. Community patients are admitted to Repatriation hospitals free of charge if spare beds are available and the facilities are suitable for the treatment required. Conversely, veterans and their dependants may, where appropriate, be admitted to private or State public hospitals, generally at Commonwealth expense.

## *State Public Hospitals*

Apart from Commonwealth outlays for free hospital care under Medicare, the Commonwealth also contributes to the upgrading of the infrastructure of State public hospitals through the Hospital Enhancement Program. In 1992-93 the Commonwealth committed \$21.1 million for general capital projects and \$15.7 million for the installation and operation of 16 Magnetic Resonance imaging units in Australian public hospitals.

**TABLE 6.7 - HOSPITALS AND BEDS(a): STATES AND TERRITORIES AT 30 JUNE 1992**

	NSW (b)	Vic	Qld	WA	SA	Tas	NT	ACT	Aust
<b>HOSPITALS</b>									
Recognised (public) hospitals	203	157	150	88	80	19	5	3	705
Private hospitals	90	111	49	22	38	7	1	2	320
Day hospital facilities(c)	45	21	4	4	1	—	—	4	79
<b>All hospitals</b>	<b>338</b>	<b>289</b>	<b>203</b>	<b>114</b>	<b>119</b>	<b>26</b>	<b>6</b>	<b>9</b>	<b>1,104</b>
<b>BEDS</b>									
Recognised (public) hospitals	20,115	13,192	9,997	4,795	5,281	1,486	591	819	56,276
Private hospitals (licensed)	6,105	6,284	4,371	2,026	2,235	634	150	169	21,974
Day hospital facilities(c)	281	158	39	57	12	—	—	14	561
<b>All hospitals</b>	<b>26,501</b>	<b>19,634</b>	<b>14,407</b>	<b>6,878</b>	<b>7,528</b>	<b>2,120</b>	<b>741</b>	<b>1,002</b>	<b>78,811</b>
Beds per 1 000 population	4.4	4.4	4.7	4.1	5.2	4.5	4.4	3.4	4.5

(a) Based on data provided by State/Territory Health Authorities. (b) NSW recognised (public) hospital beds are calculated on an average of beds available at the end of each month but discounted for adjustments affecting December and January. (c) Day hospital facilities are private free-standing day hospital facilities as approved for the purpose of the National Health Act 1953

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

### *Nursing Home Subsidies and Domiciliary Care Services*

Nursing home subsidies are provided to ensure that those people who are assessed as needing nursing home care, have access to residential support and care which is appropriate to their needs. The Commonwealth meets the approved operating deficits of eligible non-profit nursing homes for persons with disabilities. In addition, nursing home benefits are paid to a small number of nursing homes for people with disabilities. During 1992-93 recurrent expenditure on nursing home benefits totalled \$134.6 million in Western Australia (\$1,680.9 million nationally).

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 1992-93 the Domiciliary Nursing Care Benefit recurrent expenditure of Western Australia was \$3.7 million (\$40.3 Million Australia-wide) and the total number of people being cared for was 3,470 (35,474 in Australia).

### *Pharmaceutical Benefits Scheme*

The Pharmaceutical Benefits Scheme (PBS) aims to provide Australians with access to a wide range of pharmaceuticals at affordable prices. The Health Insurance Commission administers the PBS on behalf of the Commonwealth. It processes pharmacist's claims, reimburses them for medication dispensed and undertakes tasks associated with the detection and prevention of abuse.

During 1992-93 some 106 million prescriptions were prescribed nationally at a cost of \$1,419 million. Cardiovascular and central nervous system pharmaceuticals were the two most commonly prescribed categories of drug groups at 20.1 and 18.9 per cent of all prescriptions respectively. In Western Australia during the same period 8.3 million prescriptions were issued at a cost of \$108.1 million.

### *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 \$103.4 million and \$8.4 million respectively during 1992-93.

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 AIDS Program* The National Health Promotion Program, which supports community based initiatives to promote better health and to prevent illness, is one such activity. Under the National AIDS program, expenditure on AIDS research in 1992-93 amounted to \$23.9 million while \$25.0 million was spent on blood bank screening, education and prevention, treatment and support services, the National Media Campaign and other information and reference activities.
- National Better 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 \$2.4 million in 1992-93.
- Health services for Aboriginal People* 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. The Multifunctional Aboriginal Children's Service assists child care centres to meet the individual needs of communities and to provide culturally appropriate services. AIDS education is also focussing on the needs of Aboriginal and Torres Strait Island people with recent activities including television commercials and radio serials in Central Australia, a range of workshops and the development of various community support systems for Aboriginal Health Workers.
- National Drug Programs* The National Campaign Against Drug Abuse (NCADA) activities include drug abuse treatment, rehabilitation and prevention programs, the 'Drug Offensive' public information campaign and the development of a national drug abuse data system together with research and evaluation. In 1992-93, the Commonwealth Government contributed \$34.3 million nationally to NCADA which consisted of \$15.4 million for national campaigns and \$19.2 million in grants to the States (\$1.8 million to Western Australia).
- The Health Department of Western Australia** The Health Department of Western Australia coordinates and manages health care functions and services throughout the State. The Department administers a wide range of legislation incorporating matters of individual and community health 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 through two sub-programs: Health Protection and Health Promotion.

### Breast Cancer Screening

Contributed by Health Department of Western Australia

Breast cancer is the most common life threatening cancer in Western Australian women, accounting for 200 deaths every year and affecting one in every 15 women. Over 600 new cases of breast cancer are diagnosed in Western Australia every year.

While there is no way of preventing breast cancer, the Health Department of Western Australia strives to reduce a woman's chances of dying from breast cancer through early detection.

By the end of April 1994, its Women's Cancer Prevention Unit (WCPU), which was established in 1988, had screened more than 55,000 women for breast cancer. Another 26,000 Western Australian women had undergone repeat mammography screenings.

The unit coordinates six breast X-ray screening services throughout the State: a fixed service in both Cannington and Mirrabooka, a mobile unit in Wanneroo, and three mobile country units.

The country mobiles operating in the south-west region, the northern region and the south-east region recently completed their first two year cycle of visits. This means that all women in the target age group of 50-69 years living in rural and remote areas of Western Australia have been offered free breast X-ray screening.

Western Australia is the first State in Australia to have achieved this complete coverage of country areas, no mean feat given the size of the State and its scattered population.

Three more metropolitan screening units are planned for Midland, Fremantle and Central Perth. A fixed unit in Joondalup, to be completed by early 1995, will replace the mobile unit servicing the Wanneroo area.

The Health Department offers free breast X-ray screening to women aged over 40 years. However, the evidence of benefit from screening is greatest for women aged between 50 and 69 years. Overseas studies show that women in this age group who have biennial breast X-rays can decrease their mortality from breast cancer by 50 per cent.

The WCPU actively recruits women aged 50-69 years by sending personalised letters to all women in this age group, who are registered on the electoral roll, inviting them to attend for screening. Once women have attended, they are invited to be rescreened every two years.

Women aged 40-49 years are eligible to attend, although overseas studies have not shown any definite decrease in the death rate from breast cancer for women aged under 50 involved in a coordinated screening program. Because younger women

have much denser breast tissue, it is more difficult for X-rays to show changes that may indicate small cancers.

While women aged over 69 years also are welcome to attend, they tend to have other health priorities and therefore are not actively recruited. Women who have abnormalities detected on their breast X-ray have in the past been referred to their Doctor for follow-up. With the opening in May 1994 of public facilities for the diagnosis of breast X-ray abnormalities, women now have the choice of being referred to their Doctor or to one of three breast assessment centres at the Mount Hospital, Royal Perth Hospital and St Anne's Mercy Hospital.

A fourth breast assessment centre, at Sir Charles Gairdner Hospital, will open at a later date. Each centre is staffed by a multi-disciplinary team, including a radiologist, a pathologist, a surgeon and a medical counsellor who provide integrated diagnosis and counselling services.



A Western Australian woman undergoes breast X-ray screening.

*Photograph: Courtesy of the Health Department of Western Australia.*

Health Protection	<p>The Program aims to minimise the exposure of the public to physical, chemical and biological agents of disease in the community. It emphasises quality control of food, air and water and the control of other external environmental influences such as chemical exposure and misuse. During 1992-93, strengthened strategies for surveillance and control of food products and bacteria resulted in a reduction of contaminants in food products. Improvements to hazardous waste management included the development of Australia's first intractable waste disposal facility at Mount Walton with a consignment of low-level radio-active waste being buried in November 1992.</p>
Health Promotion	<p>The Program seeks to encourage people to adopt attitudes and behaviours which will reduce the incidence of major preventable diseases and injuries. Targeted areas include nutrition, education, infectious disease control, AIDS information, alcohol, drug and smoking control, skin cancer prevention, hypertension control and Aboriginal health.</p> <p>Statewide health promotion campaigns in smoking, nutrition, immunisation alcohol and drugs were carried out during 1992-93, targeting the needs of high-risk groups, Aboriginal people, non-English speaking people and youth.</p>
Health Restoration Program	<p>The program aims to restore people who are ill or injured to their optimum health level, to provide obstetric care, through sub-programs for:</p> <ul style="list-style-type: none"><li>• the early detection and control of disease;</li><li>• equitable access to community based health care for the geographically, socially or culturally disadvantaged (Ambulatory Health Care sub-program); and</li><li>• a comprehensive range of hospital services (Secondary and Tertiary Care sub-programs).</li></ul> <p>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.</p>
Rehabilitation of Disabled Persons and Restorative Care Program	<p>This program exists to assist people disabled by disease or injury to gain or regain independence through restoration of lost function, or development of alternative skills that enable them to cope better with their loss of function.</p>
Continuing Care Program	<p>This program — through the Community Care and Residential Care sub-programs — provides support and care for people with incurable chronic 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.</p>

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 Health Services**

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

#### *Western Australian Alcohol & Drug Authority*

The Authority provides coordinated, accessible, comprehensive and effective prevention and treatment programs for people who are experiencing alcohol and other drug problems. The Authority is structured into four programs; Clinical Services, Regional and Community Services; Education and Research and Corporate Services.

The Authority seeks to encourage community responses to alcohol and other drug problems. Support and financial assistance is available for non-government organisations needing assistance to deliver their own programs. Education, information and advice on alcohol and drugs is available for health and welfare workers.

The Alcohol and Drug Information Service run by the Clinical Services program received 12,291 telephone calls in 1992-93, the highest ever yearly total. The Regional and Community Services program saw a 28 per cent increase in the number of locations where sessional services were offered during 1992-93. The Education and Research program held approximately 300 events during 1992-93 which were offered to almost 7,500 participants.

#### *The Perth Aboriginal Medical Service*

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

#### *Family Planning Association of Western Australia (Inc)*

The Family Planning Association of Western Australia (FPAWA) 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.



### **Sexually Transmissible Diseases**

**Contributed by Health Department of Western Australia**

Initiatives are underway to more effectively contain sexually transmissible diseases (STDs) and improve STD care services throughout Western Australia.

With country areas having nine times as many reported cases of STDs as the city, particular focus will be on the Kimberley, Pilbara and Goldfields regions. Despite significant improvements over the past decade including wider involvement of Aboriginal communities and health workers the prevalence of Gonorrhoea and Syphilis remains high in these regions. Of particular concern is the risk of the human immunodeficiency virus (HIV) piggy-backing on to their transmission.

The new initiatives follow a 1993 Health Department of Western Australia review of STD and HIV/AIDS services in Western Australia. Key findings of the review were:

- the allocation of resources for STD/HIV services should reflect the epidemiology of STD/HIV in Western Australia;
- the concentration of resources in the metropolitan area, where major problems do not arise, is not justified and should be transferred to higher priority areas where prevalence and incidence of STDs are high;
- Doctors should be responsible for the primary health care for STD/HIV in the metropolitan, Central Wheatbelt, Great Southern and South-West health regions, supported by adequate training and specialist services; and
- the long-term control and prevention of STD/HIV transmission will result from a high level of community based ownership and participation, as will high quality care of people infected with HIV.

In line with its recommendations, the Department has begun restructuring metropolitan operations. The Murray Street STD Clinic in Perth closed at the end of the 1993-94 financial year. Its services have been incorporated into Infectious Diseases units at Royal Perth Hospital and Fremantle Hospital.

The regional public health units will work closely with the Department's Disease Control Branch to implement a

consistent statewide approach to disease control. Other recommendations include:

- abolition of the AIDS Bureau and transfer of its staff and functions to the Disease Control Branch;
- replacement of the Western Australia AIDS Advisory Committee with an intersectoral task force and three expert advisory committees;
- enhanced epidemiological tracking of HIV/AIDS and STDs in Western Australia;
- expanded outreach services to vulnerable groups; and
- promotion of private sector men's health services, partly funded through the Department.

The review noted that further consultation was needed with Aboriginal communities and their health workers for improved STD/AIDS programs. Other priorities included data collection and feedback, sex education among young people, and the development of less invasive screening programs and more effective treatment regimens.

An information and referral telephone access service is to be established to provide additional assistance.

**TABLE 6.8 – FAMILY PLANNING ASSOCIATION OF WESTERN AUSTRALIA (INC) 1992-93**

Funding-	(\$)
Commonwealth Government	1,457,061
State Government	65,400
Project grants	345,935
Self generated funds	339,875
<b>Total</b>	<b>2,208,271</b>
Services -	(No.)
Clinical consultations	18,628
Telephone Information consultations	14,962
Participants in Community Education programs	1,534
Participants in Professional Education programs	714
Library attendance	4,000

Source: Family Planning Association of Western Australia, Annual Report, 1993

The Association runs clinics in Northbridge, Fremantle and Mirrabooka engaged in 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.

During 1992-93 of the 18,628 clients who visited an FPAWA clinic, over 4,000 used the library and 900 people received counselling. Contraceptives were supplied to 48 per cent of clients with three-quarters of these persons receiving oral contraception (combined pill). During 1992-93 the Association developed a training curriculum about sexuality for Aboriginal groups called the Moonjuality Programme: 2,356 persons attended sessions, group talks or workshops, and a considerable proportion of these being persons from rural and remote areas of the state.

*The Australian Red  
Cross, Western  
Australia*

As part of its broad community service activities, the Society 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 sources of funding are the Health Department of Western Australia and the Home and Community Care program. This Commonwealth/State cost sharing agreement aims to provide an integrated range of services for frail aged and younger persons with disabilities. The number of client visits for domiciliary services in 1993 increased 47 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.

**TABLE 6.10 – PERSONS AGED 18 AND OVER:  
SMOKER STATUS BY HEALTH RISK LEVEL OF ALCOHOL  
INTAKE BY EXERCISE LEVEL - WESTERN AUSTRALIA, ('000)  
1989-90**

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

Health risk level of alcohol consumed		Exercise Level			Total
		Low	Medium	High	
SMOKER					
Did not consume alcohol in last seven days	31.9	24.1	6.0	6.4	78.5
Low	67.7	47.5	42.3	33.4	190.9
Medium	13.3	6.6	6.6	8.9	35.4
High	9.7	4.1	4.3	6.4	24.4
Total	122.6	82.3	69.2	55.2	329.2
EX-SMOKER					
Did not consume alcohol in last seven days	27.2	25.3	18.3	9.0	79.7
Low	53.0	41.7	41.7	30.7	167.0
Medium	5.3	3.9	4.9	3.8	17.9
High	3.9	2.3	2.5	2.0	10.6
Total	89.4	73.1	67.4	45.5	275.3
NEVER SMOKED					
Did not consume alcohol in last seven days	82.7	58.4	53.8	30.7	225.6
Low	76.5	74.1	78.1	82.9	311.7
Medium	6.5	74.1	78.1	82.9	311.7
High	2.3	1.3	2.3	2.6	8.6
Total	167.7	138.2	139.7	121.8	567.5
PERSONS					
Did not consume alcohol in last seven days	141.9	107.8	88.1	46.1	383.8
Low	197.2	163.3	162.1	147.0	669.6
Medium	24.7	14.9	17.1	18.3	75.0
High	15.9	7.6	9.1	11.0	43.6
Total	379.7	293.6	276.3	222.4	1,172.0

*Smoker status by health  
risk level of alcohol  
intake by exercise level*

For Western Australians aged 18 and over, 28 per cent (329,200) were current smokers, 23 per cent (275,300) were ex-smokers and 48 per cent (567,500) had never smoked. Of smokers 38 per cent (124,400) reported a high or medium level of exercise compared with 46 per cent (261,500) for those who had never smoked. 9,700 persons were smokers who did not exercise and had consumed a high health risk level of alcohol during the seven days prior to the survey. Conversely 30,700 persons had never smoked, had a high exercise level and did not consume any alcohol during the week prior to the survey.

*Body mass index*

Persons participating in the 1989-90 National Health Survey were categorised into four groups according to their body mass,

Over a third of the population aged 18 years or over surveyed in Western Australia (34.7 per cent) had a body mass index score putting them into the overweight or obese categories. For males 41 per cent (242,700) were overweight or obese and for females 28 per cent (164,300). For those who were assessed as underweight the situation was reversed with males at five per cent (31,300) and females 18 per cent (104,400).

## Health Insurance Surveys

In June 1992, 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 subsequently in 1986, 1988 and 1990.

**TABLE 6.11 – PERSONS AGED 18 AND OVER: BODY MASS INDEX BY AGE AND SEX, WESTERN AUSTRALIA, 1989-90**

(Reference: National Health Survey, Summary of Results, State tables)  
(<sup>1</sup>000)

Body mass index	Age group (years)							Total
	18-24	25-34	35-44	45-54	55-64	65-74	75 and over	
<b>Males—</b>								
Underweight	10.1	6.2	6.4	2.3	2.3	2.6	1.3	31.3
Acceptable weight	57.0	81.0	63.1	34.1	27.3	18.9	9.9	291.4
Overweight	19.5	44.2	48.1	36.6	24.8	19.1	5.4	197.7
Obese	1.6	9.3	9.5	11.0	6.7	5.9	n.a.	45.0
Not available	7.2	2.8	2.7	3.0	3.0	n.a.	2.2	21.8
<b>Total</b>	<b>95.5</b>	<b>143.6</b>	<b>129.8</b>	<b>87.0</b>	<b>64.2</b>	<b>47.3</b>	<b>19.7</b>	<b>587.1</b>
<b>Females—</b>								
Underweight	29.7	31.1	19.7	9.6	3.6	5.8	4.9	104.4
Acceptable weight	44.3	69.9	66.8	36.0	28.4	23.0	11.7	280.0
Overweight	8.0	20.3	21.9	23.5	21.1	13.1	7.7	115.6
Obese	3.2	10.4	9.8	10.0	6.0	7.2	1.9	48.7
Not available	7.2	6.4	6.1	1.7	2.6	5.3	6.9	36.2
<b>Total</b>	<b>92.5</b>	<b>138.1</b>	<b>124.4</b>	<b>80.8</b>	<b>61.7</b>	<b>54.4</b>	<b>33.0</b>	<b>584.9</b>
<b>Persons—</b>								
Underweight	39.9	37.2	26.2	11.9	5.9	8.5	6.2	135.7
Acceptable weight	101.3	150.9	129.9	70.1	55.7	41.9	21.6	571.4
Overweight	27.5	64.6	70.0	60.1	45.9	32.1	13.1	313.3
Obese	4.9	19.7	19.4	21.0	12.8	13.1	2.8	93.6
Not available	14.4	9.2	8.8	4.7	5.7	6.1	9.0	57.9
<b>Total</b>	<b>188.0</b>	<b>281.7</b>	<b>254.2</b>	<b>167.8</b>	<b>125.9</b>	<b>101.7</b>	<b>52.7</b>	<b>1,172.0</b>

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, 8,241,400 persons in contributor units, representing 48 per cent of the Australian population, were covered by private health insurance at June 1992, a fall of four per cent from June 1990. The

proportion of persons with private health insurance cover varied between the States and Territories, ranging from 54 per cent in South Australia to 38 per cent in Queensland. Western Australia reported 53 per cent or 891,700 persons in contributor units with private health insurance.

The proportion of persons with private health insurance cover was similar for residents of State Capital cities compared with residents of other areas of the State, the exception being Hobart (57 per cent as opposed to 46 per cent for the State as a whole). The proportion of persons with private health insurance for Perth and for the rest of Western Australia was similar (54.7 and 49.5 per cent respectively).

Of those persons reporting private health insurance in Western Australia, 79.3 per cent (707,200) had hospital and ancillary cover, 4.0 per cent (35,800) had hospital cover only and 15.9 per cent (141,600) had ancillary cover only.

### References

- |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>ABS Publications</i>   | <i>Health Insurance Survey, Australia (4335.0)</i><br><i>National Health Survey, User's Guide (4363.0)</i><br><i>National Health Survey, Summary of Results, State Tables (unpublished data)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>Other Publications</i> | <i>Annual Report, Department of Health, Housing and Community Services.</i><br><i>Annual Report, Family Planning Association of Western Australia.</i><br><i>Annual Report, Health Department of Western Australia.</i><br><i>Annual Report 1992-93, Health Insurance Commission.</i><br><i>Annual Report, Perth Aboriginal Medical Service.</i><br><i>Annual Report 1992-93, Australian Red Cross, Western Australia.</i><br><i>Annual Report, Silver Chain Nursing Association.</i><br><i>Annual Report 1993, Western Australia Alcohol and Drug Authority.</i><br><i>Annual Report 1990-91, Department of Social Security.</i><br><i>Annual Report 1992-93, Repatriation Commission and the Department of Veterans' Affairs.</i><br><i>Annual Report 1993, Department for Community Development.</i> |



# POPULATION

## population

## Chapter 5

# POPULATION

---

Contents	Page
<b>Population</b>	
Summary	89
Characteristics of the Population	90
Aboriginal and Torres Strait Islander people	92
Population in Statistical Local Areas	93
<b>Vital Statistics</b>	
Registration	96
Births	96
Deaths	97
Life Expectancy	101
Marriages	101
Divorces	103
Overseas Migration	104
References	106



## Chapter 5

# POPULATION

## Population

### Summary

The population of Western Australia has many diverse ethnic, racial and religious characteristics. Data in Table 5.1 indicates:

- Western Australia contains about one-tenth of the Australian population;
- the sex ratio in Western Australia has been declining since 1971; and
- the annual growth rate has been declining consistently since 1989.

**TABLE 5.1 – RESIDENT POPULATION:  
WESTERN AUSTRALIA AND AUSTRALIA**

References: Catalogue Nos. 3101.0, 3201.0

<i>Year ended 30 June</i>	<i>Western Australia</i>	<i>Australia</i>	<i>Proportion of Australia</i>	<i>Western Australia</i>	
				<i>Sex ratio(a)</i>	<i>Annual growth rate</i>
	persons	persons	per cent	persons	per cent
1971 (b)	1,053,834	13,067,265	8.06	104.83	(b)
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
1989 r	1,578,434	16,814,416	9.39	101.60	2.66
1990 r	1,613,049	17,065,128	9.45	101.46	2.19
1991 r	1,636,067	17,284,036	9.47	101.20	1.43
1992 p	1,659,350	17,489,072	9.49	101.10	1.42
1993 p	1,676,420	17,657,379	9.49	101.03	1.03

(a) Number of males per 100 females. (b) Resident Population not calculated prior to 1971.

## Characteristics of the Population

Table 5.2 indicates that:

- males outnumber females by 8,610;
- for both males and females the 30-34 year age group contains the largest proportion of either sex; and
- females outnumber males from about the age of 65 years onwards.

**TABLE 5.2 – RESIDENT POPULATION  
IN SELECTED AGE GROUPS  
AT 30 JUNE 1993 -Preliminary**  
Reference: Catalogue No. 3101.0

Age group (years)	Number in each age group			Per cent		
	Males	Females	Persons	Males	Females	Persons
0 – 4	64,466	61,081	125,547	7.7	7.3	7.5
5 – 9	66,710	62,966	129,676	7.9	7.6	7.7
10 – 14	65,163	61,180	126,343	7.7	7.3	7.5
15 – 19	64,557	61,296	125,853	7.7	7.4	7.5
20 – 24	70,048	67,003	137,051	8.3	8.0	8.2
25 – 29	65,341	64,414	129,755	7.8	7.7	7.7
30 – 34	70,154	70,100	140,254	8.3	8.4	8.4
35 – 39	67,774	68,142	135,916	8.0	8.2	8.1
40 – 44	65,759	64,181	129,940	7.8	7.7	7.8
45 – 49	58,214	53,587	111,801	6.9	6.4	6.7
50 – 54	43,285	40,136	83,421	5.1	4.8	5.0
55 – 59	35,333	33,937	69,270	4.2	4.1	4.1
60 – 64	31,442	30,649	62,091	3.7	3.7	3.7
65 – 69	27,838	29,088	56,926	3.3	3.5	3.4
70 – 74	20,471	24,297	44,768	2.4	2.9	2.7
75 – 79	13,272	18,558	31,830	1.6	2.2	1.9
80 – 84	7,970	13,121	21,091	0.9	1.6	1.3
85 and over	4,718	10,169	14,887	0.6	1.2	0.9
<b>Total</b>	<b>842,515</b>	<b>833,905</b>	<b>1,676,420</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

*Religion and Birthplace* Results from the 1991 Census reveal:

- Anglicans and Catholics represented 52.1 per cent (or 827,400 persons) of the Western Australian population;
- non-Christian religions represented 33,500 persons, only 2.1 per cent of all people in Western Australia;
- 86.0 per cent (or 1,364,500 persons) were born in English-speaking countries - primarily Australia and United Kingdom; and
- of the 191,800 persons born in non-English speaking countries, 14.1 per cent were born in Italy; 8.4 per cent were born in Malaysia; and 6.1 per cent were born in the Netherlands.

**TABLE 5.3 – RELIGION OF THE POPULATION, CENSUS COUNTS**  
(‘000 persons)

Religion	30 June 1981		30 June 1986		6 August 1991	
	‘000	%	‘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
<i>Total Christian</i>	<i>937.1</i>	<i>73.6</i>	<i>978.0</i>	<i>69.5</i>	<i>1106.9</i>	<i>69.7</i>
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
<i>Total Other</i>	<i>336.5</i>	<i>26.3</i>	<i>428.6</i>	<i>30.4</i>	<i>480.2</i>	<i>30.3</i>
<b>Total</b>	<b>1,273.6</b>	<b>100.0</b>	<b>1,406.9</b>	<b>100.0</b>	<b>1,586.8</b>	<b>100.0</b>

(a) The Uniting Church in Australia — which was formed in June 1977 by the union of all the Methodist Churches and most of the Congregational and Presbyterian Churches — replaced the Methodist Church as a major category in the 1986 Census.

**TABLE 5.4 – BIRTHPLACE OF THE POPULATION (a):**  
**CENSUS COUNTS**  
(‘000 persons)

Birthplace	30 June 1981	30 June 1986	6 August 1991
Main English-speaking countries—			
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
<i>Total</i>	<i>1,124.0</i>	<i>1,228.4</i>	<i>1,364.5</i>
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
<i>Total</i>	<i>135.4</i>	<i>155.9</i>	<i>191.8</i>
<b>Total (a)</b>	<b>1,273.6</b>	<b>1,406.9</b>	<b>1,586.8</b>

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

## Aboriginal and Torres Strait Islander people

The 1991 Census of Population and Housing counted 41,779 Aboriginal and Torres Strait Islander people 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 Aboriginal and Torres Strait Islander people at 30 June 1981, 1986 and 6 August 1991.

At 6 August 1991:

- 61.4 per cent of Aboriginal and Torres Strait Islander people 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; and
- there were relatively fewer Aboriginal and Torres Strait Islander people in each age group above 20-24 years than for the total State population.

**TABLE 5.5 – ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE: AGE DISTRIBUTION, CENSUS COUNTS**  
(persons)

<i>Age last birthday (years)</i>	<i>30 June 1981</i>	<i>30 June 1986</i>	<i>6 August 1991</i>
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
<b>Total</b>	<b>31,357</b>	<b>37,787</b>	<b>41,780</b>

**Population in Statistical Local Areas** In Table 5.6 resident population in Statistical Local Areas is ranked by growth between 30 June 1992 and 30 June 1993. The names and designations are as they existed at 30 June 1993. 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.

**TABLE 5.6 — RESIDENT POPULATION (E.R.P.)  
30 JUNE 1992 AND 30 JUNE 1993  
STATISTICAL LOCAL AREAS RANKED BY GROWTH**  
Reference : Catalogue No. 3203.5

<i>Statistical Local Area</i>	<i>1992</i>	<i>1993</i>	<i>Population change</i>	<i>Per cent change</i>
<b>PERTH STATISTICAL DIVISION</b>				
Rockingham (C)	47,284	51,391	4,107	8.69
Swan (S)	57,663	61,700	4,037	7.00
Wanneroo (C)	181,491	190,829	9,338	5.15
Serpentine-Jarrahdale (S)	8,472	8,834	362	4.27
Kwinana (T)	18,291	18,984	693	3.79
Fremantle (C) - Inner	1,104	1,125	21	1.90
Armadale (C)	49,949	50,804	855	1.71
Mundaring (S)	31,054	31,419	365	1.18
Gosnells (C)	72,200	73,009	809	1.12
Cockburn (C)	53,343	53,709	366	0.69
Melville (C)	91,799	92,019	220	0.24
Kalamunda (S)	48,224	48,209	-15	-0.03
Canning (C)	69,883	69,677	-206	-0.29
Nedlands (C)	20,761	20,697	-64	-0.31
Stirling (C) - Central	103,946	103,505	-441	-0.42
Bayswater (C)	46,331	46,129	-202	-0.44
Peppermint Grove (S)	1,547	1,538	-9	-0.58
Fremantle (C) - Remainder	22,865	22,703	-162	-0.71
Cottesloe (T)	7,603	7,541	-62	-0.82
Mosman Park (T)	7,755	7,691	-64	-0.83
East Fremantle (T)	6,493	6,426	-67	-1.03
Perth (C) - South	25,455	25,192	-263	-1.03
Bassendean (T)	13,972	13,825	-147	-1.05
Stirling (C) - South-Eastern	20,657	20,374	-283	-1.37
Stirling (C) - West	55,500	54,727	-773	-1.39
Claremont (T)	9,382	9,249	-133	-1.42
Perth (C) - Wembley-Coastal	21,224	20,898	-326	-1.54
Perth (C) - North	20,403	20,088	-315	-1.54
South Perth (C)	35,441	34,890	-551	-1.55
Perth (C) - Inner	624	613	-11	-1.76
Subiaco (C)	15,364	15,085	-279	-1.82
Belmont (C)	27,288	26,724	-564	-2.07
Perth (C) - Outer	12,171	11,664	-507	-4.17
<i>Total</i>	<i>1,205,539</i>	<i>1,221,268</i>	<i>15,729</i>	<i>1.30</i>
<b>REMAINDER OF STATE</b>				
Greenough (S)	8,530	9,380	850	9.96
Shark Bay (S)	783	856	73	9.32
Mandurah (C)	31,397	34,170	2,773	8.83
Toodyay (S)	2,643	2,849	206	7.79
Augusta-Margaret River (S)	6,554	6,974	420	6.41
Boddington (S)	1,356	1,429	73	5.38
Chittering (S)	2,222	2,338	116	5.22
Harvey (S)	13,639	14,336	697	5.11

TABLE 5.6 — RESIDENT POPULATION (E.R.P.)  
30 JUNE 1992 AND 30 JUNE 1993  
STATISTICAL LOCAL AREAS RANKED BY GROWTH (continued)  
Reference: Catalogue No. 3203.5

<i>Statistical Local Area</i>	<i>1992</i>	<i>1993</i>	<i>Population change</i>	<i>Per cent change</i>
Irwin (S)	2,249	2,363	114	5.07
Gingin (S)	3,101	3,246	145	4.68
Sandstone (S)	247	258	11	4.45
Busselton (S)	14,957	15,617	660	4.41
Dardanup (S)	5,716	5,967	251	4.39
Capel (S)	5,622	5,861	239	4.25
Waroona (S)	3,057	3,174	117	3.83
Murray (S)	8,947	9,236	289	3.23
Denmark (S)	3,511	3,619	108	3.08
York (S)	2,668	2,738	70	2.62
Esperance (S)	11,222	11,506	284	2.53
Northam (S)	3,000	3,054	54	1.80
Broome (S)	8,017	8,157	140	1.75
Donnybrook- Balingup (S)	4,166	4,236	70	1.68
Kondinin (S)	1,116	1,134	18	1.61
Bruce Rock (S)	1,257	1,277	20	1.59
West Arthur (S)	1,022	1,038	16	1.57
Albany (S)	11,697	11,874	177	1.51
Morawa (S)	1,013	1,027	14	1.38
Bridgetown-Greenbushes (S)	4,017	4,071	54	1.34
Nannup (S)	1,123	1,137	14	1.25
Albany (T)	15,452	15,618	166	1.07
Bunbury (C)	27,522	27,813	291	1.06
Chapman Valley (S)	830	838	8	0.96
Plantagenet (S)	4,369	4,408	39	0.89
Kalgoorlie-Boulder (C)	26,897	27,123	226	0.84
Koorda (S)	617	622	5	0.81
Dalwallinu (S)	1,757	1,769	12	0.68
Quairading (S)	1,175	1,183	8	0.68
Tammin (S)	465	468	3	0.65
Ravensthorpe (S)	1,400	1,409	9	0.64
Wiluna (S)	1,600	1,610	10	0.63
Lake Grace (S)	1,834	1,843	9	0.49
Northampton (S)	2,894	2,907	13	0.45
Cuballing (S)	806	808	2	0.25
Geraldton (C)	21,353	21,320	-33	-0.15
Manjimup (S)	10,248	10,226	-22	-0.21
Three Springs (S)	872	870	-2	-0.23
Katanning (S)	4,853	4,840	-13	-0.27
Kojonup (S)	2,409	2,400	-9	-0.37
Mukinbudin (S)	694	690	-4	-0.58
Cunderdin (S)	1,500	1,489	-11	-0.73
Woodanilling (S)	402	399	-3	-0.75
Wyndham-East Kimberley (S)	5,882	5,826	-56	-0.95
Dandaragan (S)	2,387	2,364	-23	-0.96
Upper Gascoyne (S)	275	272	-3	-1.09
Kulin (S)	1,081	1,069	-12	-1.11
Jerramungup (S)	1,431	1,415	-16	-1.12
Derby-West Kimberley (S)	7,024	6,938	-86	-1.22
Moora (S)	2,793	2,756	-37	-1.32
Mount Marshall (S)	733	723	-10	-1.36
Gnowangerup (S)	1,875	1,849	-26	-1.39
Camarvon (S)	6,734	6,630	-104	-1.54
Narrogin (T)	4,960	4,882	-78	-1.57
Tambellup (S)	751	739	-12	-1.60

TABLE 5.6 — RESIDENT POPULATION (E.R.P.)  
30 JUNE 1992 AND 30 JUNE 1993  
STATISTICAL LOCAL AREAS RANKED BY GROWTH (continued)  
Reference: Catalogue No. 3203.5

<i>Statistical Local Area</i>	1992	1993	<i>Population change</i>	<i>Per cent change</i>
Wickepin (S)	932	917	-15	-1.61
Yilgarn (S)	2,193	2,157	-36	-1.64
Yalgoo (S)	426	419	-7	-1.64
Boyup Brook (S)	1,823	1,793	-30	-1.65
Northam (T)	6,881	6,765	-116	-1.69
Exmouth (S)	2,411	2,370	-41	-1.70
Collic (S)	9,655	9,490	-165	-1.71
Coorow (S)	1,589	1,561	-28	-1.76
Wagin (S)	2,023	1,987	-36	-1.78
Narrogin (S)	877	861	-16	-1.82
Kent (S)	848	832	-16	-1.89
Meckatharra (S)	1,919	1,881	-38	-1.98
Beverley (S)	1,485	1,455	-30	-2.02
Cranbrook (S)	1,212	1,187	-25	-2.06
Mingenew (S)	653	638	-15	-2.30
Narembeen (S)	1,042	1,018	-24	-2.30
Broomchill (S)	543	530	-13	-2.39
Goomalling (S)	1,150	1,119	-31	-2.70
Williams (S)	1,086	1,056	-30	-2.76
Coolgardie (S)	5,660	5,499	-161	-2.84
Merredin (S)	3,956	3,839	-117	-2.96
Mount Magnet (S)	1,167	1,132	-35	-3.00
Wongan-Ballidu (S)	1,751	1,697	-54	-3.08
Perenjori (S)	770	744	-26	-3.38
Corrigin (S)	1,426	1,377	-49	-3.44
Victoria Plains (S)	1,032	996	-36	-3.49
Halls Creek (S)	2,712	2,612	-100	-3.69
Dundas (S)	1,673	1,611	-62	-3.71
Port Hedland (T)	12,445	11,971	-474	-3.81
Wandering (S)	419	402	-17	-4.06
Pingelly (S)	1,250	1,199	-51	-4.08
Dumbleyung (S)	902	865	-37	-4.10
Laverton (S)	1,742	1,666	-76	-4.36
Murchison (S)	133	127	-6	-4.51
Wyalkatchem (S)	676	645	-31	-4.59
Trayning (S)	536	511	-25	-4.66
Brookton (S)	1,069	1,019	-50	-4.68
Carnamah (S)	1,131	1,078	-53	-4.69
Leonora (S)	2,649	2,518	-131	-4.95
Cue (S)	643	610	-33	-5.13
Kellerberrin (S)	1,395	1,317	-78	-5.59
Nungarin (S)	333	313	-20	-6.01
Roebourne (S)	15,909	14,914	-995	-6.25
East Pilbara (S)	10,037	9,407	-630	-6.28
Dowerin (S)	928	869	-59	-6.36
Mullewa (S)	1,463	1,348	-115	-7.86
Ashburton (S)	7,960	7,283	-677	-8.51
Westonia (S)	298	271	-27	-9.06
Menzies (S)	274	238	-36	-13.14
<i>Total</i>	451,811	455,152	3,341	0.74
<b>TOTAL WESTERN AUSTRALIA</b>	<b>1,657,350</b>	<b>1,676,420</b>	<b>19,070</b>	<b>1.15</b>

## Vital Statistics

### Registration

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.

### Births

Although there were more males than females born in each of the years for which data are included in Table 5.7, 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.

**TABLE 5.7 - BIRTHS REGISTERED BY AGE OF MOTHER (a)**  
Reference: Unpublished table: BTHR0007

<i>Age of mother (years)</i>	1991	1992	1993
<b>TOTAL BIRTHS (b)</b>			
Under 20	1,540	1,539	1,451
20 - 24	5,362	5,134	5,005
25 - 29	9,129	8,681	8,494
30 - 34	6,790	7,020	7,300
35 - 39	2,217	2,270	2,444
40 - 44	332	364	349
45 and over	8	13	8
Not stated	39	52	30
<b>Total</b>	<b>25,417</b>	<b>25,073</b>	<b>25,081</b>
Males	12,959	12,879	12,925
Females	12,458	12,194	12,156
Sex ratio (c)	104.0	105.6	106.3
Crude birth rate (d)	15.5	15.1	15.0
<b>EX-NUPTIAL BIRTHS</b>			
Under 20	1,332	1,341	1,322
20 - 24	2,301	2,347	2,440
25 - 29	1,513	1,514	1,668
30 - 34	834	961	1,041
35 - 39	345	384	411
40 - 44	61	79	80
45 and over	3	1	3
Not stated	33	46	26
<b>Total</b>	<b>6,422</b>	<b>6,673</b>	<b>6,991</b>

(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 calendar year per 1,000 of mean population.



*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.

The proportion of ex-nuptial births to total births has increased from 25.3 per cent in 1991 to 27.9 per cent in 1993. In 1993 mothers under the age of 25 accounted for 58.3 per cent of ex-nuptial births and 25.7 per cent of total births. For mothers aged less than 20 years, 91.1 per cent of births were ex-nuptial.

Table 5.8 provides comparative data for Western Australia and Australia on number of births, birth rates and reproduction rates for 1993. The figures show that the crude birth rates (the number of total births per thousand mean resident population) for Western Australia and Australia are 15.0 and 14.7 respectively. The proportion of ex-nuptial births to total births in Western Australia is higher (27.9 per cent) than the figure for Australia (24.9 per cent).

**TABLE 5.8 - BIRTHS: WESTERN AUSTRALIA IN RELATION TO AUSTRALIA, 1993**

Reference: Catalogue No. 3301.0

	<i>Western Australia</i>	<i>Australia</i>
Number of births—		
Nuptial	18,090	195,355
Ex-nuptial	6,991	64,874
<b>Total</b>	<b>25,081</b>	<b>260,229</b>
Crude birth rate (a)	15.0	14.7
Age-specific birth rate (b)—		
15 – 19	23.7	20.9
20 – 24	74.8	71.1
25 – 29	132.0	130.0
30 – 34	104.3	105.5
35 – 39	35.9	39.0
40 – 44	5.4	6.3
45 – 49	0.1	0.2
Female gross reproduction rate (c)	0.910	0.908
Female net reproduction rate (d)	0.902	0.896

(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) Obtained by multiplying the female age-specific birth rates by the proportion of survivors of corresponding ages in a life table, adding the products and dividing by 1,000. Because of the method of calculation, these figures are subject to annual fluctuations which may not be indicative of a longer term trend.

**Deaths**

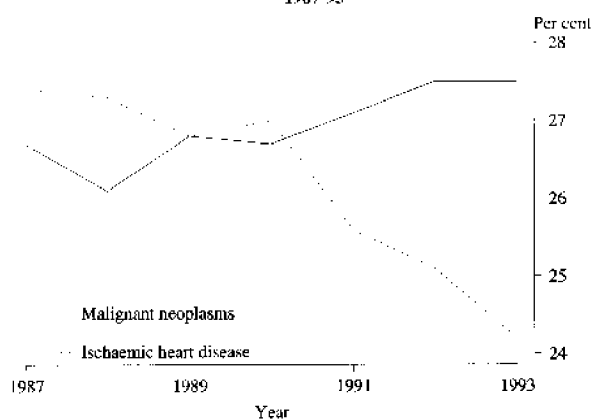
*Cause of death*

In 1993:

- 27.2 per cent of deaths were from malignant neoplasms (cancers) of which cancer of the digestive organs and peritoneum was the major cause;

- 2,494 persons (or 24.2 per cent of total deaths), died of ischaemic heart disease in Western Australia; and
- 973 persons died of cerebrovascular disease, representing 9.4 per cent of total deaths in Western Australia.

**DIAGRAM 5.1**  
**DEATHS FROM MALIGNANT NEOPLASMS AND ISCHAEMIC HEART DISEASE**  
**1987-93**



Source: Catalogue No. 3303.0

**TABLE 5.9 – DEATHS: WESTERN AUSTRALIA**  
**IN RELATION TO AUSTRALIA, 1993**  
Reference: Catalogue No. 3302.0

	Western Australia	Australia
Number of deaths	10,316	121,599
Crude death rate (a)	6.2	6.9
Infant death rate (b)	5.9	6.1
Age-specific death rate (years) (c)—		
Under 1 year	5.89	6.03
1 – 4	0.34	0.39
5 – 9	0.18	0.16
10 – 14	0.18	0.19
15 – 19	0.61	0.57
20 – 24	0.84	0.79
25 – 29	0.84	0.80
30 – 34	0.98	0.95
35 – 39	1.29	1.18
40 – 44	1.27	1.49
45 – 49	2.13	2.30
50 – 54	3.64	3.83
55 – 59	6.19	6.56
60 – 64	10.63	10.99
65 – 69	16.90	17.73
70 – 74	28.19	28.57
75 – 79	48.04	47.19
80 – 84	78.23	77.66
85 and over	150.96	149.92

(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.

**TABLE 5.10 – PRINCIPAL CAUSES OF DEATH, 1993 (a)**  
Reference: Catalogue No. 3303.0

Cause of death and International number (b)	Western Australia			Australia		
	Persons	Per cent of all deaths	Rate (c)	Persons	Per cent of all deaths	Rate (c)
Infectious and parasitic diseases (000-139)	78	0.8	4.7	933	0.8	5.3
Neoplasms (140-239)—						
Malignant (140-208)—						
Digestive organs and peritoneum (150-159)	738	7.2	44.0	9,040	7.4	51.2
Trachea, bronchus and lung (162)	577	5.6	34.4	6,380	5.2	36.1
Genitourinary organs (179-189)	463	4.5	27.6	5,449	4.5	30.8
Other	1,025	9.9	61.1	11,822	9.7	66.9
Benign, other and unspecified (210-239)	38	0.4	2.3	485	0.4	2.7
Endocrine, nutritional and metabolic diseases (240-279)	308	3.0	18.4	3,892	3.2	22.0
Diseases of blood and blood-forming organs (280-289)	22	0.2	1.3	394	0.3	2.2
Mental disorders (290-319)	190	1.8	11.3	2,344	1.9	13.3
Diseases of the nervous system and sense organs (320-389)	299	2.9	17.8	2,794	2.3	15.8
Diseases of the circulatory system (390-459)—						
Ischaemic heart disease (410-414)	2,494	24.2	148.7	29,759	24.5	168.5
Cerebrovascular disease (430-438)	973	9.4	58.0	12,137	10.0	68.7
Other	890	8.6	53.1	11,340	9.3	64.2
Diseases of the respiratory system (460-519)—						
Chronic obstructive pulmonary disease (490-496)	518	5.0	30.9	6,338	5.2	35.9
Other	283	2.7	16.9	2,907	2.4	16.5
Diseases of the digestive system (520-579)	311	3.0	18.6	3,759	3.1	21.3
Diseases of the genitourinary system (580-629)	146	1.4	8.7	1,924	1.6	10.9
Diseases of the skin and subcutaneous tissue (680-709)	21	0.2	1.3	175	0.1	1.0
Diseases of the musculoskeletal system and connective tissue (710-739)	58	0.6	3.5	681	0.6	3.9
Congenital anomalies (740-759)	61	0.6	3.6	739	0.6	4.2
Certain conditions originating in the perinatal period (760-779)	53	0.5	3.2	696	0.6	3.9
Symptoms, signs and ill-defined conditions (780-799)	47	0.5	2.8	571	0.5	3.2
Accidents, poisonings and violence (800-999)—						
Motor vehicle traffic accidents (810-819)	213	2.1	12.7	1,956	1.6	11.1
Suicide and self inflicted injury (950-959)	216	2.1	12.9	2,081	1.7	11.8
Other	294	2.8	17.5	2,998	2.5	17.0
<b>All causes</b>	<b>10,316</b>	<b>100.0</b>	<b>615.1</b>	<b>121,594</b>	<b>100.0</b>	<b>688.4</b>

(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.

*Infant and 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*. *Infant deaths* are the deaths of all live-born children who died when less than one year old.

**TABLE 5.11 – PERINATAL DEATHS (a): NUMBER AND RATES, 1993**

Reference: Unpublished tables used for preparation of Catalogue No. 3304.0

	<i>Western Australia</i>	
	<i>Number</i>	<i>Rate</i>
Fetal deaths	162	6.5
Neonatal deaths—		
Under 1 day	50	2.0
1 day and under 7 days	16	0.6
7 days and under 28 days	14	0.6
<i>Total</i>	80	3.2
<b>Total perinatal deaths (b)</b>	<b>242</b>	<b>9.6</b>

(a) The statistical definition of perinatal deaths in Western Australia was amended in the Registration of Births, Deaths and Marriages Amendment Regulations of December 1990 and now includes all fetuses and infants delivered weighing at least 400 grams or, when birthweight is unavailable, the corresponding age of 20 weeks gestation. (b) The rates for fetal deaths and perinatal deaths are calculated per thousand live births only.

**TABLE 5.12 – INFANT DEATHS: CAUSES OF DEATH, 1993 (a)**

Reference: Catalogue No. 3312.5

<i>Causes of death and International number (b)</i>	<i>Western Australia</i>	
	<i>Number</i>	<i>Per cent of all infant deaths</i>
Causes mainly of prenatal and natal origin (740-779)—		
Congenital anomalies (740-759)	29	20.3
Immaturity (765)	18	12.6
Birth trauma (767)	2	1.4
Hypoxia and birth asphyxia (768)	4	2.8
Respiratory distress syndrome (769)	7	4.9
Other respiratory conditions (770)	9	6.3
Infections specific to the perinatal period (771)	2	1.4
Fetal and neonatal haemorrhage (772)	2	1.4
Other	12	8.4
<i>Total</i>	85	59.4
Causes mainly of postnatal origin—		
Sudden death, cause unknown (798)	33	23.1
All other causes	25	17.5
<i>Total</i>	58	40.6
<b>All causes</b>	<b>143</b>	<b>100.0</b>

(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 1993 it had risen to 75.05 and 81.15 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.

**TABLE 5.13 – COMPLETE EXPECTATION OF LIFE AT SELECTED AGES (a), WESTERN AUSTRALIA (years)**

Age	Expectation of life (b)		
	1991	1992 r	1993
Birth—			
Males	75.00	75.24	75.05
Females	80.87	80.90	81.15
1 year—			
Males	74.59	74.81	74.60
Females	80.40	80.41	80.51
20 years—			
Males	56.03	56.37	56.12
Females	61.71	61.78	61.81
40 years—			
Males	37.26	37.58	37.42
Females	42.20	42.42	42.33
60 years—			
Males	19.56	19.65	19.62
Females	23.74	23.97	23.79
70 years—			
Males	12.37	12.43	12.38
Females	15.66	15.83	15.60
80 years—			
Males	6.91	7.10	7.04
Females	8.98	9.11	8.82

(a) Based on annual life tables calculated by the Australian Statistician. These figures are based on 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**

During 1993:

- 4,959 marriages were performed by ministers of religion, (representing 47.8 per cent of all marriages);
- 5,423 marriages (52.2 per cent) were performed by registered civil celebrants;
- Catholic marriages were the largest denomination, with a total of 1,732 (16.7 per cent), followed by Anglican marriages with 1,239 (11.9 per cent) of all marriages; and

- The median age of brides and bridegrooms for first marriages has risen over the past five years.

**TABLE 5.14 – MARRIAGES: CATEGORY OF CELEBRANT, 1993**  
Reference: Catalogue No. 3306.0

Category of celebrant	Western Australia		Australia	
	Number	Per cent of total	Number	Per cent of total
Ministers of religion of recognised denominations (a)—				
Catholic Church	1,732	16.7	22,625	20.0
Anglican Church of Australia	1,239	11.9	15,190	13.4
Uniting Churches of Australia (b)	699	6.7	10,577	9.3
Presbyterian Church of Australia (b)	41	0.4	1,706	1.5
Orthodox Churches (b)	84	0.8	2,973	2.6
Baptist Union of Australia (b)	175	1.7	2,134	1.9
Lutheran Churches (b)	59	0.6	1,271	1.1
Churches of Christ in Australia (b)	182	1.8	1,234	1.1
Other Denominations	748	7.2	7,863	6.9
<b>Total</b>	<b>4,959</b>	<b>47.8</b>	<b>65,573</b>	<b>57.9</b>
Civil celebrants—				
Official registrars	924	8.9	9,563	8.4
Other civil celebrants	4,499	43.3	38,119	33.7
<b>Total</b>	<b>5,423</b>	<b>52.2</b>	<b>47,682</b>	<b>42.1</b>
<b>All celebrants</b>	<b>10,382</b>	<b>100.0</b>	<b>113,255</b>	<b>100.0</b>

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

**TABLE 5.15 – MEDIAN AGE OF BRIDEGROOMS AND BRIDES (a)**  
(years)

Reference: Catalogue No. 3306.0

Marital status	1989	1990	1991	1992	1993
Bridegrooms—					
Never married	26.3	26.4	26.8	27.0	27.1
Widowed	61.6	61.0	62.8	59.4	59.8
Divorced	39.9	39.6	39.5	40.7	40.3
<b>All bridegrooms</b>	<b>28.2</b>	<b>28.3</b>	<b>28.6</b>	<b>29.1</b>	<b>29.3</b>
Brides—					
Never married	24.1	24.1	24.4	24.7	24.8
Widowed	54.2	53.6	52.0	52.6	52.0
Divorced	35.9	36.0	36.3	37.0	37.4
<b>All brides</b>	<b>25.8</b>	<b>25.8</b>	<b>26.1</b>	<b>26.5</b>	<b>26.5</b>

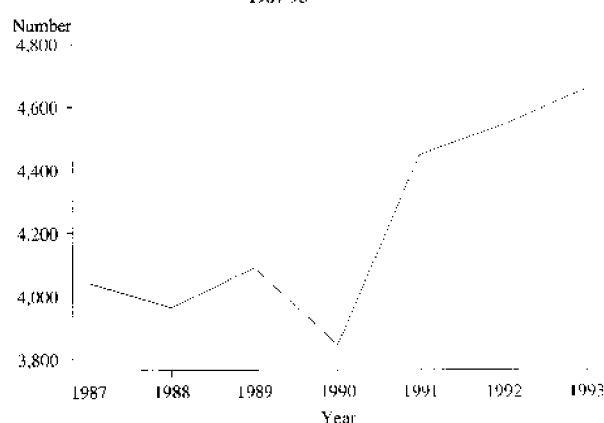
(a) The median age is that age which divides the reference population into two halves, one half being below the median age and one half above.

## Divorces

In 1993:

- there were 4,654 divorces, an increase of 114 (2.5 per cent) on the number of divorces recorded in 1992;
- almost one half of marriage dissolutions occurred when the duration of the marriage was nine years or less; and
- since 1987 the total number of divorces has fluctuated but since 1990 there has been an increase in the number of divorces in each successive calendar year.

**DIAGRAM 5.2**  
**DIVORCES GRANTED**  
**1987-93**



Source: Catalogue No. 3307.0

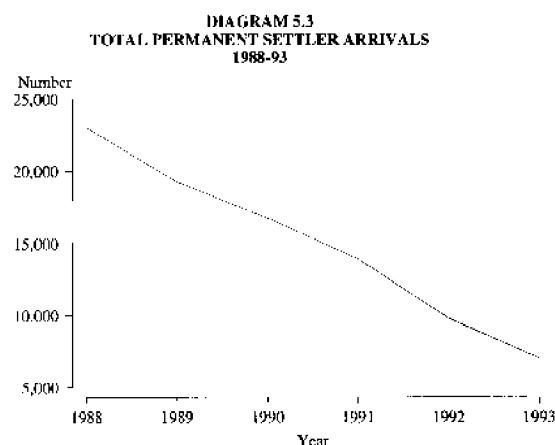
**TABLE 5.16 – DISSOLUTIONS OF MARRIAGE, 1993**  
Reference: Catalogue No. 3307.0 and unpublished table DIVR0013

Duration (years)	Western Australia		Australia	
	Number	Per cent of total	Number	Per cent of total
Under 5	743	16.0	9,916	20.5
5 – 9	1,262	27.1	12,723	26.3
10 – 14	940	20.2	8,766	18.1
15 – 19	626	13.5	6,230	12.9
20 – 24	529	11.4	5,344	11.1
25 – 29	315	6.8	3,003	6.2
30 and over	239	5.1	2,342	4.8
<b>Total (a)</b>	<b>4,654</b>	<b>100.0</b>	<b>48,324</b>	<b>100.0</b>

(a) Includes duration of marriage not stated.

**Overseas Migration** 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 3,650 in 1992 to 3,500 in 1993 (Table 5.17).

In 1993 there were 7,030 permanent settler arrivals - a decrease of 2,790 (28.4 per cent), compared with 1992. The main sources of permanent settlers were the United Kingdom and Ireland (2,310), New Zealand (800), and Viet Nam (390). The United Kingdom and Ireland and New Zealand accounted for 44.3 per cent of all permanent arrivals. There has been a declining trend in the number of permanent settler arrivals to Western Australia. There were 23,050 in 1988, 19,290 in 1989, 16,780 in 1990, 13,930 in 1991, 9,820 in 1992, and 7,030 in 1993. Diagram 5.3 illustrates this trend.



**TABLE 5.17 - PERMANENT DEPARTURES BY CATEGORY**  
Reference: Catalogue No. 3404.0

Period	Former settlers	Australian residents	Total
ANNUAL AVERAGES			
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 TOTALS			
1991	2,660	1,630	4,300
1992	2,060	1,590	3,650
1993	1,900	1,600	3,500



**TABLE 5.18 – PERMANENT (SETTLER) ARRIVALS  
BY SELECTED COUNTRY OF BIRTH 1993(a)**  
Reference: Unpublished table PMTR 0018

<i>Country of birth</i>	<i>Australia</i>	<i>Western Australia</i>
<i>Oceania and Antarctica</i>	9,280	860
New Zealand	6,840	800
Other	2,440	60
<i>Europe and the former USSR</i>	19,570	3,120
Germany	610	70
Netherlands	220	30
Poland	670	60
Portugal	110	20
Romania	340	30
Switzerland	190	40
United Kingdom & Ireland	9,240	2,310
Former Yugoslav Republics	4,600	350
Other	3,590	210
<i>Middle East and North Africa</i>	4,340	150
Egypt	480	20
Iran	300	20
Lebanon	1,030	20
Other	2,530	90
<i>Southeast Asia</i>	13,370	1,460
Brunei	40	20
Burma	240	130
Indonesia	820	160
Malaysia	1,310	350
Philippines	3,740	200
Singapore	420	140
Thailand	660	70
Viet Nam	5,660	390
Other	480	—
<i>Northeast Asia</i>	8,590	360
China	2,580	110
Hong Kong	3,830	130
Taiwan	910	50
Other	1,270	70
<i>Southern Asia</i>	4,900	330
Afghanistan	690	50
India	2,490	190
Pakistan	370	20
Sri Lanka	1,150	60
Other	200	10
<i>Northern America</i>	1,900	220
Canada	630	70
United States of America	1,270	150
Other	—	—
<i>South &amp; Central America &amp; Caribbean</i>	1,180	90
Chile	220	10
El Salvador	200	30
Other	760	50
<i>Africa (excluding North Africa)</i>	2,480	430
Kenya	80	20
South Africa	990	240
Zimbabwe	140	30
Other	1,270	140
<b>Total</b>	<b>65,680</b>	<b>7,030</b>

(a) Figures are rounded to the nearest ten.

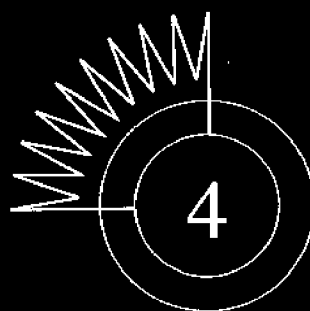
### References

- 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)  
*Deaths, Western Australia* (3312.5)  
*Divorces, Australia* (3307.0)  
*Demography, Western Australia* (3311.5)  
*Resident Population by Age and Sex in Statistical Local Areas, Western Australia* (3203.5)  
*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)

● the

FAMILY

view



## Chapter 4

# THE FAMILY

---

Contents	Page
Definition	71
Marital Status	72
Households	74
Step-families	75
Parents and work commitments	76
<b>Community Services Industry Study</b>	<b>77</b>
Department for Community Development	79
Family Helpline	80
Parent Help Centre	80
Best Start	80
Aboriginal Family Information Service	81
Family Crisis Program	81
Protection and Care of Children	81
Early Education Program	82
Family and Community Support	82
References	82
<b>Western Australian Year of the Family</b>	<b>83</b>
<b>Abuse in Families Campaign</b>	<b>85</b>

## Chapter 4

# THE FAMILY

---

In 1994 Western Australia, along with the rest of the world, celebrated the importance of families through the *International Year of the Family*.

The family unit is the most significant social structure in our society. Families are where children grow up and learn about social, cultural and spiritual values. It is also where adults find support and understanding. Strong and caring families are the basis of a healthy community. In 1992, 88 per cent of Western Australians lived in a total of 459,000 families.

### Definition

The Australian Bureau of Statistics' definition of a family is 'two or more people living in the same household who are related to each other by blood, marriage, de facto partnering, fostering or adoption'.

**TABLE 4.1 – PERSONS: LIVING ARRANGEMENTS**

Reference: Catalogue No. 4418.0

<i>Living arrangements</i>	<i>Per cent</i>	<i>'000</i>
<i>In a family—</i>		
Partner in couple	48.9	815.7
Lone parent	3.7	61.0
Child—		
Dependent	27.9	466.6
Non-dependent	6.5	108.2
Other family person	1.3	22.3
<i>Total in families</i>	88.3	1,473.6
<i>Not in a family—</i>		
Unrelated individual in family household	0.6	9.8
In a group household	3.3	55.6
Lone person	7.8	130.4
<i>Total not in families</i>	11.7	195.8
<b>Total</b>	<b>100.0</b>	<b>1,669.3</b>

TABLE 4.2 – FAMILIES: SELECTED FAMILY TYPE AND MARITAL STATUS OF COUPLE

Reference: Catalogue No. 4418.0

<i>Family type</i>	<i>Per cent</i>	<i>'000</i>
<i>Couple, no children—</i>		
Defacto married	5.5	25.1
Registered married	28.4	130.2
<i>Total</i>	33.9	155.3
<i>Couple, with children—</i>		
Defacto married	3.5	16.0
Registered married	48.2	221.3
<i>Total</i>	51.7	239.7
<i>One parent families</i>	12.9	59.2
<i>Other families</i>	*1.6	*7.5
<b>All families</b>	<b>100.0</b>	<b>459.2</b>

\* Relative standard error greater than 25 and up to 50 per cent

**Marital Status**

Almost 400,000 families (86 per cent) were couple families, that is, they were headed by a married couple. In almost 9 out of 10 families, these couples were registered married rather than de facto married.

TABLE 4.3 – SELECTED FAMILIES AND FAMILY TYPES: SUMMARY CHARACTERISTICS

Reference: Catalogue No. 4418.0

<i>Selected family types</i>	<i>Average number</i>		<i>Per cent</i>		<i>Total families '000</i>
	<i>Persons in family</i>	<i>Children</i>	<i>Families with lone ancestor(a)</i>	<i>More than one family in household</i>	
Step/blended	4.0	2.0	**	**2.8	18.4
Lone mother	2.7	1.6	*3.7	*7.0	48.6
Lone father	2.3	1.3	**	**7.6	10.6
Capital city	3.2	1.2	*1.5	2.2	34.1
Rest of state	3.2	1.3	**0.7	3.5	125.2
Non-English speaking country(a) family	3.4	1.5	**1.4	3.9	94.2
<b>All families</b>	<b>3.2</b>	<b>1.3</b>	<b>*1.3</b>	<b>2.7</b>	<b>459.2</b>

(a) Families where either member of couple or lone parent was from a non-English speaking country.

\* Relative standard error greater than 25 and up to 50 per cent.

\*\* Relative standard error over 50 per cent. Figures should be used with caution. If appears in place of an estimate, the estimate is zero.

**TABLE 4.4 – HOUSEHOLDS: GROWTH IN HOUSEHOLD TYPES  
1982-1992**  
Reference: Catalogue No. 4418.0

Household type	1982	1992	1982-1992
	'000	'000	Per cent change
<i>Family households—</i>			
1 family	341.2	447.6	31.2
2 or more families	**3.3	5.7	72.7
<i>All family households</i>	344.5	453.3	31.6
<i>Non-family households—</i>			
Group	14.3	24.2	69.2
Lone person	94.9	130.4	37.4
<i>All non-family households</i>	109.2	154.6	41.6
<b>All households</b>	<b>453.7</b>	<b>607.9</b>	<b>34.0</b>

\*\* Relative standard error of greater than 50 per cent. Figures should be used with caution. If appears in place of an estimate, the estimate is zero.

De facto marriages were twice as prevalent in couple families without children (16 per cent) than in those with children (7 per cent). Almost half (816,000) of all Western Australians were living with a partner. De facto marriages are now the basis of 9 per cent of families, consisting of 25,000 de facto couples without children and 16,000 with children.

Around 60,000 families were one parent families, and 18,000 couple families were step or blended families. A blended family is defined as a couple family containing two or more children, of whom at least one is the natural, adopted or foster child of both members of the couple, and at least one is the step child of at least one member of the couple.

Almost three-quarters of Western Australia's families lived in the capital city area and in 94,000 families at least one parent/partner was born in a non-English speaking country. In 1991, there were 6,800 families where at least one parent/partner was of Aboriginal or Torres Strait Islander origin.

Family life in Western Australia is changing. The emergence of alternative family forms through de facto living, divorce and remarriage has meant that the traditional image of a married couple 'heading' the family unit is less common now than in the past.

Change does not necessarily reflect instability. While considerable diversity in family forms has developed over the past three decades it remains the case that the predominant family type in Western Australia is a couple with children (52 per cent of families).

## Households

Households may consist of one person living alone, or a group of related or unrelated people. The population living in communal institutions such as boarding schools, hospitals and retirement villages are excluded from this definition.

In 1992, the number of households in Western Australia was 608,000 (an increase of 34 per cent since 1982), with an average household size of 2.7 people. Three-quarters of households were family households but non-family households grew at a faster rate than family households over this period (42 per cent growth compared with 32 per cent growth).

While the number of households has grown, there has been a decline in the number of people living in each household. Between 1982 and 1992, the average household size fell from 2.8 to 2.7 people. The average size of family households in Western Australia remained stable at 3.3 people.

One in five households (21 per cent) in Western Australia were lone person households, an increase of 37 per cent from 1982 (95,000) to 1992 (130,000). The growth in the number of lone person households is due to several factors. There has been an increase in the number of people who never marry, as well as an increase in the number of lone person households formed through separation and divorce. However, the single most influential factor is the ageing of the population, where different

**TABLE 4.5 - CHILDREN(a) AGED 0 TO 24 YEARS: PROPORTION LIVING WITH NATURAL PARENTS(b), STEP-PARENT(S) OR GUARDIAN BY AGE AND FAMILY TYPE (Per Cent)**  
Reference: Catalogue No. 4418.0

Family type	Age					Total
	0-4	5-9	10-14	15-19	20-24	
<i>In couple families—</i>						
Both natural parents	89.6	82.7	77.4	72.2	74.6	80.1
One natural parent, one step-parent	*1.3	*3.4	6.5	*6.9	*6.5	4.5
Other guardian	**0.2	**0.4	**0.9	**1.0	*0.5	*0.6
<i>In one parent families—</i>						
Natural mother	7.9	12.5	13.3	15.2	*11.4	12.3
Natural father/ other guardian	**1.0	**1.0	*1.9	*4.8	*7.1	2.5
<b>All children aged 0 to 24</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Number ('000)	129.3	129.7	124.7	103.2	57.9	560.2

(a) The Family Survey defines persons as a children if they are living with at least one parent and do not have a partner or child of their own. (b) Includes parents of adopted or foster children.

\* Relative standard error greater than 25 and up to 50 per cent.

\*\* Relative standard error over 50 per cent. Figures should be used with caution. If it appears in place of an estimate, this estimate is zero.



household types have formed through the death of a spouse or de facto partner.

The growth in de facto couple families can be attributed in part to the higher prevalence of de facto living before registered marriage (44 per cent of all Western Australian couples who married in 1975 or later) across all age groups and for both first and later registered marriages. Of marriages registered in 1992, 49 per cent were preceded by a period of de facto living, compared with 25 per cent in 1975.

Eighty per cent of Western Australian children aged 0 to 24 lived with both their natural parents. Some 5 per cent of children aged 24 and under lived with one natural parent and a step-parent. Twelve per cent of children of this age lived in a lone mother family and 3 per cent lived in a lone father family.

Older children were more likely than younger children to be living with a step-parent or with a lone parent than younger children, reflecting the effects of marriage dissolution and remarriages on family structure. Of children who lived with parents, nine out of ten 0-4 year-olds lived with both natural parents, falling to 72 per cent of 15-19 year-olds before rising slightly to 75 per cent of 20-24 year-olds.

### **Step-families**

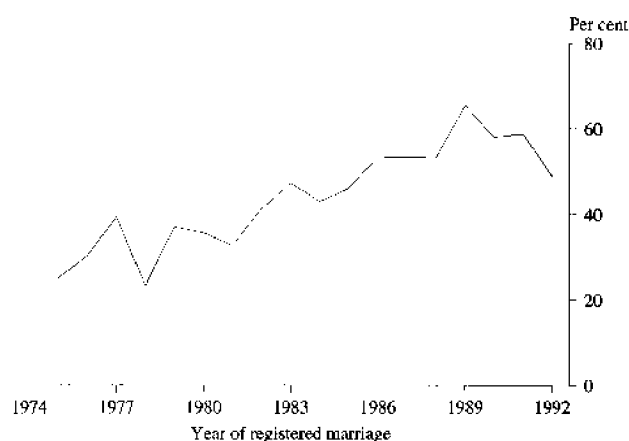
Step-families are created when at least one partner brings children from a previous marriage to a new marriage. In 1992, there were 12,000 step-families, which contained a total of almost 18,000 children. This family type is becoming more common as divorce rates continue to increase, as are blended families, which are formed when the couple in a step-family subsequently have children of their own.

In 1992, there were almost 6,000 blended families in Western Australia containing a total of 17,000 children. step and blended families comprised a combined 5 per cent of all couple families.

### **Parents and work commitments**

The economic well-being of families, and individual family members, may be influenced by family structure. For couple families, the support that spouses are able to provide each other and the potential for two partners or parents to enter into paid work may have a positive effect on the employment experiences and subsequent economic well-being of all family members. Conversely, the capacity for lone parents to participate in the labour force may be limited by the absence of a partner who can provide support with child care and other responsibilities. In 1992, 41 per cent of people aged 15 years and over in one parent families indicated that they experienced difficulty paying bills and making loan repayments compared with 33 per cent of people in the same age group in couple families. People who were not living in families were the least likely to experience this kind of difficulty (32 per cent).

PROPORTION OF REGISTERED MARRIAGES(A) PRECEDED BY  
A DEFACTO MARRIAGE



(a) Marriages from 1975 onwards.  
Source: Catalogue No. 4418.0

Parents, in particular mothers, are increasingly more likely to be in the labour force than in past decades. This, combined with a rising proportion of one parent families in Western Australia, means that parents are more likely to be trying to balance work and family caring commitments. In 1992, there were 234,000 Western Australians who were employed and had children aged 11 years and under living with them. Over a quarter (27 per cent) of these parents indicated that they had difficulty managing work and child care. Employed parents were more likely to experience difficulty if they had very young children. While a third of employed parents whose youngest child was aged 0-2 years

TABLE 4.6 - PERSONS AGED 15 YEARS AND OVER WHO  
RECEIVED SUPPORT FROM FAMILY MEMBERS

Reference: Catalogue No. 4418.0

Type of support	'000
Help to look for work	12.7
Help to get a job	19.0
Income support (a)	120.7
Monetary inheritances (a)	41.6
Home/land purchasing (b)	81.9
Free accommodation (c)	132.4
Accommodation inheritances (a)	32.5
Personal care/home help	40.7

(a) From non-usually resident family members only. (b) Persons aged 15 to 59 only. (c) Includes persons living in the same household as their parent(s) who were not paying board/rent.

**Community Services Industry Study  
Contribution by the Department for Community  
Development**

A major study into the community services industry in Western Australia was commissioned by the Minister for Community Development, the Family and Seniors, the Hon Roger Nicholls MLA, in 1993 and completed in 1994.

The purpose of the study was to conduct a stocktake of resources and services provided within the community services sector. The community services industry is distinguished from other industry groups in that its workers are not motivated by profit but rather their philosophies are based on assisting fellow community members.

The study showed that the Department of Community Development, spending a total of nearly \$70 million a year on direct services and capital, was the largest single organisation in the industry. Through the Department nearly \$40 million was directed to non-government and local government organisations. The major churches have traditionally played a key role in the industry while by contrast local government authorities are relative newcomers.

Organisations vary greatly in size. For example, 41 per cent have an income of less than \$50,000 per year and 59 per cent employ five workers or less. At the other end of the scale three per cent of organisations have more than 30 paid workers and three per cent have income exceeding one million dollars a year.

A significant aspect of the study was the contribution of volunteers to the industry. Over 15,000 instances of volunteering and the work of 644 foster families was valued at \$21.7 million and \$4.6 million respectively.

The results of the study are being used to improve efficiency, effectiveness and accountability within the areas of the industry operating via the Department for Community Development. Priorities include improved communication and planning of services between the Department and non-government organisations and the introduction of funding for specific services provided by non-government organisations.

**TABLE 4.7 – PERSONS WHO PROVIDED INFORMAL  
CHILDCARE TO NON-USUAL RESIDENT FAMILY MEMBERS:  
SELECTED CHARACTERISTICS BY WHETHER PROVIDED  
WEEKLY CARE**

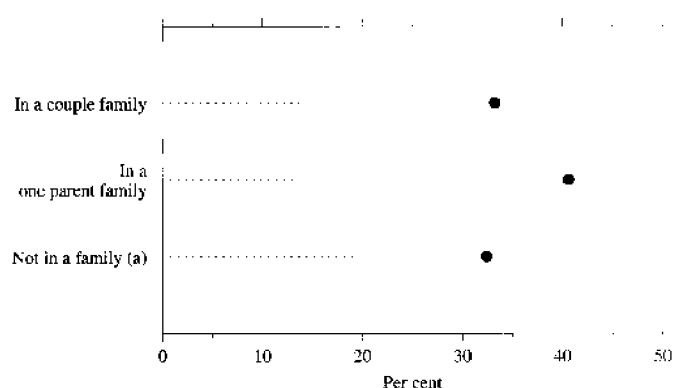
('000)

Reference: Catalogue 4418.0

	<i>Provided care</i>		<i>Total</i>
	<i>Weekly</i>	<i>Less than weekly</i>	
Males	11.7	49.2	60.9
Females	23.2	83.0	106.2
Grandparent	18.5	60.0	78.5
Other relatives	16.4	72.2	88.6
<b>Total</b>	<b>34.9</b>	<b>132.2</b>	<b>167.1</b>

experienced difficulty, this proportion was 26 per cent or less for those with older children.

**PERSONS AGED 15 YEARS AND OVER: PROPORTION EXPERIENCING  
DIFFICULTY PAYING BILLS AND MAKING LOAN REPAYMENTS BY LIVING  
ARRANGEMENTS, 1992**



(a) Includes unrelated individuals living in family households.

Source: Catalogue No. 4418.0

The family is a source of a wide range of support. As well as personal and emotional support, family members may also give and receive different forms of help, both within and across households. Such support may include help to find work, help to get a job, free accommodation, education expenses, formal and informal child care, with personal care and home help, financial assistance, loans, and inheritances of money or a home or land.

In 1992, 121,000 Western Australians received income support from a family member in the previous 12 months. This included regular financial assistance, sums of money, other gifts, food or help to pay bills or make loan repayments. Two-thirds of family income support was from parents. Close to 82,000 received help

from a relative to purchase land or a home and 132,000 received free accommodation (most commonly young people living with their parents). Close to 32,000 Western Australians received help from a relative to look for work or to get a job, and 41,000 Western Australians who were elderly or who had a disability or long-term illness received help with personal care and home help from a family member.

In 1992, 167,000 Western Australians provided informal child support to family members who they did not live with. In one in five cases this child care was provided on a weekly basis. Almost two-thirds (64 per cent) of relatives who provided informal child care were females and almost half were grandparents (47 per cent). Grandparents who provided informal child care were more likely to provide it on a weekly basis (24 per cent) than other relatives (19 per cent).

### **Department for Community Development**

In Western Australia the Department for Community Development plays a major role in promoting responsibility and growth in family and community life. It helps families take on their roles and responsibilities and function independently from government. An informed, confident family will know when to seek outside support and will be able to access the range of services that are available.

With an emphasis on prevention and early intervention, the Department is moving away from the "problem focus" so long associated with the community services industry. The preventive model ensures that services and information are readily available and accessible so that families can avoid being at risk of a serious crisis. Seeking information and guidance is seen as a normal part of the life cycle of a family and there is no reason why reaching out for assistance should be stigmatised.

In order to better understand the critical factors relating to parent and family support services, research was undertaken by the Department in 1993-94. Results showed that many of the problems families face are similar across the community. It demonstrated the close links between the role of the family and the community and indicated that many people believe a community that values families is one where families interact and support one another. The research also found strong support for family values.

Not all families are safe and child protection is a major mandate of the Department. It also carries the responsibility for addressing issues relating to families where members may be harmed and has an important role in the prevention of family violence. Whenever possible, assistance is aimed towards prevention and family support but the safety of the child always remains a priority. A strong focus is to encourage families to seek early assistance before issues become too complex or dangerous.

The Department is the largest single organisation in the community services industry in Western Australia. The services it provides, complemented by a range of services provided by non government organisations which are funded by the Department, and services provided by other groups such as the major churches add up to an enormous wealth of services that parents and individuals can tap into. Outlined below are details of just a few of these services provided by the Department.

### **Family Helpline**

Being in a family affects everything a person does and good family relationships are important. Sometimes things may happen that are difficult to deal with. When everything gets to be too much or things go wrong, families may need help.

The Family Helpline is a 24 hour telephone counselling and information service for those times before family situations get too critical. The Helpline has a metropolitan number (221 2000) and a 008 number for country families (008 643 000).

### **Parent Help Centre**

The Parent Help Centre was established 17 years ago and provides a range of services to parents who are experiencing normal parenting difficulties. A telephone counselling service is available seven days a week, 24 hours a day while the centre itself is open six days a week. The centre runs parenting skills groups, early education programs (to help parents prepare their children for school) and intensive parenting programs specifically for families who are at risk of abusing their children.

The centre also has an information and counselling service, called the Parent Information and Resource Service (PIRS), as a first stop service on all aspects relevant to parent education and operates a children's education and activity program for families with limited social skills or who are isolated or have children with behaviour problems.

The majority of contact with the centre is by telephone and in 1993-94 over 60 per cent of contact were made this way. The major reason for contacting the Centre is to gain skills and advice on managing child behaviour. Nearly 75 per cent of contacts each year are made by mothers although contacts by fathers are increasing.

As a result of publicity, there has been a steady rise in the number of new clients contacting the Centre over the past five years.

### **Best Start**

Best Start is a new project aimed at improving the well being of young children under the age of five. An early intervention approach, it is a cooperative initiative between the departments of Community Development, Health and Education. The program will be piloted during 1994-95 and will target children in six communities - Port Hedland, Carnarvon, Roebourne, Jigalong, Fitzroy Crossing and Meekatharra/Wiluna.

**Abuse in Families Campaign**  
**Contribution by the Department for Community Development**

In line with the Department for Community Development's commitment to prevention and early intervention, a major campaign aimed at raising awareness and reducing abuse and violence in families commenced during the year.

The "Abuse in Families" campaign was launched by the Minister for Community Development; The Family, the Hon Roger Nicholls MLA, in April 1994.

It is a long term community education campaign developed around a range of strategies including advertising, promotional material and events, skills development programs and a 24 hour telephone helpline.

In addition, district offices of the Department located across the State promoted the campaign at the local level and encouraged involvement of their local communities.

Evaluation of the campaign's first stage of advertising, the "Sounds of Silence" television advertisements, showed very positive results.

According to the evaluation the community appeared to be not only aware of the message but also more ready to do something about abuse in families.

The family helpline also proved to be a successful initiative with analysis indicating that it primarily serviced callers who had little or no contact with organisations before calling the helpline.

Ninety per cent of the callers asked for information and advice or needed counselling which indicated that the telephone helpline is operating at a preventative level.

Work is continuing so that specific target groups, such as ethnic and Aboriginal communities, can be targeted.

Clearly the campaign is making a significant impact in Western Australia as an effective approach to prevention in community development work.

### **Aboriginal Family Information Service**

The past practice of removing Aboriginal children from their families has resulted in many Aboriginal people not knowing their family networks and needing to establish links with their communities. The Department's Aboriginal Family Information Service assists Aboriginal people to trace their family history.

Many Aboriginal people use the service for formal reasons such as proof of birth, proof of Aboriginality and adoption purposes; some use it for less formal reasons such as documenting family trees, family histories and locating relatives. The service is also used by other government departments to confirm claims for benefits.

A typical request for information involves an officer gaining as many details as possible from the client such as names, places and dates. This information helps the officer check through records and, if the information is recorded, the details are passed on to the client. Sensitive information is usually filtered before presenting the material to clients.

The service works closely with a number of agencies in Western Australia that provide family information services and maintains contact with interstate agencies so that a comprehensive information and referral service is provided.

### **Family Crisis Program**

The Family Crisis program, implemented in July 1993, aims to assist people who are in financial crisis to develop long term skills that will enable them to avoid similar crisis situations in the future and help prevent the need for Departmental assistance. Services provided by both the Department and by non government organisations funded by the Department and include financial counselling, budgeting advice, bill paying service and negotiating with creditors.

Of the 16,461 applicants in 1993/94, 75 per cent received assistance. Of those who received assistance 77 per cent were families with dependent children (receiving 87 per cent of funds) and 20 per cent were Aboriginal families (receiving 22 per cent of funds).

The Department also funds community projects which address local needs. Examples include furniture exchanges, low cost cooking classes and community vegetable gardens.

### **Protection and Care of Children**

The aim of the Care and Protection of Children program is to ensure that children are protected by reducing the incidence of child abuse and neglect and minimising damaging effects; ensuring quality care for children under guardianship; and where appropriate enabling children to live with their families. The major direction is to prevent and respond to child maltreatment in a manner which promotes family and community responsibility by safely caring for children; providing quality care



for children who cannot be cared for by their families; and ensuring quality case practice which is based on sound knowledge and procedures.

Specific services include prevention services; group care such as cottages, group homes and hostels; adoption; guardianship; respite care; foster care; crisis care; and judicial proceedings.

### **Early Education Program**

The Department provides assistance to parents of children who appear to be at risk of developmental delay due to lack of appropriate stimulation at home. Through the Department's district offices around Western Australia, education officers work with families of children aged between two and eight years of age to provide instruction and guidance to carers and focus on their relationship with their children. Although the child is the main target, the whole family is involved so that parental skills are enhanced to ensure children are given the best possible opportunities to reach their full potential.

Education officers visit the homes of these families and lend books and games. Parents are taught skills such as book reading, are encouraged to join play groups or go on outings with other parents and their children and learn how to use everyday objects to stimulate and play with their children.

### **Family and Community Support**

The aim of the Family and Community Support program is to help families and communities develop their own solutions and have access to support that enables them to meet their social responsibilities and manage crises in their lives.

The major directions of the programs include material and financial assistance and counselling; services and programs to prevent abuse in families; education support programs; support for individuals and families to deal with or avoid crises; accommodation for homeless young people, single adults and families; and daily care of children such as long day care, occasional care and four year-old programs.

Specific services, provided both by the Department and non-government organisations funded by the Department, include community case work; community development; community facilities planning; state and regional social infrastructure planning; crisis care; youth activities; rural counselling and information; neighbourhood centres; family court counselling; parent help centres; family centres; and parent-teen link.

### **References**

- ABS Publications      *Australia's Families: Selected findings from the survey of Families in Australia 1992 (4418.0)*

**Western Australian Year of the Family  
Contribution by the Department for Community  
Development**

The Western Australian Year of the Family was launched in January 1994 with family activities and celebrations throughout Western Australia coordinated by the Department for Community Development.

Eight major projects were developed which reflected the two key themes of the year - family life has important responsibilities and family life is the key to a successful community.

Two editions of the Year of the Family magazine, *Kindred Spirits*, were produced and distributed widely around the State. It aimed to raise awareness of family issues and comment on the power, strengths and values of families.

To reward positive family practices, Year of the Family Awards were presented in November. Awards were presented in four categories and the winners were:

- **Media Award** - Rosemary Greenham, ABC Radio Community Newspaper Group (Highly Commended);
- **Industry Award** - Challenge Bank;
- **Community Service Award** - Medina Aboriginal Cultural Group; and
- **Outstanding Achievement to WA Families** - Ann Telfer (nominated by Sole Parents Action Network), Carole Stacey (nominated by Network Family Support), Janice Goodacre (nominated by Shire of Northam), and Lynette Gillam (nominated by The Compassionate Friends).

Another initiative of the year was the Family Community Conference. There were three aspects to the conference including a televised forum broadcast on Channel 7; three public forums with panels of community identities such as writers, educators, sports personalities and thinkers on topics of "The Well Being of Families", "Learning" and "Leisure"; and nearly 140 workshops across Western Australia on topics relevant to local communities.

Two grant schemes were established as part of the Year of the Family initiatives. Community grants of up to \$2,000 were made available to Western Australian non-profit organisations, sporting clubs and local government. Projects

benefited families by enhancing the raising of children, initiating debate about family issues and providing education on parenting.

The family research grants were awarded to individuals to undertake research consistent with the Year of the Family themes. Selected projects, to be completed by the end of 1995, include an investigation of how couples negotiate their roles in step-families and an inquiry into the philosophy of mothering.

Funding from the Year of the Family will also enable a person working in the mediation area in Bunbury to undertake studies overseas in 1995 as a Churchill Fellow. The study is to examine programs which help people enter and sustain a marriage or marriage type relationship.

Well known Aboriginal singer and songwriter, Josie Boyle, produced a cassette of her songs for the Year of the Family. The lead track, *Parents Do You Know Where Your Children Are*, is a reminder to all parents to consider the physical and emotional well-being of their children. The cassette is free and was distributed throughout the State.

Finally, as an ongoing reminder of the Year of the Family and what it embodied, a public artwork was commissioned to be located in King's Park, Perth. Western Australian artist Helen Taylor's work, featuring a family walk, amphitheatre and sun dial, will incorporate Aboriginal elements as well as native flora and fauna.

Although the Year of the Family drew to a close at the end of 1994, the Department's ongoing commitment to developing and supporting families remains a priority.





# GOVERNMENT

## government

## Chapter 3

# GOVERNMENT

---

Western Australia is one of the six federated sovereign States which, together with the Northern Territory and the Australian Capital Territory, constitute the Commonwealth of Australia. Thus, in addition to having its own Parliament and executive government, it is represented in the Federal legislature. As well as government at the Federal and State levels, there is a third system, that of Local Government, which functions through City Councils, Town Councils and Shire Councils. This chapter will focus on State and Local Government. For an outline of Western Australia's Constitutional development, refer to Chapter 4 of the 1993 Western Australia Year Book.

### **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. The present Governor of Western Australia, Major General Philip Michael Jeffery was appointed on 1 November 1993. 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. During the absence from Australia of the Governor-General, it is usual for the senior among the State Governors to be appointed Administrator.

### **The State Parliament**

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'.

## Chapter 3

# GOVERNMENT

---

Contents	Page
The Governor of Western Australia	53
The State Parliament	53
Elections	56
State Government administration	56
The Judicature	56
State Representation	61
The Local Government System	61
Statistical Divisions	67

TABLE 3.1 – MINISTRIES FROM 1890

Name of Premier	Political party	Date of assumption			Duration		
		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
Leake	(a)	1901	23	December	—	6	8
James	(a)	1902	1	July	2	1	9
Daglish	Labor	1904	10	August	1	—	15
Rason	Liberal	1905	25	August	—	8	12
Moore	Liberal	1906	7	May	4	4	9
Wilson	Liberal	1910	16	September	1	—	21
Scaddan	Labor	1911	7	October	4	9	20
Wilson	Liberal	1916	27	July	—	11	1
Lefroy	Liberal	1917	28	June	1	9	20
Colebatch	Liberal	1919	17	April	—	1	—
Mitchell	National and C.P. coalition	1919	17	May	4	10	30
Collier	Labor	1924	16	April	6	—	8
Mitchell	National and C.P. coalition	1930	24	April	3	—	—
Collier	Labor	1933	24	April	3	3	27
Wilcock	Labor	1936	20	August	8	11	11
Wise	Labor	1945	31	July	1	8	1
McLarty	L.C.L. and C.P. coalition	1947	1	April	5	10	22
Hawke	Labor	1953	23	February	6	1	10
Brand	L.C.L. and C.P. coalition	1959	2	April	11	11	1
Tonkin	Labor	1971	3	March	3	1	5
Court, Sir C.	Liberal and C.P. coalition	1974	8	April	7	9	17
O'Connor	Liberal and C.P. coalition	1982	25	January	1	1	—
Burke	Labor	1983	25	February	5	—	—
Dowding	Labor	1988	25	February	1	11	12
Lawrence	Labor	1990	12	February	3	—	4
Court, R.	Liberal and C.P. coalition	1993	16	February	Still in office		

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 National Country Party of Aust (WA) Inc changed it's name to National Party of Australia (WA) Inc. on 2 October 1984. (c) The name of the Party was changed to The Liberal Party of Australia (Western Australian Division) Inc. 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 Labor party in the 1890s. A Labor Ministry assumed office in 1904.

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



**HIS EXCELLENCY MAJOR GENERAL PHILIP MICHAEL JEFFERY, AO,  
MC, GOVERNOR OF WESTERN AUSTRALIA**



His Excellency Major General Philip Michael Jeffery, Governor of Western Australia.

*Photograph: Courtesy of Government House*

His Excellency Major General Philip Michael Jeffery, AO, MC was born in Wiluna, Western Australia in 1937 and was educated at Cannington and East Victoria Park State School, Kent Street High School and the Royal Military College, Duntroon.

Since his graduation from Duntroon in 1958, Governor Jeffery has served overseas on two operational tours - with the Special Air Service Regiment (SASR) in Borneo and with the 8th Battalion, The Royal Australian Regiment in Vietnam as an infantry company commander. For service in Vietnam he was awarded the Military Cross and the South Vietnamese Cross of Gallantry.

In 1972 he attended the British Army Staff College at Camberley and from there was promoted to Lieutenant Colonel and posted to Wewak as the Commanding Officer of the 2nd Battalion, Pacific Islands Regiment. In 1975, he became commanding officer of the SASR in Perth and was then promoted to Colonel as the first Director of the Army's Special Action Forces, for services to which he became a Member of the Order of Australia.

From 1981-83, he was seconded to head Australia's national counter terrorist coordination authority and on completion of that appointment, was posted as Commander of the 1st Mechanised and Airborne Brigade in Sydney.

In 1985 he attended the Royal College of Defence Studies in London, on completion of which he was appointed to command the Army's 1st Division. In 1990, he assumed the appointment of Deputy Chief of the General Staff responsible for the day to day running of a 65,000 man Army. In the following year, he was appointed Assistant Chief of the General Staff for Materiel which involved the management of Army equipment and construction projects, valued at \$3 billion. The Governor and his wife Marlena have four children. Governor Jeffery is a keen fisherman, Australian rules and cricket fan, and enjoys reading and music.

TABLE 3.2 – THE HONOURABLE MEMBERS  
OF THE LEGISLATIVE COUNCIL  
JULY 1994 (a)

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

## SUMMARY

The Liberal Party of Australia (Western Australian Division)	
Incorporated (Liberal)	15
Australian Labor Party (Labor)	14
National Party of Australia (National)	3
Independent	1
Green	1

(a) Current terms commenced on 22 May 1993 and expire on 21 May 1997.  
Source: Legislative Council, Parliament of Western Australia.

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,

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 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 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 1993-94*

During the first session of the thirty-fourth Parliament, which lasted from 17 June 1993 to 3 May 1994, the Western Australian legislature enacted seventy-two Public Statutes.

### State Government administration

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

TABLE 3.4 – WESTERN AUSTRALIAN STATE MINISTRY, JUNE 1994

<i>Minister</i>	<i>Title of office</i>
Hon. R.F. Court, MLA, B Comm	Premier; Treasurer; Federal Affairs; Tourism; Public Sector Management
Hon. H. J. Cowan, MLA.	Deputy Premier; Commerce and Trade; Leader of the National Party
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; Lands; Assisting in Public Sector Management; Assisting for Resources Development; Leader of Government in the Legislative Council
Hon. E.J. Charlton, MLC.	Transport;
Hon. N.F. Moore, MLC., BA., Dip Ed.	Education; Employment and Training; Assisting in Commerce and Trade; Sport and Recreation
Hon. C.L. Edwardes, MLA, B Juris, LLB., BA.	Attorney-General; Women's Interests; Parliamentary and Electoral Affairs
Hon. G.M. Evans, MLC., MBE., FCA.	Finance; Racing and Gaming; Assisting the Treasurer
Hon. A.K.R. Prince, MLA.	Aboriginal Affairs; Housing
Hon. P.D. Omodei, MLA.	Local Government; Minister for Water Resources
Hon. P.G. Foss, MLC.	Minister for Health; the Arts; Fair Trading
Hon. K.J. Minson, MLA., BDSc.	Minister for the Environment; Disability Services; Assisting the Minister for Fisheries
Hon. R.K. Nicholls, MLA.	Minister for Community Development; the Family; Seniors
Hon. G.D. Kierath, MLA.	Minister for Labour Relations; Works; Services; Multicultural and Ethnic Affairs
Hon. R.L. Wiese, MLA.	Minister for Police; Emergency Services
Hon. K.R. Lewis, MLA.	Minister for Planning; Heritage; Assisting the Minister for Transport
Mr J.L. Bradshaw, MLA., MPS., JP.	Parliamentary Secretary of Cabinet;
Mr F. C. Tubby, MLA., B.Ed., MACE., JP.	Parliamentary Secretary of State assisting in Education; Employment and Training; Sport and Recreation; Assisting the Minister for Commerce and Trade;
Mr J. G. Clarko, MLA., A.E., BA., Dip Ed., MACE., JP.	Speaker;
Mr W.J. McNee, MLA.	Parliamentary Secretary to the Minister for Water Resources; Local Government
Mr G. J. Strickland, MLA., B App Sc., Dip Ed.	Chairman of Committees;
Mr R. C. Bloffwitch, MLA.	Government Whip.

Source: Ministry of the Premier and Cabinet

**TABLE 3.3 – MEMBERS OF THE LEGISLATIVE ASSEMBLY  
SEPTEMBER 1994**

<i>Name</i>	<i>Political party</i>	<i>Electoral district</i>
R. A. Ainsworth	National	Roe
Hon. C. J. Barnett	Liberal	Cottesloe
Hon. M. Barnett	Labor	Rockingham
B. R. Blaikie	Liberal	Vasse
R. C. Bloffwitch	Liberal	Geraldton
M. F. Board	Liberal	Jandakot
J. L. Bradshaw	Liberal	Wellington
Hon. E. F. Bridge	Labor	Kimberley
C. M. Brown	Labor	Morley
N. M. Catania	Labor	Balcatta
J. G. Clarko	Liberal	Marmion
Dr E. Constable	Independent	Floreat
Hon. R. F. Court	Liberal	Nedlands
H. J. Cowan	National	Merredin
E. J. Cunningham	Labor	Marangaroo
J. H. D. Day	Liberal	Darling Range
Hon. C. L. Edwardes	Liberal	Kingsley
Dr J. M. Edwards	Labor	Maylands
Dr G. I. Gallop	Labor	Victoria Park
L. Graham	Labor	Pilbara
Hon. J. F. Grill	Labor	Eyre
Hon. E. K. Hallahan	Labor	Armadale
Dr K. D. Hames	Liberal	Dianella
Hon. Y. D. Henderson	Labor	Thornlie
R.K. Parker	Liberal	Helena
Hon. M. G. House	National	Stirling
R. F. Johnson	Liberal	Whitford
Hon. G. D. Kierath	Liberal	Riverton
J. C. Kobelke	Labor	Nollamara
K. J. Leahy	Labor	Northern Rivers
Hon. K. R. Lewis	Liberal	Applecross
Hon. J. A. McGinty	Labor	Fremantle
W. J. McNee	Liberal	Moore
N. R. Marlborough	Labor	Peel
A. D. Marshall	Liberal	Murray
Hon. K. J. Minson	Liberal	Greenough
Hon. R. K. Nicholls	Liberal	Mandurah
Hon. P. D. Omodei	Liberal	Warren
I. F. Osborne	Liberal	Bunbury
Hon. P. G. Pandal	Liberal	South Perth
K. A. R. Prince	Liberal	Albany
F. Riebeling	Labor	Ashburton
E. S. Ripper	Labor	Belmont
M.H. Roberts	Labor	Glendalough
Hon. D. J. Shave	Liberal	Melville
Hon. D. L. Smith	Labor	Mitchell
W. Smith	Liberal	Wanneroo
G. J. Strickland	Liberal	Scarborough
Hon. I. F. Taylor	Labor	Kalgoorlie
W. I. Thomas	Labor	Cockburn
M. W. Trenorden	National	Avon
F. C. Tubby	Liberal	Roleystone
Dr H. Turnbull	National	Collie
J. Van De Klashorst	Liberal	Swan Hills
D. Warnock	Labor	Perth
Dr J. Watson	Labor	Kenwick
Hon. R. L. Wiese	National	Wagin
<b>SUMMARY</b>		
The Liberal Party of Australia (Western Australian Division)		27
Incorporated (Liberal)		
Australian Labor Party (Labor)		23
National Party of Australia (National)		6
Independent		1

Source: Legislative Assembly, Parliament of Western Australia.

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. 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 Bank of Western Australia (BankWest). 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.

**The Local  
Government System**

The function of local government in Western Australia is performed by a number of Councils (or, in special circumstances, 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  
Districts*

On presentation of a petition signed by a prescribed minimum 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

TABLE 3.5 - WESTERN AUSTRALIAN SHADOW MINISTRY,  
NOVEMBER 1994

<i>Minister</i>	<i>Title of Office</i>
Hon. J.A. McGinty, MLA.	Leader; Treasurer; Attorney General; Arts; Fisheries; South West; Parliamentary and Electoral Reform
Dr G.I. Gallop, MLA.	Deputy Leader; Health; Accountability; Federal Affairs; Community Infrastructure
Hon. S.J. Halden, MLC.	Leader of the Opposition in the Legislative Council; Education; Employment and Training
Hon. M.W. Nevill, MLC.	Deputy Leader of the Opposition in the Legislative Council; Mines; Goldfields
Hon. E.F. Bridge, MLA.	Aboriginal Affairs; North West
C.M. Brown, MLA.	Community Development; Justice; Corrective Services
N.M. Catania, MLA.	Police; Emergency Services; Small Business
Hon. K.M. Chance, MLC.	Primary Industry; Mid West; Wheatbelt; Assisting Health
Dr J.M. Edwards, MLA.	Environment
Hon. J.F. Grill, MLA.	Resources Development
Hon. E.K. Hallahan, MLA.	Transport; Tourism
Hon. Y.D. Henderson, MLA.	Public Sector Management; Consumer Affairs; Heritage
J.C. Kobelke, MLA.	Planning; Lands; Family; Freedom of Information Spokesman
Hon. A.J.G. MacTiernan, MLC.	Productivity and Labour Relations
N.R. Marlborough, MLA.	Local Government; Works; Services
F. Riebeling, MLA.	Housing; Sport and Recreation; Youth
E.S. Ripper, MLA.	Leader of the House; Finance; Commerce; Trade
M.H. Roberts, MLA.	Multicultural and Ethnic Affairs; Water Resources; Seniors
Hon. I.F. Taylor, MLA.	Racing and Gaming
W.I. Thomas, MLA.	Energy; Science and Technology
Dr J. Watson, MLA.	Women's Interests; Disability Services; Children's Policy

*Source:* The West Australian

The Western Australian government, comforted by poll readings which indicated that its electorate preferred its legislation to the Canberra model, funded newspaper advertisements and delivered pamphlets to households to broadly explain the State legislation. All land titles previously granted by the crown were validated by the Act. Any native title, which may have existed was deemed to be extinguished and replaced with an entitlement for Aboriginal people to exercise rights of traditional usage, provided those rights do not interfere with the rights of other people holding title to the land. Aboriginal groups would be able to apply for compensation or impairment of native title which may have occurred between 30 October 1975 and the commencement of the Act, because of the grant of any land title. There was also provision for compensation arising from the rating of land titles in the future. Compensation claims by an Aboriginal group under the Western Australian Act were to be submitted to the Minister for Aboriginal Affairs. Issues not resolved through this procedure did not have access to a tribunal but could be referred to the Supreme Court.

Opponents of the Western Australian legislation claimed it was a violation of the 1975 Federal Racial Discrimination Act. There were also suggestions that the Act ignored Australia's international treaty obligations and overlooked documentation that native title at common law in Canada, the United States and New Zealand had provided basis for both reconciliation between indigenous and non-indigenous people as well as resource and economic development. Ernie Bridge, the shadow spokesperson for Aboriginal Affairs in Western Australia, was vehemently critical of the legislation, ironically framed in the International Year of Indigenous Peoples.

The federal legislation also had its strong critics. During its tortuous passage organisations such as the Association of Mining and Exploration Companies, the Chamber of Mines and Energy of Western Australia, the Chamber of Commerce and Industry of WA and the Western Australian Farmers' Federation (Inc) inserted newspaper advertisements headed "the Federal Mabo Bill is Unworkable". To gain the support of the two Green Senators it was also necessary in the final stages of the Senate debate to include a clarification that future government actions under the legislation would be subject to the Racial Discrimination Act and a specification that native title would not be extinguished by lands acquired by Governments for public works until public works are constructed. Protection for native rights was also extended to hunting and fishing.

The structure of the native tribunal system, with Federal, State or Territory bodies having the capacity to hear and rule on claims, remained similar to that which was originally proposed in the Commonwealth Bill. Only if a tribunal failed to reach a solution by mediation satisfactory to all competing interests would the matter be referred to a Federal Court for determination. However, where States and Territories did not comply with the criteria set down by the Federal Government, a commonwealth native tribunal (the new National Native Title Tribunal) would hear the case. An amendment to the Bill permitted the registrar of a tribunal to refer any title claim, which was considered not to be legitimate, to a presidential member of the tribunal. That presidential member could be a Supreme Court or Federal court judge. Those which contained the necessary information, and were not deemed frivolous, were to be placed on a public registrar of claim. How the compensation was to be met remained a delicate matter for the tiers of government to negotiate.

Soon, however, the Western Australian Government announced a challenge to the validity of the Commonwealth Act. Meanwhile one of the many amendments made in the Senate was the creation of a Parliamentary Joint Committee on Native Title "to consult extensively about the implementation and operation" of the Act. Its task was to be formidable as the Commonwealth, Western Australian (and other States) legislation in response to the Mabo decision had triggered one of the most controversial and divisive debates in the nations history.



### THE MABO CONTROVERSY

By Dr Harry C.J. Phillips, Edith Cowan University

On 3 June 1992, the High Court of Australia held in *Mabo v Queensland (No. 2)* that the common law of Australia recognises a form of native title that reflects the entitlement of the indigenous inhabitants of Australia, in accordance with their laws and customs, to their traditional lands. In doing so, the High Court rejected the concept adopted in the eighteenth and nineteenth century in Australia, that at the time of European occupation Australia was *terra nullius*, or land belonging to nobody. A decade earlier, Eddie Mabo and four members of the Meriam people, the traditional inhabitants of the Murray Islands in Torres, had commenced proceedings in the Court seeking certain entitlements to the Murray Islands. The decision included a declaration that the Meriam people were entitled to possession, occupation, use and enjoyment of one of those islands, the island of Mer.

Although it was recognised that the decision may have a particular impact in Western Australia, where more than half the State is vacant crown land, the extent to which the issue was to dominate the political headlines was unexpected. Aboriginal land rights had not been a major issue in either the Western Australian or Federal election held in early 1992 and surveys indicated that the public had little awareness of the complex Mabo issues. The Commonwealth government gave the debate focus when it published a set of 33 principles as a basis for resolution on the issues raised by the Mabo decision. However, despite some twelve hours of debate at the ensuing meeting of the Council of Australian Government (Premiers' Conference) on 8 June, 1993, Prime Minister Keating failed to achieve any consensus or agreement on a communique. The Premier of Western Australia, Richard Court, having established a Cabinet sub-committee of ministers whose portfolios would be affected by the Mabo decision, firmly opposed the Keating proposals and foreshadowed that the Western Australian Parliament would legislate to extinguish native title.

In Premier Court's view the Mabo decision, even if applicable to the Murray Island, should not be generalised to the mainland as land administration was constitutionally a matter for the separate States. Another to raise the temperature of the debate was the Liberal party State President, Bill Hassell, who, as a former Opposition leader, had vehemently challenged the Burke government's Aboriginal Land Rights Bill in the 1980s. Mr Hassell contended that the High Court's decision was part of an agenda to develop "a separate, sovereign Aboriginal State within Australia capable of conducting international affairs".

In later December 1993 legislation in response to the Mabo decision was given passage in both the Commonwealth and the Western Australian State Parliaments. Marathon sittings took place in the Senate in Canberra and in Western Australia the "guillotine" was controversially used for the first time in the Legislative Council to rush the passage of the 1993 Land (Titles and Traditional Usage) Bill. The use of this procedure was part of a strategy to have the State legislation passed into law before the Commonwealth Native Title Bill. Proclamation in Western Australia, for the legislation to come into force on 2 December, 1993, took only 16 hours.

The assented Acts were lengthy and complex and subject to various interpretations. Broadly the Commonwealth position was to recognise native title. Freehold, pastoral, tourism and residential leasehold would extinguish native title. Nor were there any veto provisions for Aborigines. Validation of mining leasing would not extinguish native title. In such instances native title could be revived on the expiry of that lease. New tribunals would be established to resolve disputes but the Government could override in the national or State interest. Compensation was to be paid to Aborigines for extinguishment or impairment of native title.

Mayor and the President, are eligible for re-election if not subject to any of the disqualifications contained in the Act.

*Functions of Local Authorities*

The functions and powers of local authorities are extremely 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.

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.

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 are delineated on the maps of the State in the Appendix.

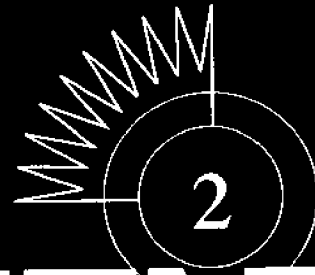
### *Constitution and Electoral Provisions*

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



# ENVIRONMENT

## environment

## Chapter 2

# ENVIRONMENT

---

Contents	Page
<b>Physical Features</b>	
Physical Features of Western Australia	27
<b>Climate</b>	
What Caused the Storm of 23-24 May 1994	31
<b>Flora</b>	
Flora Conservation	34
<b>Conservation</b>	
National Parks	35
Conservation Parks	36
Nature Reserves	37
State Forests	37
Timber Reserves	37
Marine Parks and Reserves	37
<b>Fauna</b>	
Mammals	38
Birds	40
Reptiles	41
Amphibia	42
Terrestrial Invertebrates	43
Marine and Freshwater Fauna	44
Legislation and Management	45
<b>Environmental Protection</b>	
Environmental Protection in Western Australia	46
Environmental Protection Policies	46
Waste Management	46
Legislation and Management	47
Atmospheric quality of the Perth Central Business District	48
References	49

# ENVIRONMENT

---

## Physical Features

Western Australia is the largest Australian State. Only the narrow Timor Sea separates its northern coastline from equatorial islands of the Indonesian archipelago; to the south is the Southern Ocean and Antarctica.

Within this vast area, climates range from the monsoonal tropics of the north through arid northern coastal and inland areas to temperate zones in the south. Environments vary from the rugged beauty of the far north, the breathtaking Hamersley Range, stunning red deserts, vast areas of productive agricultural land and magnificent karri eucalypt forests. Along the coastline are innumerable beaches, coral reefs of great beauty and waters rich in marine life. The most attractive and important features of the land and coastline are protected in national and marine parks.

### Physical Features of Western Australia

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

Source: Department of Land Administration

## Climate

*Contributed by the Western Australian Regional Office of the Bureau of Meteorology (BOM). For further description of the Bureau see page 42 of the 1993 Western Australian Year Book.*

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

**TABLE 2.1 - MAXIMUM TEMPERATURES FOR SELECTED WA STATIONS, 1993 VERSUS LONG TERM AVERAGES (celsius)**

Station	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Broome	33.0	31.5	34.6	35.8	31.5	28.3	27.4	30.4	31.1	31.1	33.3	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	37.3	36.6	38.7	37.2	30.0	26.7	26.4	27.9	30.6	32.7	34.7	37.5
Average	36.3	36.2	36.7	35.0	30.3	27.4	26.8	28.8	32.2	34.5	36.2	36.6
Learmonth	38.1	36.1	36.7	34.4	27.8	24.1	23.3	25.5	28.3	30.4	34.2	36.7
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	31.9	30.7	29.6	28.2	25.9	22.1	22.1	23.4	24.1	25.1	26.8	29.0
Average	31.2	32.5	31.4	28.8	25.9	23.2	22.0	22.7	24.4	25.7	27.3	29.0
Geraldton	31.2	32.0	28.1	26.5	23.7	19.4	19.0	19.2	21.4	22.9	25.5	30.4
Average	31.7	32.5	30.9	27.4	23.7	20.7	19.4	20.0	22.0	24.3	27.0	29.3
Perth Airport	32.1	30.9	27.7	24.6	21.3	18.0	17.5	17.9	19.9	20.6	26.4	30.4
Average	31.4	31.7	29.5	25.2	21.4	18.7	17.6	18.3	20.0	22.3	25.4	28.5
Albany	24.4	23.6	22.8	21.1	17.2	15.6	15.2	15.8	17.3	17.2	19.6	23.7
Average	25.2	25.1	24.3	21.6	18.7	16.6	15.7	15.9	17.4	18.8	20.8	23.5
Narrogin	32.7	28.8	25.5	22.9	17.5	14.4	14.2	15.0	17.4	19.5	25.8	29.4
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	26.7	25.1	24.0	23.7	19.3	16.4	16.2	18.1	19.2	19.9	23.0	25.5
Average	26.2	26.4	25.2	23.1	20.2	17.8	17.0	17.7	19.4	21.1	23.0	24.7
Kalgoorlie	36.7	30.7	28.0	26.6	19.1	15.5	16.5	19.0	21.6	24.7	29.3	30.3
Average	33.6	31.9	29.6	25.1	20.4	17.4	16.4	18.3	22.1	25.6	28.9	32.0

Source: Bureau of Meteorology

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 south-easterlies 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.

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

**TABLE 2.2 - MINIMUM TEMPERATURES FOR SELECTED WA STATIONS, 1993 VERSUS LONG TERM AVERAGES (celsius)**

Station	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Broome	26.8	26.1	27.1	23.3	20.2	17.1	12.3	16.3	19.4	21.4	24.9	26.8
Average	26.2	25.9	25.4	22.6	18.4	13.2	13.6	13.0	18.4	22.2	24.9	26.4
Port Hedland	25.6	25.5	23.5	23.2	19.9	13.5	11.7	13.9	15.0	16.9	21.0	25.2
Average	25.4	25.3	24.3	21.1	17.1	13.9	12.0	12.9	15.2	17.9	21.1	23.7
Learmonth	22.0	22.4	20.0	20.1	16.7	12.7	10.2	10.9	12.5	14.4	17.8	20.6
Average	23.0	24.3	23.1	20.6	16.1	13.4	11.4	12.5	14.0	16.2	18.4	20.6
Carnarvon	21.9	22.7	20.6	19.8	15.4	11.9	10.1	11.2	13.0	16.0	18.9	21.0
Average	22.4	23.3	22.0	19.0	14.8	12.4	11.0	11.6	13.9	16.3	18.5	20.4
Geraldton	17.1	18.0	16.0	13.5	12.0	9.7	9.4	8.2	9.1	9.2	14.2	16.4
Average	18.3	19.2	17.9	15.3	12.7	10.9	9.3	8.8	9.2	10.9	13.7	16.2
Perth Airport	17.4	16.9	15.4	12.8	10.9	9.1	8.7	7.6	9.0	9.1	14.5	15.6
Average	16.7	17.4	15.7	12.7	10.2	9.0	8.0	7.9	8.8	10.1	12.4	14.6
Albany	12.5	13.3	12.5	10.4	9.8	7.6	7.8	7.5	7.1	7.9	10.8	12.1
Average	13.5	14.4	13.3	11.6	9.8	8.1	7.4	7.3	7.9	9.0	10.6	12.3
Narrogin	14.1	13.3	12.7	10.2	7.6	5.7	5.7	5.3	6.2	5.9	11.4	11.9
Average	14.6	14.9	13.6	10.9	8.2	7.1	5.8	5.6	6.3	8.2	10.6	12.9
Esperance	15.3	16.2	14.5	13.4	10.6	8.6	8.3	8.4	8.8	9.2	13.0	13.7
Average	15.5	15.9	14.9	13.1	10.8	8.9	8.1	8.5	9.5	10.7	12.7	14.4
Kalgoorlie	19.8	16.7	15.4	13.5	8.0	6.0	4.8	4.6	7.8	9.4	15.7	15.5
Average	18.1	17.6	16.0	12.4	8.4	6.1	4.7	5.4	7.8	10.8	13.9	16.5

Source: Bureau of Meteorology



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.

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 south-west 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 south-west coast.

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.

**TABLE 2.3 - RAINFALL FOR SELECTED WA STATIONS: 1990-93**  
(Millimetres)

<i>Station</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>Mean</i>
Kununurra	451	604	410	953	738
Halls Creek	497	811	217	1,039	811
Broome	195	766	132	629	567
Port Hedland	97	213	119	405	304
Learmonth	267	210	256	239	270
Carnarvon	204	251	371	165	230
Meekatharra	209	115	377	170	220
Geraldton	429	495	444	384	470
Perth Airport	705	903	960	666	802
Albany	908	760	931	821	806
Merredin	355	309	462	324	326
Narrogin	556	508	580	524	505
Katanning	440	502	578	510	482
Esperance	568	466	824	520	620
Kalgoorlie	300	168	529	326	256

*Source:* Bureau of Meteorology

## What Caused the Storm of 23-24 May 1994

### Contribution by the Bureau of Meteorology

#### Weather pattern

A pool of very cold air moved rapidly northeastward towards the southwest of the State during 23 May, causing intensification of a low pressure system near Cape Leeuwin late in the day.

By midnight the low was located just off the south coast between Albany and Esperance, with a central pressure of about 984 hPa. The metropolitan area felt the full force of the storm overnight on 23 May as the pressure fell to a minimum of 994 hPa at 8pm.

The low continued to intensify as it moved rapidly away to the southeast during the twenty fourth.

#### Areal extent of the storm

The area affected by the storm was typical of a large winter storm, though the effects were more severe than with most. Winds were significantly stronger near the coast than inland.

The Perth Metropolitan area was severely affected, with somewhat lesser effects at centres farther down the lower west coast.

To the north, Geraldton received its strongest gusts on record for May (at the Airport, 128 km/h), while Esperance recorded a gust of 130 km/h.

#### Wind gusts recorded and comparison with other Storms

The highest wind gust recorded was 143 km/h at Swanbourne and at the Fremantle Port Authority tower. Rottnest Island recorded 133 km/h, Jandakot Airport 130 km/h and Perth Airport 111 km/h. Bunbury Power Station recorded 95 km/h and Mandurah 119 km/h.

The 143 km/h gust at Fremantle was the equal second highest recorded since records began at the site.

Gusts of the same strength were recorded during cyclone Alby and also on 6 June 1981. The highest wind gust recorded at the Fremantle site was 147 km/h during the event of 21-22 September 1988.

### The Weather in 1993

Rainfall for the year was below average about the lower west coast while the eastern half of the state received above average rainfall. Timely rains in late April followed up by consistent seasonal rains helped produce above average crop yields in most agricultural districts. The highest annual rainfall total was 1,339.4 mm at Springfields near Pemberton and the lowest total was just 81.0 mm at Carey Downs station in the Gascoyne.

The northern wet season was highlighted by heavy rains from two tropical depressions which originated in the Northern Territory. The first developed late in January and moved westwards across the Kimberley, and then into the Fortescue. The second, in February, moved slowly and erratically across the Kimberley. The combined effect of these depressions was severe flooding of the Fitzroy River and its tributaries. Between May and October a number of North-west cloud bands also brought above average rainfall to the eastern two thirds of the State. Halls Creek experienced its wettest year ever, recording 1,039.4 mm.

Only four tropical cyclones occurred in the Western Australian region compared to the average number of eight. Tropical cyclone "Naomi" crossed the coast south of La Grange on 17 December and produced heavy rains in a band from Cape Leveque to Telfer where a record 202 mm fell in the 24 hours to 9 am on the eighteenth.

In southern parts, thunderstorms affected much of the South-west in mid-March. Storms dumped rain and hail causing sheet erosion and flash flooding in a band stretching from Narrogin to Esperance. The break of the agricultural growing season occurred with widespread rains in late April. An intense low near Esperance produced destructive winds in that area on 28-29 May. Cold frontal activity was weaker than normal during May and June but tended to be stronger later in winter. Thunderstorms with hail and strong squalls accompanied several fronts towards the latter part of August and into September.

In September, several tornadoes were reported in the South-west. The most damaging of these occurred on the afternoon of the 22nd when a tornado tore through Mandurah demolishing many houses. A cold outbreak resulted in snowfalls on the southern ranges and hail in many areas on the 17th, followed by a severe frost on the 19th which ruined areas of cereal crops. In October, there was the occasional front which brought damaging weather, the most significant being on the 27th when hail damaged fruit crops from Pickering Valley to Manjimup.

Several severe storms occurred during November. The most significant event was on the 8th when storms produced hail and strong winds which combined to cause major damage to wheat and lupin crops in the Central Wheatbelt, particularly near Koorda. The month of December was relatively quiet in the

southern half of the State with the only significant events being bush fires in the southern suburbs of Perth on the 16th and near the Shannon River on the twenty-seventh.

The annual rainfall in Perth was below average. Perth Airport recorded a total of 666.0 mm, which was 139 mm below average and the lowest since the 620.2 mm recorded in 1985. Rainfall was registered on just 100 days the fewest since 1987. The mean yearly maximum temperature at the airport of 23.9 degrees celsius was 0.3 degrees celsius below average and the mean yearly minimum of 12.3 degrees celsius was 0.3 degrees celsius above average. The highest maximum temperature recorded during the year was 41.2 degrees celsius on 17 December. Perth also recorded its lowest maximum temperature for May on record, 12.5 degrees celsius on the twenty-eighth.

## 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 12,000 species unique to Western Australia, of which just under 8,000 of these have been named. 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 endangered, vulnerable, rare 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 (especially in the heathlands and

shrublands) is equivalent to that of tropical rainforest areas, such as the Philippines Archipelago or Malaysia.

## 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).

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 threatened 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 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 bushland remnants, aboriginal lands, and other undeveloped private land (for example, urban bush areas).

**TABLE 2.4 - CALM - MANAGED LANDS AND WATERS  
JUNE 1994**

<i>Tenure Classification</i>	<i>Area (ha)</i>
National Park	4,836,571
Conservation Park	87,119
Nature Reserve	10,769,699
Marine Park	1,013,940
Marine Nature Reserve	132,000
State Forest	1,748,883
Timber Reserve	141,487
Reserve (a) —	
Freehold	33,688
Leasehold	903,031
Miscellaneous	12,918
<b>Total</b>	<b>19,936,785</b>

(a) Includes land reserved under the Land Act (1933), is not a park or reserve, and which was administered by the National Parks Authority.

Source: CALM Land Information Branch

### *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 around 30 per cent of the State's vascular plant species are yet to be scientifically described and named. CALM's Herbarium maintains a database of all the names of Western Australian plants for which there are identified voucher specimens in the State Collection. This database is fundamental because it provides the current names of species and their variants to related databases.

In addition to a names database, the Herbarium is completing the computer recording of all its 350,000 specimen holdings. For each specimen, where full information is available, there is a precise locality, notes on soil type, associated vegetation, date of collection and details of the collector, and, from the names database, the current name of the species. Thus, a vast amount of data about a species and about the places where specimens were collected can be coupled with data on geology, climate, land tenure or other geographic information, to give a comprehensive tool for conservation of the State's flora.

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 algae, fungi, lichens and bryophytes.

CALM, through its Bioresources 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 completed for the Merredin District and the Swan Region. Similar area based programs are underway for the Albany, Esperance, Katanning, Narrogin and Moora districts and the Central and Southern Forest Regions. 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.

## **Conservation**

### *Contributed by CALM*

#### **National Parks**

National parks are for wildlife and landscape conservation, scientific study, preservation of features of archaeological, historic or scientific interest, and enjoyment by the public. They have

**TABLE 2.5 - NATIONAL PARKS IN WESTERN AUSTRALIA  
1994**

<i>National Park</i>	<i>Area (ha)</i>	<i>National Park</i>	<i>Area (ha)</i>
Alexander Morrison	8,500	Millstream-Chichester	199,736
Avon Valley	4,366	Moore River	17,540
Badgingarra	13,121	Mt Augustus	9,168
Beedelup	1,786	Mt Frankland	30,830
Boorabbin	26,000	Nambung	18,318
Brockman	49	Neerabup	1,069
Cape Arid	279,382	Peak Charles	39,959
Cape Le Grand	31,578	Porongurup	2,511
Cape Range	50,581	Purnululu (Bungle Bungle)	208,723
Collier Range	235,162	Rudall River	1,283,706
D'Entrecasteaux	114,566	Scott	3,273
Drovers Cave	2,681	Serpentine	4,363
Drysdale River	448,264	Shannon	52,598
Eucla	3,342	Sir James Mitchell	497
Fitzgerald River	329,039	Stirling Range	115,920
Francois Peron	52,529	Stokes	9,726
Frank Hann	61,404	Tathra	4,322
Geikie Gorge	3,136	Torndirrup	3,936
Gloucester	875	Tuart Forest	2,049
Goongarrie	60,397	Tunnel Creek	91
Gooseberry Hill	33	Walpole Nornalup	15,861
Greenmount	58	Walyunga	1,812
Hassell	1,265	Warren	2,982
Hidden Valley	2,068	Watheroo	44,474
John Forrest	2,676	Waychinicup	3,982
Kalamunda	375	West Cape Howe	3,517
Kalbarri	186,050	William Bay	1,734
Karijini (Hamersely Range)	627,445	Windjana Gorge	2,134
Kennedy Range	141,660	Wolf Creek Crater	1,460
Leeuwin-Naturaliste	19,119	Yalgurup	12,888
Lesmurdie Falls	56	Yanchep	2,842
Lesueur	26,987	<b>Total</b>	<b>4,836,571</b>

Source: CALM

national or international significance for scenic, cultural or biological value.

The area of the 63 national parks as at 30 June 1994 was 4,836,571 hectares.

Changes to the national park estate consisted of an increase to Karijini National Park (20,848 hectares) by including an area of adjacent vacant Crown land and adding two cancelled conservation parks; a nett increase of 300 hectares to Rudall River National Park; and an increase of 264 hectares to Tuart Forest National Park with the inclusion of revoked State Forest No. 1.

#### **Conservation Parks**

Conservation parks have the same purposes as national parks, but they do not have the same national or international significance. They have significant local or regional value for conservation and recreation.

The area of conservation parks as at 30 June 1994 was 87,119 hectares, representing an increase of 39,501 hectares in 1993-94. Notable additions to this category were Devonian Reef (41,371 hectares), Brooking Gorge (7,967 hectares), Geikie Gorge area (5,332 hectares) and Coalseam (754 hectares).

**Nature Reserves**

Nature reserves are for wildlife and landscape conservation, scientific study, and preservation of features of archaeological, historic or scientific interest. Wildlife values may not be commercially exploited, and recreation which does not harm natural ecosystems is allowed.

The area of natural reserves as at 30 June 1994 was 10,769,699 hectares. There was an increase of 12,706 hectares during the year. The only sizable addition was 11,571 hectares to a new unnamed reserve in CALM's Esperance District.

**State Forests**

State forests are managed for multiple purposes, including water catchment protection, recreation, timber production on a sustained yield basis, and conservation. Provision is also made for public utilities and mineral production, where these activities are imposed.

Within State forests, designated areas are managed for specific purposes, such as conservation or optimum yield of exotic plantings.

The area of State forest as at 30 June 1994 was 1,748,883 hectares, an increase of 558 hectares during the year. The major addition was 735 hectares to State Forest No. 36 in CALM's Pemberton District, while the major decrease was the revocation of State Forest No. 1 (264 hectares) for inclusion into the Tuart Forest National Park.

**Timber Reserves**

Timber reserves declared under the CALM Act are managed on the same basis as State forests. The category is transitional; as reserves are evaluated they may be changed to a more appropriate tenure, such as State forest or nature reserve.

The area of timber reserves as at 30 June 1994 was 141,487 hectares, a decrease of 407 hectares during the year. The decrease was due to the cancellation of a timber reserve near Bridgetown, which has since been set aside as a nature reserve.

**Marine Parks and Reserves**

Marine parks are managed for marine conservation and recreation, with areas zoned for commercial fishing on a sustained yield basis. Marine nature reserves are managed for the conservation of marine and terrestrial flora and fauna and their habitats. Fishing and collecting are not permitted.

In June 1994, the area of marine parks comprised approximately 1,013,940 hectares. The area of marine nature reserves at the



same period was approximately 132,000 hectares. There were no changes during the year.

## Fauna

*Contributed by CALM*

### Mammals

In Western Australia, 147 native mammal species are found. Two species of marine mammal, the Australian Sea-lion and the New Zealand Fur-seal, 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. Twenty-four species of mammals, including the Honey Possum, the Kimberley Rock-rat and the Western Brush Wallaby, 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 28 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 Mammals

The New Zealand Fur-seal (*Arctocephalus forsteri*) and the Australian Sea-lion (*Neophoca cinerea*) 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 (*Megaptera novaeangliae*) and the Southern Right Whale (*Eubalena australis*).

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 1934-63. 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 Mammals** Mammal conservation depends on significant suitable habitat areas being maintained and control of introduced competitors or predators. Important terrestrial reserves for mammals conservation currently include Bernier, Dorre and Barrow Islands, Perup, Tutanning, Boyagin and Prince Regent Nature Reserves, Drysdale River and Fitzgerald River National Parks and Dryandra Woodland. It is critical that species requirements are researched so that habitat areas can be managed appropriately.

Recovery plans are being written for threatened species to specify actions to ensure the survival of each species, using habitat and population management strategies determined by prior research.

Habitat management strategies include special fire regimes and guidelines to harvest timber, to manage public use of strategic areas, and to create vegetated corridors to link isolated habitats. For instance, research in the southern jarrah forest has shown that the dense thickets required by Tammar Wallabies for protection from fox predation thin out after long periods without fire. Prescribed burning is now used in certain areas to regenerate those thickets as their value to Tammar declines.

**Marine Mammals** Marine mammals have not suffered the same declines as the land dwelling species. However, populations of the Australian 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 32 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, Little Lorella, 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 nests 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.

**Reptiles**

Australia's reptile fauna includes more than 750 known species. Of these, 520 species occur in Western Australia. The sandy deserts of Western Australia have one of the richest reptile faunas in the world; the Great Victoria Desert and the Great Sandy Desert each has about 65 species of lizards.

**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 threatened 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 hatchlings since 1989. 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 *Hylidae*

(Tree Frogs - 25 species) and the *Leptodactylidae* (Ground Frogs - 53 species). Western Australia's frog fauna is comparatively rich, with its 78 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 *Geocrinia*, *Uperoleia*, *Heleioporus* and *Neobatrachus*, while the burrowing genera *Arenophryne* and *Myobatrachus* occur only in this State.

**Status**

Two species, *Geocrinia vitellina* (Orange-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.

**Terrestrial  
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.

**Status**

Invertebrates are characteristically smaller and therefore more abundant than vertebrates. Only Jewel Beetles (Family: *Buprestidae*) and the primitive ant, *Nothomyrmecia macrops*, are 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 Freshwater Fauna**

The majority (around 1,040) of the 1,500 species of fish found in Western Australian waters are tropical. The remainder are either 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 aquifer 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 (NPNC). 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 Department of Environmental Protection*

### **Environmental Protection in Western Australia**

Environmental protection in Western Australia entails conservation and enhancement of the environment and management for its protection. It includes stopping new pollution and cleaning up old pollution. It is achieved through a system which allows development to occur while ensuring that the environment is protected.

### **Environmental Protection Policies**

Environmental protection policies (EPP) are a powerful means of protecting special parts of the environment. They have become a key instrument of the Environmental Protection Authority's drive to get people to "own and care for their environment". Under the Environmental Protection Act, the EPA or other groups can propose protection policies for particularly sensitive areas. The protection offered under these policies can extend to any part of the environment: waste, noise, smell or any other pollution-causing activity.

EPP's allow for extensive public consultation so those most affected by the law have a stake in framing it. The policies vary according to specific needs but generally they set out controls to which people, governments and companies must adhere in ensuring Western Australia's environment is protected. As well, the Act allows for policies to be reviewed after seven years to ensure they are continuing to function as intended.

Policies already in place:

- Kwinana (Atmospheric Wastes) Policy 1992;
- Peel Inlet - Harvey Estuary Policy 1992;
- Swan Coastal Plain Lakes Policy 1992;
- Gnangara Mound (Crown Land) Policy 1992;
- Goldfields Residential Areas (Sulphur Dioxide) Policy 1992; and
- Ozone Protection Policy 1993.

Severe penalties may be imposed on people and companies found breaking EPP requirements. Individuals can be fined up to \$5,000 each, or for a continuing offence, \$1,000 a day. With companies, the corresponding fines are up to \$10,000 each or \$2,000 a day.

### **Waste Management**

Each year more than two million tonnes of Western Australia's solid waste is dumped in landfills. Much of this material has the potential to contaminate important groundwater or release harmful greenhouse gases such as methane and carbon dioxide.

Western Australia is committed to reducing the volume of waste to landfill by half by the year 2000.

Landfills are now subject to stringent environmental management requirements and are becoming costly to establish and extremely difficult to locate. To preserve the life of existing sites and reduce our complete dependence on disposal it is essential to improve the way we management our solid waste stream.

In managing the problem of excessive waste, it is widely accepted that the following hierarchy of action should be used:

- waste avoidance;
- reuse and recycling;
- treatment and processing;
- energy recovery;
- safe disposal; and
- landfill gas recovery.

In 1994 the Office of Waste Management was created as a division of the Department of Environment Protection. The move will improve the State's co-ordination of waste management policy and regulation, through creating a specific waste management agency, and a representative board to advise the government in this area.

### Legislation and Management

Environmental protection occurs in large part through the *Environmental Protection Act 1986-93* which is administered by the Environmental Protection Authority (EPA) and the Department of Environmental Protection.

The EPA is an independent statutory authority which provides environmental advice to Government. The EPA consists of five members, including a chairman, who are not public servants and whose objectives are to protect the environment and to prevent, control and abate pollution. The EPA cannot be directed on the advice it gives.

The Department of Environmental Protection provides administrative and technical support to the EPA and to the Minister for the Environment. The department's activities centre on:

- environmental impact assessment;
- strategic environmental studies;
- environmental policies;
- pollution control;
- waste management; and

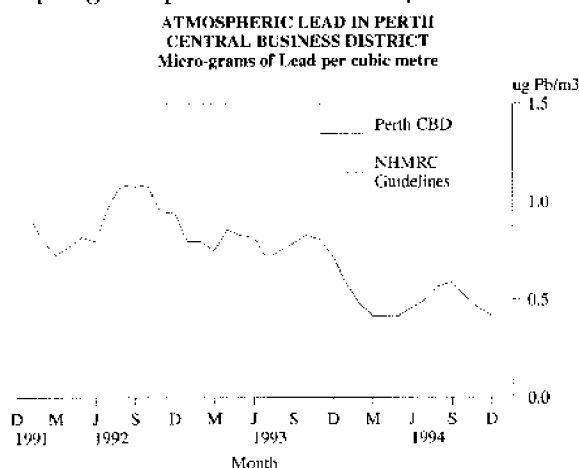
## Atmospheric quality of the Perth Central Business District Contributed by the Department of Environmental Protection

### Atmospheric Lead

In recent years concern has arisen over the amount of lead in Perth's air. The major source of lead in Perth's air is motor vehicle exhausts.

The strategy to eliminate lead in super grade petrol which the department introduced in 1991 (with the co-operation of industry), continues to have a positive effect on lead levels in Perth's air.

The graph shows the improvement in lead levels for Perth - well below the guidelines recommended for human health by the National Health and Medical Research Council.



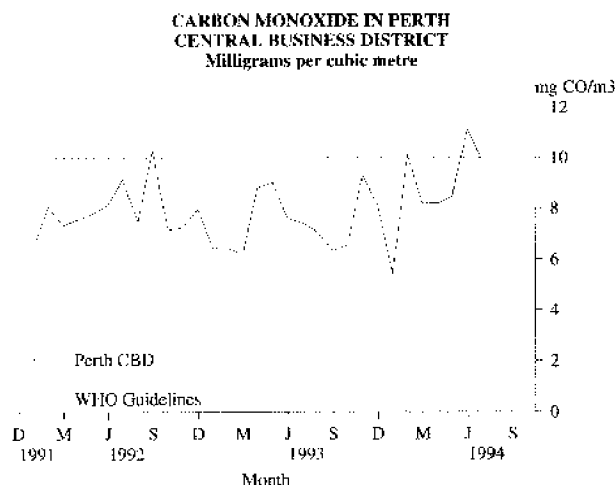
Source: Department of Environmental Protection

### Carbon Monoxide

It is estimated that 75 per cent of carbon monoxide in Perth's CBD comes from motor vehicle exhaust.

Perth's carbon monoxide levels are generally below World Health Organisation guidelines. There was an exceedance in May 1994.

The graph shows different summer and winter high patterns for carbon monoxide levels.



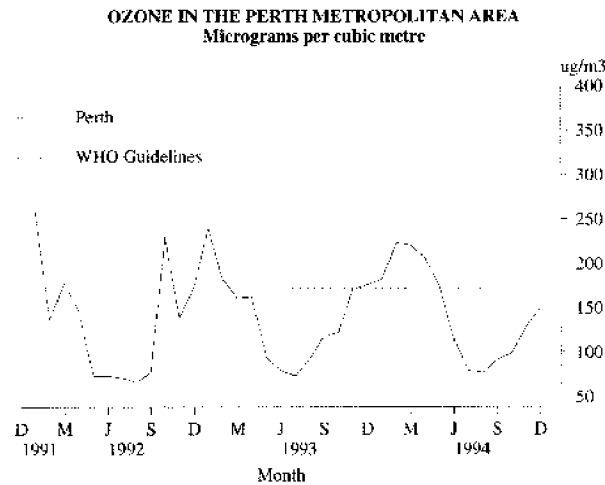
Source: Department of Environmental Protection

## Ozone

Photochemical smog is a mixture of gases formed when exposed to sunlight. One of the main sources of these gases is motor vehicle exhausts. Ozone is one of the gases which is formed.

In the upper atmosphere ozone acts as a filter to harmful ultra violet light. At ground level ozone damages vegetation and buildings.

It can also cause respiratory and eye problems in humans. Ozone is usually more prevalent during the summer months as this graph shows. It depicts the highest readings obtained from eight air quality monitoring stations supporting the Perth Photochemical Smog Study.



Source: Department of Environmental Protection

- corporate services.

The department's environmental program is:

- *To ensure, with the Western Australian community, that our environment, with the life it supports, is protected for now and into the future.*

The programme is underpinned by the basic philosophy that in environmental protection there is a threshold defining an acceptable versus an unacceptable environment. Environmental protection is largely working with people to protect the environment to meet aspirations based on human values.

## References

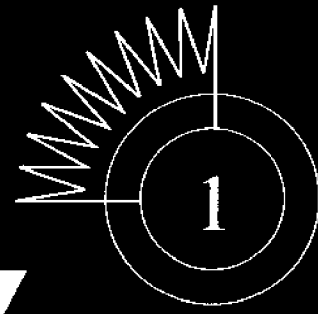
### ABS References

*Australia's Environment Issues and Facts (4140.0).*

### Other References

*State of the Environment Report.* Joint production by the Environmental Protection Authority, the Department of Conservation and Land Management and the Department of Land Administration. December 1992.





# HISTORY

## MUSIC

## Chapter 1

# HISTORY

---

Contents	Page
<b>The Exploration of Western Australia</b>	
<b>Beginnings</b>	<b>3</b>
The Earliest Years	3
The Expeditions of George Grey	6
The Triumph of John Eyre	10
<b>New Pastures</b>	<b>11</b>
Roe's Last Expedition	11
Augustus Gregory and the Murchison	11
Austin's Ordeal	12
Breakthrough on the Gascoyne	13
Opening the Pilbara	14
Across the Bight	14
First of the Forrest explorers	15
Eastward from the Avon	15
<b>The Desert Crossings</b>	<b>17</b>
<b>New Horizons</b>	<b>21</b>
First into the Kimberley	21
Scientific Surveys	22
<b>Further Reading</b>	<b>23</b>
<b>References</b>	<b>24</b>

## Chapter 1

# HISTORY

---

## The Exploration of Western Australia

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

### Beginnings

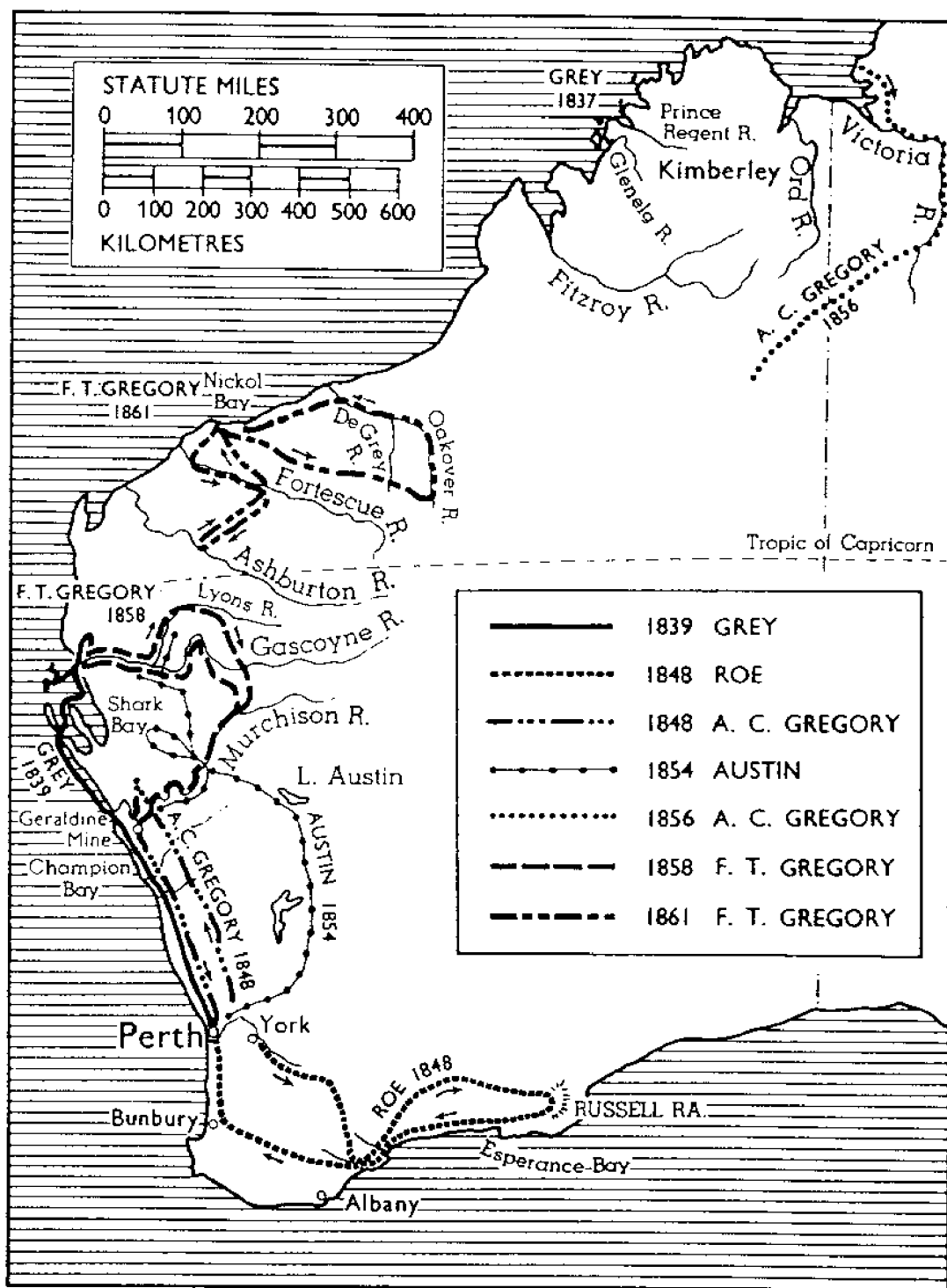
#### *The Earliest Years*

At the time of the first settlement of Western Australia, very little was known of the nature of the country beyond the usually uninviting coastline. The first opportunity for more prolonged investigation came in 1826 with the establishment of the British military outpost at King George's Sound. Considering that the small number of occupants of the garrison station were either military personnel or convicts, a remarkable amount of knowledge of the immediate surroundings and the local Aborigines was accumulated. However, the role of the force, together with other demands on their time, generally precluded any long-range exploration. Even Captain James Stirling's 1827 reconnaissance prior to the establishment of the Swan River Colony was confined to the Swan and Canning Rivers and their immediate environs.

With the arrival of the first colonists at the Swan River in 1829, the allocation of river frontages for farming soon outstripped supply, and pressure developed for the opening of additional areas. The settlement system involved first the identification of areas considered suitable, the declaration of such areas as being open for selection, and then the granting or sale of the land to the colonists. Such procedures made heavy demands on the embryonic government service and it is not surprising that Stirling relied extensively on naval and military officers for much of the earliest exploration. Naval personnel with appropriate skills were available from H.M.S. *Sulphur*, which accompanied the transport *Parmelia* to the colony and remained for several years, while the British Army maintained a presence until late in the 19th century.

To start with, excursions were made in small boats to areas south of Fremantle which Stirling had observed from his earlier reconnaissance. One of the most significant sea journeys was made by Surgeon Captain Alexander Collie and Lieutenant William Preston, of the *Sulphur*, along the coast from Cockburn





Map showing the exploration routes in Western Australia, 1839-61. Map: Reproduced by Permission of the AUSTRALIAN ENCYCLOPEDIA (Australian Geographic Society).

Sound to Geographe Bay, including a penetration of Peel Inlet and the lower reaches of the Murray and Harvey Rivers. This exploration led almost immediately to further visits, followed by the allocation of land along the Preston River, the Leschenault Inlet and the later site of Bunbury. Stirling and Captain Mark Currie, the Fremantle harbour master, then travelled by sea with another group of potential settlers to the mouth of the Blackwood River where, after a brief inspection of the surrounding areas, additional land was declared open in the vicinity of Augusta.

The country around King George's Sound was explored most comprehensively in this period by the naval surgeon Thomas Braidwood Wilson (1792-1843). Wilson's most important journey was undertaken in December 1829, with a team consisting of John Kent, the officer in charge of the commissariat, a soldier of the 39th Regiment, two prisoners of the Crown, and an Aboriginal guide. The six men travelled in a wide circle from Albany, taking in Mount Barker and the Kaglan, Kent, Denmark and Hay Rivers. Mount Lindesay was discovered, as well as Mounts Roe, Mitchell and Frankland, the first being named after the commanding officer of the 39th Regiment, and the others after Surveyors-General of the Australian colonies. Wilson returned to the Sound by way of the large inlet which Stirling later named in his honour after a walk of nearly 200 miles over previously unknown country.

None of the initial explorations significantly alleviated the settlers' hunger for land, partly because of the remoteness of the areas from the heart of the colony at Perth and the continued practice of locking up large tracts in relatively few hands. The first major breakout from the confines of the Swan and Canning rivers followed several explorations to the east of the Darling Ranges undertaken in 1830 by Ensign (later Lieutenant) Robert Dale, a young officer of the 63rd Regiment. On the initial journey, Dale discovered Mount Mackie, the Dylott Range and Mount Bakewell, together with the splendid Avon Valley towards which these features led him. Stirling then travelled "over the hills" with a party of prospective settlers and set in motion the machinery for distributing land in the valley, as well as designating the towns of York, Northam and Beverley. Dale, who acted as guide to Stirling on this expedition, subsequently continued further eastward with six volunteers as far as Mount Stirling and Mount Caroline.

The longest journey undertaken during this period was one by Captain Thomas Bannister, who blazed an overland route from Perth to King George's Sound just as the military outpost was about to pass from the jurisdiction of the Governor of New South Wales to that of Stirling. Bannister, then Government Resident at Fremantle, set out from there on 14 December 1830, accompanied by George Smythe, of the Survey Department, and two others. The party took until 4 February 1831 to reach their destination on

a journey plagued by navigational problems and bickering between Smythe and his leader. Nevertheless, Bannister established the feasibility of linking the two settlements overland and threw the first light on the characteristics of the intervening country. In 1835, Stirling himself went overland with the Surveyor General, John Septimus Roe (1797-1878), to examine alternative routes for a projected road. On this trip, Roe, with Stirling's consent, gave the name Stirling Range to the "remarkable and picturesque" range of mountains to the north of Albany. A few days later, the Governor returned the compliment by naming the Bennett Range "in honour of Mrs Roe." The first road was eventually marked out by Assistant Surveyor Alfred Hillman in 1837, when a military post was also established at Kojonup.

During the second half of the 1830's the pressure for further expansion diminished as a consequence of adverse economic conditions and the sharply reduced intake of colonists. However, curiosity with this "bright and savage land" remained very much alive, notably with George Fletcher Moore (1798-1886) settler, advocate-general, and diarist. On a relatively short excursion in April, 1836, he discovered the river which bears his name to the north of his holding on the Upper Swan. Soon after this, Moore made an eastward journey to examine land in the new district of Toodyay and to search for an inland sea spoken of by Aborigines, whose language and culture he studied closely. Accompanied by George Leake and Richard McBryde Brown, Moore went as far as Mount Anne (near Meckering) without finding the elusive "sea", now known to be the salt lake flats near Kellerberrin. However, Moore's exploration of Toodyay Valley led to the discovery of the springs at Bolgart, which became a summer watering place for pastoralists' flocks.

Again in 1836, Moore accompanied Roe on a further search for the imaginary sea. This was a much better equipped expedition, which also included Assistant Surveyor George Smythe and four police, with provisions for 35 days. The seven men set out from York on 2 October and returned to Moore's farm on 11 November. Roe, then 39 years old, led the expedition as far east as Mount Walker before turning north and travelling past Lake Brown to Mount Marshall, near Bencubbin. A westerly course was then taken to the Wongan Hills, the highest of which Roe named Mount Matilda — another reminder of his wife — and the Moore River. The journey was a significant physical achievement, but otherwise disappointing. Moore wrote in his diary: "We have been out forty days and covered nearly 600 miles. We did not see as much water at once as there is in our fish pond, and were not able to decide which way the water would run if there were any."

### *The Expeditions of George Grey*

After Roe's well known journey, there was a long pause before the colonial government took any further initiatives. The most notable expedition, in 1837, was mounted directly from England at the suggestion of two British Army officers, and without any

local consultation, probably because of a late change in the starting point of the exploration. The ambitious objectives, set out in a letter from Lord Glenelg, the Secretary of State for the Colonies, to Lieutenant George Grey (1812-1898) and his second in command, Lieutenant Lushington, included gaining "information as to the real state of North-Western Australia, its resources, and the courses and directions of its rivers and mountain ranges...and all details that might bear upon its capabilities for colonization or the reverse". The exploration was seen as complementing the coastal surveys being undertaken by the famous H.M.S. *Beagle*, in which Grey and his party of four travelled from England to South Africa. On arrival at Cape Town, Grey chartered a schooner to take the group, now increased to twelve, to the Prince Regent River, the point of departure for an exploration southwards "towards the Swan."

One of the oddities of this expedition was that, after reaching Hanover Bay on 3 December, 1837, Grey hoisted the British flag and, in his words "went through the ceremony of taking possession of the territory in the name of Her Majesty and her heirs forever." Soon after moving inland, Grey was wounded in the hip in a chance encounter with the local Aborigines. This virtually determined the fate of the poorly conceived enterprise, although the party still undertook some limited exploration of the country in the vicinity of the Prince Regent River and Hanover Bay. The Glenelg River was reached, followed by the Stephen Range, named after the Under Secretary of State for the Colonies. The expedition was then obliged to return to its vessel, due to Grey's worsening condition, the formidable physical obstacles confronted by the inexperienced men, and supply problems.

After recuperating in Mauritius, Grey arrived in Perth with the intention of implementing an alternative option considered in London, namely an exploration of the territory in a northerly, rather than southerly, direction. This time, he engaged an American whaler to convey his large party of eleven (including four from his previous attempt, three seamen, three volunteers and "an intelligent native of the Swan"), together with three whale boats and provisions for five months, to Bernier Island in Shark Bay. The plan envisaged the whale boats supporting the land operation and then returning the party to the Swan in the event of a larger vessel still being unavailable. This expedition, which left Fremantle on 17 February, 1839, was again dogged by a series of misfortunes, including attacks by Aborigines, loss of boats and damage to provisions. North of Bernier Island, the expedition's main discoveries were the Gascoyne River and the Lyell Range.

Grey had already decided to return to Perth before his two remaining boats were wrecked at the mouth of the Murchison when attempting a landing. The party then had no alternative but to walk the three hundred miles southwards through unknown

### ABORIGINAL COMPANIONS

Contributed by John Clark, Royal Western Australian  
Historical Society

It is difficult to exaggerate the debt owed by most of the explorers of Western Australia to the Aborigines who accompanied them on their expeditions. As hunters of kangaroos, emus and other game, as interpreters and, especially, as finders of water (practically a daily imperative on expeditions equipped with horses) they were unsurpassed. As well, the Aborigines, with their sense of fun and carefree attitudes, did much to relieve the tensions and monotony of daily life on outback journeys.

Aborigines were employed as guides from the earliest days of the Colony. Mokare, the famous Aborigine of the Albany area, accompanied Dr. T. B. Wilson on his important exploration to the north and west of King George's Sound in 1829. However, the involvement of Aborigines remained relatively low-key until around the middle of the nineteenth century. Longer journeys into drier areas, were being undertaken, simultaneously with the absorption of Aborigines into some aspects of the administration of the colony, notably as trackers in the police force.

John Eyre's mix of one white and three Aborigines (Wylie, Joey and Yarry) on his team for the crossing of the Nullabor was exceptional for the 1840's (and rare at any time) due to the unusual circumstances in which the challenge was mounted and his apprehensions concerning the risks of the undertaking. Joey and Yarry, who eventually absconded, had accompanied Eyre on a number of earlier journeys, while Wylie, the King George's Sound Aborigine, had travelled back to South Australia with the explorer after his voyage to Albany in 1840. Even after the Baxter tragedy, Eyre wrote that he could not help feeling for the "sad condition" of Joey and Yarry, "the miseries and suffering they would have to encounter, and the probable fate that awaited them."

Robert Austin set the pattern for the future when he took two Aborigines, Narryer and Souper, on his 1854 expedition to the east and north of the settled areas. His report on the expedition constantly refers to the manifold tasks the two were called upon to undertake, some requiring almost super-human endurance in the trying conditions of the Murchison. The strength of the two Aborigines' relationship with the rest of the party is very apparent, especially their care and self-sacrifice after Charles Farmer had accidentally shot himself during a long search by the trio for a strayed horse. Austin, who described them as "most faithful, generous and devoted companions", showed his

appreciation by naming Mount Narryer, at the northern limit of his exploration, and hoped to return with one of them for another attempt on the Gascoyne.

Aborigines came into their own when the focus of exploration shifted to the arid interior from the 1860's onwards. Cowitch, a York Aborigine, participated in the expeditions of both Lefroy (1863) and Hunt (1864), making a number of independent excursions with the two leaders. The arrival of camels and their Afghan drivers hardly altered the situation, even though the search for water could be undertaken less frequently. Warburton, Giles and Carnegie each took Aborigines on their long desert crossings. Charley, the Aborigine on Warburton's expedition, was one of two men still fit enough to make the final dash to the Oakover river to save the stricken party. Giles's Aboriginal companion on his 1875 expedition, the youthful Tommy Oldham, discovered water at Queen Victoria Spring and Ularring, the two most vital points on the east-west crossing. Carnegie had reason to be grateful for the presence on his expedition of the McDonnell Ranges Aborigine, Warri, who made an exemplary contribution of bush craft skills in a somewhat inexperienced team.

Undoubtedly, the most famous of the Aborigines in this field were the three "Tommys" - Tommy Windich, Tommy Pierre and Tommy Dower - one or two of whom accompanied the Forrest brothers on each of their important expeditions. Windich was with John Forrest on his Leichhardt search of 1869, and again on the Nullarbor crossing of 1870, before accompanying Alexander Forrest on his follow-up exploration of the Hampton Plains in 1871. Windich was then joined by Tommy Pierre, another from the Bunbury district, for the brothers' desert crossing of 1874, a classic exercise in cooperation between explorer and Aborigine. It was Alexander, riding ahead with Pierre, who made the important discovery of Alexander Spring, and John with Windich who discovered Barlee Spring, thereby clinching the success of the expedition. Alexander then took Tommy Pierre and Tommy Dower on his Kimberley expedition (1879), but the role of the Aborigines was diminished on this occasion by their prolonged illnesses in the unaccustomed environment. Tommy Pierre's death on his return home ended an association with the Forrest family at Bunbury extending over more than twenty-five years. Tommy Windich had predeceased him by several years while working on the telegraph line from Perth to Adelaide. The inscription on his tombstone at Esperance reads: "Erected by John and Alexander Forrest, in memory of Tommy Windich. Born near Mount Stirling, 1840. Died at Esperance Bay, 1876. He was an Aboriginal native of Western Australia, of great intelligence and fidelity, who accompanied them on exploring expeditions into the interior of Australia, two of which were from Perth to Adelaide. Be Ye Also Ready."

territory. This became a dash for survival on "starvation rations" of salt meat and flour rather than exploration in the real sense of the word. The fact remains that it was Grey who bestowed names on most of the important physical features in the coastal strip from the Murchison down to the settled areas, including the Hutt, Bowes, Chapman, Greenough, Irwin and Arrowsmith Rivers, and the Gairdner Range. As the expedition fell into further disarray, Grey went ahead from the Irwin to seek assistance. He reached the capital on 21 April. Dr. Walker, a surgeon and naturalist who had accompanied Grey on his Kimberley exploration, was reported to be unrecognisable as he hobbled into Perth in an emaciated condition. Frederick Smith, a young friend of Grey's, died of starvation, his body being found by Warrap, an Aborigine participating in the widespread search led by Roe which followed Grey's arrival.

### *The Triumph of John Eyre*

Two years later, another redoubtable explorer struggled into Albany after an epic journey which ranks among the foremost feats of courage and endurance in the history of Australian exploration. Edward John Eyre (1812-1901) and his Aborigine companion, Wylie, were the survivors of a party of five — two whites and three Aborigines — which set out from Fowlers Bay in South Australia on 25 February, 1841 in search of an overland route to Western Australia. On this remarkable journey, Eyre faced the twin challenges of porous limestone of the Nullabor Plain, which precluded the accumulation of surface water, and the abrupt termination of the Plain in mighty cliffs, over 300 feet high, barring access to the sea. The central, and most difficult, section of the journey was accomplished in three stages: on the first, which ended at Eucla, the party walked or rode (depending on the condition of their horses) along the top of the escarpment searching anxiously for a descent to the sandhills of the shore line, where water could sometimes be found; on the second, where the escarpment moves some miles back from the sea, they travelled along the lower level through heavy vegetation, the firesome sand, or, in some places, in the sea itself up to Matthew Flinders' Twilight Cove; on the third stage, they were forced back to the top of the cliffs until these finally began to fade away near Point Culver, east of Esperance.

On 27 April, the party set out from Twilight Cove on what Eyre described in his journal as "the last fearful push, which was to determine our fate." Two days later came the murder of the "overseer", John Baxter, by the two South Australian Aborigines in his party, who then absconded with rifles and provisions on what Eyre considered a doomed attempt to return to Fowlers Bay. It was then left to Eyre and Wylie, a King George's Sound Aborigine, to complete the journey to Albany — a challenge they confronted triumphantly. By early May, the two were virtually free of the cliffs bounding the Bight and able to descend again to the beach. On 16 May, Mount Ragged was sighted and named, followed by the Russell Range (after the Secretary of State for the

Colonies) which constituted the first great break in the character and appearance of the country for many hundreds of miles. Early in June, near Thistle Cove, the explorer and his companion were "delighted beyond measure" to encounter the French whaler "Mississippi" lying in an inlet which Eyre named Rossiter Bay after the vessel's English captain. Rested, and with stores provided by Rossiter, Mount Barren was passed on 23 June and then on 7 July they entered Albany. Word had spread among Wylic's friends and relations, but Eyre's arrival was practically unnoticed. "Finding that a vessel would shortly sail for Adelaide", he wrote "I at once engaged my passage, and proceeded to make arrangements for leaving King George's Sound."

#### **New Pastures**

The middle of the 1840's marked the beginning of a much more dynamic phase in the exploration of the colony. One contributing factor was the introduction in 1844 of a system of depasturing licences which enabled pastoralists to lease large areas of land at cheap rates rather than having to purchase their properties. A second influence was the arrival in Perth of a new and energetic governor, Charles Fitzgerald, who immediately initiated a more vigorous approach to the opening of new areas.

#### *Roe's Last Expedition*

One of Governor Fitzgerald's first actions was to launch two major expeditions, one to investigate the areas inland from the settled districts to the south of Perth, and the other to the north. The southern expedition, led by Surveyor General Roe, with two members of his department, two soldiers and an Aborigine, left York in October, 1848. The plan was to take a south-easterly route to Cape Riche and then to examine the country towards Eyre's Russell Range. From Cape Riche, Roe travelled up the Pallingup river for some distance before turning north-east to a well-watered Aboriginal meeting place, known as Jerramungup, followed by the Gairdner River, thence to Mount Madden (named for the Colonial Secretary) and the Fitzgerald Peaks (for the Governor). As the expedition travelled further east, dense scrub and lack of water conspired against the explorers, who then took a southerly course towards the Russell Range, which they reached only after extreme privations. From Mount Ragged, Roe decided to return to Cape Riche on a course somewhat to the north of that followed by Eyre.

The country he passed through, especially the area inland from Esperance, proved more attractive than that of the outward journey. Among the features discovered and named on this leg were the Phillips and Fitzgerald rivers, where traces of coal were found. Perth was reached on 2 February, 1849, after a journey of some 1,800 miles. This was Roe's last exploration, although he continued as Surveyor General for a further twenty-one years.

#### *Augustus Gregory and the Murchison*

The expedition commissioned by Governor Fitzgerald to investigate the region north of Perth was led by Augustus Charles



Gregory (1819-1905), an Assistant Surveyor in Roe's department, who was destined to become one of Australia's most famous explorers. Five years after entering the Survey Department in 1841, Gregory, with two of his brothers, had undertaken a semi-private exploration which gained official attention. On that occasion, the men travelled eastward from Bolgart Springs as far as Mount Jackson, then back via Mount Churchman (named for Gregory's mother), Lake Moore and Grey's Irwin River, where the first discovery of coal was made while tracing the river to its mouth. The task now assigned to Gregory was "to proceed to the Gascoyne River to examine its pastoral potential and possible navigability; then to proceed south to explore the area around Shark Bay."

The Gascoyne area had remained untouched since George Grey's visit there in 1839, and the strategy this time called for an overland expedition rather than an approach from the sea. From Walebing, the six-man team reached the Murchison and established a depot there, but the dry country and the sufferings of their horses frustrated an attempt to reach Shark Bay. Gregory then concentrated on exploring the Murchison, finally breaking through the great perpendicular cliffs of red sandstone and deep ravines to discover an abundant supply of grass and water in the fertile valley below. Another outcome was the discovery by James Walcott, one of the three settlers on the expedition, of specimens of galena in the bed of the river, which led to the establishment of a small lead and copper mining industry in the vicinity of Northampton.

In 1852, the mining company exploiting this mineral find made representation to the government for further exploration of the country between the Murchison and Gascoyne. This task was again handed to Augustus Gregory but once more the Gascoyne eluded him — and this was to be his last try. Two years later, Gregory left the colony to lead the famous British-inspired North Australian Expedition, followed by a search for the lost explorer Leichhardt and his appointment as first Surveyor General of the new colony of Queensland.

The North Australian Expedition enters the history of the exploration of Western Australia in as far as Gregory discovered Sturt Creek and followed it for nearly three hundred miles to its termination in what became known as Gregory's Salt Lake, south of Halls Creek. From a vantage point on Mount Wilson (named for the geologist on his expedition) Gregory looked out on an immense expanse of what he described as "impenetrable desert", but which was eventually conquered by a new generation of explorers coming painfully from the south.

### *Austin's Ordeal*

The next to face the challenge of the Murchison/Gascoyne was Assistant Surveyor Robert Austin, who worked on the ill-fated Australind settlement before entering the service of the Survey

Department. The objectives were more ambitious than those of Gregory's expedition, combining exploration of the interior to the east of the settled districts with that of the north and along the Gascoyne. Hence the expedition set out from as far south as Northam (7 July 1854) and concentrated initially on exploring the area around Lake Cowcowing, which had been narrowly missed by Roe in 1836.

The party then crossed Augustus Gregory's 1846 track at Mount Churchman and travelled via Mount Magnet (so named because of the influence of the ore-body on Austin's compass) to Mount Murchinson, the highest point in a range adjoining the middle reaches of the river. At a place known as Poison Rocks (close to the later gold-mining centre of Youanmi) the expedition ran into serious trouble when as many as ten of its twenty-seven horses died after eating poisonous gastrolobium, the biggest disaster of its kind in the history of the exploration of Western Australia.

A month after passing Mount Magnet gloom descended on the group during the ordeal of a young settler in the party, Charles Farmer, who died of lockjaw after accidentally shooting himself — an event commemorated by Austin in the naming of Mounts Charles and Farmer. From Mount Murchison, the explorer made two attempts to reach his destination, where a vessel was awaiting him, but within 50 miles of Shark Bay and 100 miles of the Gascoyne he was forced to retreat by the absence of water ahead, shortages of provisions and the overwhelming heat. Mount Welcome, near the junction of the Murchison and Roderick Rivers, provided a temporary haven before the main stream was followed down to the Geraldine Mine, where the party arrived "looking thin and jaded" with their four surviving horses on 20 November.

*Breakthrough on the Gascoyne*

The man who finally broke this discouraging sequence of attempts on the Gascoyne was Augustus Gregory's brother Francis Thomas Gregory (1821-1888), another Assistant Surveyor. When stationed at Geraldton in 1857, Frank as he was known, took advantage of heavy flooding of the Murchison to trace the river to its source.

Because of the season, he found rich vegetation in places where Austin had suffered severely, thereby encouraging the pastoral community to offer horses and equipment for a further examination the following year. This was a more formally constituted expedition and included the Surveyor General's son, James Roe, as second-in-command, along with four others and an Aboriginal policeman named Dugal. After travelling up the Murchinson again as far as Mount Gould, Gregory adopted a north-westerly course which took him at last to the Gascoyne. The river was followed on its southern bank to the estuary, where Carnarvon now stands, and then upstream on the opposite side to the point where the Lyons (named "in honour of the gallant

admiral of the name" — a hero of the Crimean War) comes in from the north. From here, the tributary was traced to Mount Thompson, followed by a hill of "considerable elevation", named Mount Augustus, after Gregory's brother "now conducting an expedition in quest of the remains of Dr. Leichhardt". On 3 June, when the party climbed this remarkable feature, now known to be the world's largest monocline, the air was very clear, enabling them to take bearings on hills more than a hundred miles distant and to sketch the courses of rivers for more than twenty miles. The following day, the fifty-first from their starting point, Gregory called a halt to exploration and began his return via Mount Gould to the Murchison and thence to the Geraldine Mine.

## *Opening the Pilbara*

In 1861, Frank Gregory undertook yet another remarkable journey. While on a private visit to England the previous year, he had gained support for further exploration of the northern areas of the colony from the Colonial Office, the influential Royal Geographical Society and other interests.

The strategy Gregory adopted on this occasion was to move his party by sea to a base camp at Nickol Bay, where Roebourne was soon to become the most advanced settler outpost in the north-west. From there, he planned two major explorations, one to the south to link up with his 1858 journey along the Lyons River, and the second to the north-east. The southward exploration proved to be a major triumph, which placed on the map some of the most important watercourses of the Pilbara, including the Fortescue, the Ashburton and the Hardey. The Fortescue became the expedition's gateway through the Hamersley Range (named "for one of the most liberal promoters of the expedition") after the failure of earlier attempts to confront the rugged barrier more directly. On 25 June 1861, the explorer reached the summit of a granite and sandstone tableland from which, in the words of his journal, "we had at last the satisfaction of observing the bold outlines of Mount Augustus bearing south-south-east about thirty miles".

After resting briefly at Nickol Bay, Gregory set out to explore the country to the east. Again he came upon a series of watercourses — the Sherlock, Harding, Yule, Strelley, Shaw (with the adjoining Norton Plains), De Grey and Oakover Rivers. Near the eastern limit of his journey, Gregory passed into country of vastly different character, described in his journal as "sandy plains of vast extent, no object being observable... except for ridges of red drift sand, in many parts bare of vegetation". With two of his men, Gregory rode into this wasteland for several days, reaching Mount Macpherson, the expedition's furthest east, on 7 September 1861, but the trio narrowly escaped with their lives. Gregory then decided upon what he described as "the only other useful course open to us — that of examining down to the sea the rivers already discovered". Nickol Bay was reached on 17 October.

*Across the Bight*

Governor Frederick Weld's arrival at the Colony in September, 1869 was soon followed by that of the new Surveyor General, Malcolm Fraser, both men coming from New Zealand with fresh approaches to exploration as well as the administration of the Survey Department. Weld's immediate aim was to undertake a more thorough investigation of the pastoral potential along John Eyre's track of 1840, while at the same time examining the feasibility of establishing a land link between Western Australia and South Australia. This task was given to John Forrest (1824-1918), who entered the Survey Department in 1865, as the first colonial-born appointee, and ultimately rose to the position of Surveyor General in 1883.

*First of the Forrest explorers*

Forrest's transition from routine survey work to exploration on a wider canvas began in 1869 when, at the age of twenty-one he was selected as leader of one of many expeditions sent out to search for the remains of Ludwig Leichhardt who, together with his large party, had disappeared without trace more than twenty years previously. The search, which originated from reports by Aborigines, focused for more than two months on the desolate salt lake country around Lake Barlee and eastward to Mount Margaret, Mount Weld and Lake Carey, near the future site of Laverton, before the expedition's supply position forced a withdrawal. The expedition had covered some two thousand miles over nearly four months. As for the remains of Leichhardt's party, Forrest concluded that the bones referred to by the Aborigines were probably those of Austin's horses at Poison Rocks.

Forrest planned his new assignment meticulously around the concept of provisioning from a supply vessel in the Great Australian Bight. His team included his brother, Alexander, as second-in-command, and the trusted Tommy Windich as one of two Aboriginal guides. The journey began on 30 March 1870 with an overland march to Esperance, where supplies were landed from their vessel, the "*Adur*". The crossing itself was undertaken in stages from Esperance to Israelite Bay, from there to Eucla (where they were re-supplied), then to the head of the Bight and, finally, to Fowlers Bay. Generally speaking, Forrest followed Eyre's route quite closely, the principal difference being that Forrest remained above the cliffs throughout the central belt. From Eucla, the expedition travelled mainly through known and settled districts to Adelaide and, following a rousing welcome there, returned to Albany by sea.

*Eastward from the Avon*

The country to the east of the Avon received little attention for some three decades after the initial explorations of Dale and Roe, whose reports had aroused little enthusiasm for the pastoral potential of those areas. However, as land pressure in the valley mounted and pastoral laws were relaxed, a few brave spirits established sheep stations as far out as Roe's Mount Emu (Narimbeen) and Dales's Mount Stirling. Simultaneously with Frank Gregory's remarkable exploration of the Pilbara, a small

party of settlers led by C. E. Dempster undertook a two-month exploration east of Northam to the salt lakes between Southern Cross and Augustus Gregory's Mount Jackson to the north, including Hamersley lakes, Lake Deborah and Lake Julia, each of which they named.

The outstanding earlier explorers of the Eastern goldfields were Henry Maxwell Lefroy (1818 -1878), a Superintendent of Convicts at Fremantle and man of affairs, and Charles Cooke Hunt (1833-1868) a young Scottish Assistant Surveyor in the Survey Department. In 1863, following representations by the York Agricultural Society, Lefroy was given leave of absence from his official duties to explore the country inland from York, where he received a hearty send-off by "a large gathering of the population" on 7 May. His 85-day journey took him through the future sites of Coolgardie and Kalgoorlie as far east as 122 deg. 3 min. E. longitude, where water shortages and failing horses forced him to retreat. Among the features discovered by Lefroy were Mounts Burgess and Robinson, together with a peculiar formation, the Gnarlbine Rock, which was to prove a vital source of water for later explorers and prospectors travelling eastward during the gold rush, including Bayley and Ford, the discoverers of the Coolgardie field.

Lefroy's expedition was followed by three others under the command of Hunt, in the successive years 1864-1866. On the first of these, Hunt travelled via the Gnarlbine Rock to Depot Hill, which became the hub of explorations extending over several months. From there, he discovered a great salt lake, named Lake Lefroy after his predecessor, who had narrowly missed finding it. He then travelled southward as far as Mount Thirsty, where another large lake, named after John Cowan, a member of his party, barred his way. To the east lay the pastoral lands of the Hampton Plains and Hunt's Slate Well, which would become a depot on his later expeditions.

As a consequence of his favourable report on the Hampton Plains, Hunt was sent out again the following year to open up the route between York and his Slate Well, later known as Hunts's Track — another boon for later prospectors. Then, in 1866, despite recurrent illnesses, Hunt led a third expedition, sponsored by the York Agricultural Society, with the objective of exploring the pastoral potential east of the Hampton Plains and towards the South Australian border. On this journey, he went to the eastern end of Lake Lefroy, then northwards via Mount Quin as far as Hunt Pinnacles, near Lake Rebecca. Hunt arrived back in York on 25 October 1866, just two years before his death at the early age of thirty-five.

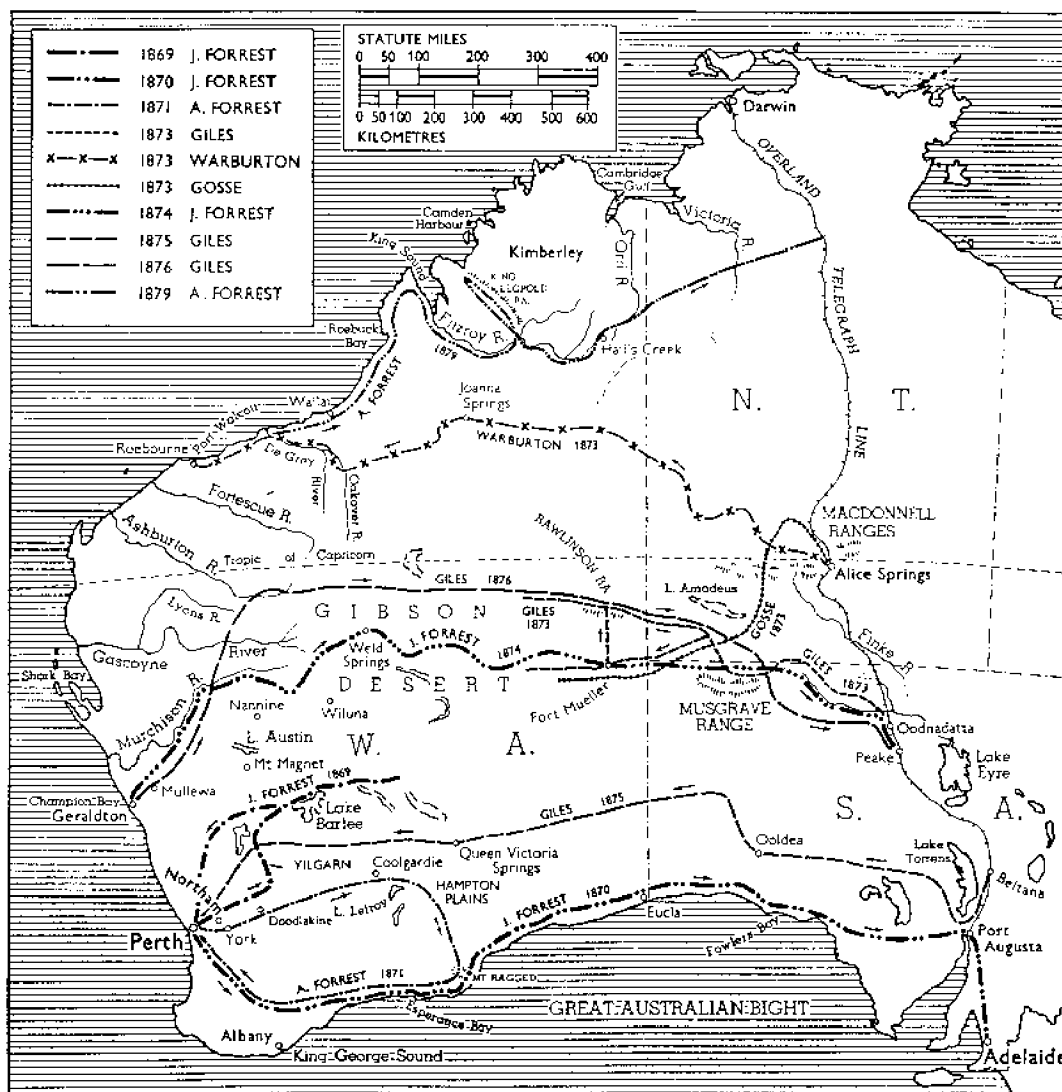
The final exploration of the area during this period was undertaken by Alexander Forrest (1849-1901) while acting as a contract surveyor to the Survey Department. Again the York

Agricultural Society took the initiative, pressing Governor Weld for exploration of the country between the Hampton Plains and Eucla in the belief, supported by Hunt's 1866 findings, that "a fine belt of country might be found running through to the east end of the Bight." Forrest, with a team of six, 17 horses, and provisions for three months, set out from York on 11 August, 1871. Hunt's Track was followed to the Gnarlbine Rock, thence to the Slate Well, on the borders of the Hampton Plains, which Forrest, like Hunt before him, used as a depot. From here, Forrest and one or two others made excursions to the East, East North East and South East, each of which confirmed the useless nature of the country for agricultural or pastoral purposes. On the last of these excursions, Forrest, accompanied only by Windich, who was again participating as a guide, set out to penetrate as far to the east as possible. After travelling about 150 miles over mainly barren country and reaching 123 deg. 37 min. E. longitude, Forrest was forced to return to Slate Well. Soon after this, he decided to lead the expedition south to Israelite Bay and from there, via Esperance, to Perth. The main achievement of this final gruelling stage, which lasted nearly two months, was the discovery of "a splendid range of grassy land", named Fraser Range after the new Surveyor General. The sea was sighted on 2 October and Forrest sat down to report to the Colonial Secretary and the Surveyor General in Perth on 22 November.

**The Desert Crossings** The great crossings of the deserts of Western Australia in the last quarter of the nineteenth century have a special place in the history of exploration. They occurred at a time when explorers were less preoccupied with the search for new pastoral lands. The discovery of gold at a number of places in Australia, including Western Australia from 1866 onwards, gave an added incentive to venture beyond the points at which the Gregorys, Forrests and others had turned back. Moreover, a means of travelling long distances without the daily distraction of the search for water was at hand following the importation of the first camels by Thomas Elder in 1866. The completion of the telegraph line from Adelaide to Darwin in 1872 established a lifeline through the centre of the continent and a point of arrival and departure for explorers of the desert areas on both sides of the line. Experience gained in the construction of the line, including the management of camels, was soon put to use in lifting the veil from the remaining two-thirds of the Western Australian land mass.

The story of these epic journeys centres principally on seven men:

- Colonel Peter Egerton-Warburton (1813-1889);
- William Christie Gosse (1842-1881);
- Earnest Giles (1835-1879);
- John Forrest (1847-1918);
- David Lindsay (1856-1922);



Map showing the routes of the major desert crossings 1869-79. Map: Reproduced by Permission of the AUSTRALIAN ENCYCLOPEDIA (Australian Geographic Society).

- Lawrence Allen Wells (1860-1938); and
- the Hon. David Wynford Carnegie (1871-1900).

In 1873, through a somewhat involved chain of events, three of these explorers attempted to cross from the telegraph line to Perth. Although this is sometimes referred to as a "race", there was, in fact a measure of consultation between the parties concerned on the question of the routes to be followed so as to avoid duplication of effort and maximize the benefits of crossings. Warburton, with camels supplied by Thomas Elder, travelled on a route which took him from Alice Springs northwards to within a few miles of Augustus Gregory's furthest south on Sturt Creek, thereby fully revealing the nature of the country Gregory had looked out upon from Mount Wilson. The expedition fell behind time, causing extreme privations and the substitution of the Oakover River for Perth as their destination. Warburton, an ex-Indian Army officer, sixty years old, blind in one eye and emaciated, travelled at times lashed to his camel. Fifteen of the expedition's seventeen camels were lost or sacrificed on the journey, most of them being slaughtered for food, and the party survived only through the stamina of two of its members who were able to bring relief from an early pastoral property on the De Grey.

Gosse, using a mix of camels and horses, and Giles, equipped only with horses, both failed in their 1873 attempts. Gosse, a surveyor appointed by the South Australian Government to open a route from central Australia to Perth, also travelled north from Alice Springs, before adopting a course which led him via Ayers Rock to the border area much further south than had been planned. Here he made little use of his camels and penetrated only a short distance into Western Australia before giving up. Giles, fresh from his exhilarating discovery of the Olgas, Lake Amadeus and other features in central Australia, made a more determined effort. From depots in the Cavanagh and Rawlinson Ranges (named somewhat a-typically, Forts Mueller and McKellar), he made gruelling probes into Western Australia before being forced back by his failure to find water. One of the lasting reminders of his attempt was the placing on the map of the Gibson Desert, named for a young member of his party who disappeared with his horse, "The Fair Maid of Perth", in the arid area between the Rawlinson and Alfred and Marie Ranges.

After awaiting the outcome of Gosse's explorations, the Government of Western Australia felt free to appoint John Forrest to lead an eastward crossing of the deserts, which the explorer promoted as "the finishing stroke of Australian discovery." This expedition left Geraldton on 1 April, 1874, travelled to the Upper Murchinson, and completed the crossing to the Cavanagh Ranges, where Gosse and Giles had made their abortive attempts. Apart from Weld Springs (2 June), Alexander Spring (13 July), Blyth Creek (20 July) and, finally Barlee Spring (14 August), the party



found water only in scattered rock-holes, and their achievement — the only successful horse crossing — owed much to fortuitous rain.

Giles returned to the fray in 1875. Having been converted to camels and with the patronage of Thomas Elder, he now earned renown in the history of exploration by crossing the deserts in both directions. On the outward journey, he demonstrated decisively the supremacy of the camel by following virtually a straight-line course from Boundary Dam, just inside the Western Australian border, to A.C. Gregory's Mount Churchman, near Lake Moore. On the central part of this journey, his only watering points were Queen Victoria Spring and a well known by its Aboriginal name, Ularring. When naming the spring, Giles also conferred the regal title on the vast desert in which he found it — The Great Victoria Desert. Whereas the east-west crossing was made close to the 29th parallel, well to the south of Forrest's line, the return took him further to the north, from the Upper Ashburton to the Alfred and Marie Range of his earlier attempt. It was a dangerous undertaking, with his complement reduced to four, a teenager promoted to second-in-command, and Giles himself travelling blind in the future iron mining area he named the Ophthalmia Range.

Further nineteenth-century explorations were concerned mainly with investigating the areas between the routes of Warburton, Forrest and Giles, commonly by cutting northwards across the earlier explorers' tracks. Here the prominent names were those of Lindsay, Wells and Carnegie. Lindsay's expedition of 1891, usually termed the Elder Scientific Expedition because of Elder's continued support, aimed to study the country to the north and south of Queen Victoria Spring, but fell into disarray before any useful work could be undertaken there. The most important outcome of the expedition was an exploration of a blank space on the map between 26 and 28 deg. S. latitude by Wells, the second-in-command, after Lindsay had returned to Adelaide for consultations.

In 1896, Larry Wells was selected to lead an expedition funded by the British author, traveller and mining engineer, Albert Frederick Calvert, with the aim of defining a stock route from the Northern Territory to the Western Australian goldfields. He succeeded in travelling from Lake Way, near Wiluna, to Fitzroy Crossing, but lost two of his men from thirst and starvation when he split his team at Separation Well to maximize its exploration coverage. Neither party could locate Joanna Spring, their intended rendezvous, which was subsequently found to have been inaccurately positioned by Warburton. Another explorer, W.F. Rudall, the Regional Surveyor at Roebourne, made a major contribution to the knowledge of the Pilbara eastward from Nullagine to Wells's northward track when searching for the missing men.

Wells was followed closely by the remarkable British adventurer, David Carnegie, a son of the Earl of South Esk, who funded an expedition with the proceeds of his gold finds, crossed northward from Coolgardie to Halls Creek and returned by another route closer to the South Australian border. Among the many formidable obstacles faced by this tormented expedition were the parallel sand ridges of the Great Sandy Desert, up to one hundred feet high, running at right angles to the party's line of advance for two months of travel. The expedition was also struck by tragedy when Charles Stansmore accidentally shot himself while hunting a kangaroo for a celebratory feast as the expectant men approached Halls Creek. Having placed the names of his adventurous companions, members of his family and friends on many features of the Western Australian landscape, Carnegie, ever a wanderer, moved away in 1898 and fell to a tribesman's poisoned arrow in Nigeria a couple of years later.

### New Horizons

*First into the Kimberley* It is now necessary to take a step backwards to consider the exploration of the Kimberley region which, throughout the greater part of the nineteenth century remained outside the mainstream of exploration in Western Australia. After George Grey's ill-fated expedition in 1837-38, the area was neglected for over forty years, apart from two early attempts to settle the Camden Sound and Roebuck Bay areas. In 1878, Alexander Forrest took the initiative in offering to lead an exploration of the country in the vicinity of the Glenelg and Prince Regent Rivers which had defeated Grey — a proposal which the Legislative Council, after cautious consideration, decided to accept.

Forrest's party of seven, with the geologist Fenton Hill as second-in-command, eventually sailed from Fremantle in late January, 1879. The expedition disembarked at Cossack, then overlanded to Condon (the port of the outermost De Grey River Station) where stores and equipment awaited them. From there, with eight riding horses and eighteen packhorses, they followed the coast to Roebuck Bay, Beagle Bay and King Sound, which receives the water of the mighty Fitzroy. The steep banks of the river were reached about ten miles from its mouth on 8 May, but Forrest had to travel as far as the junction of the Fitzroy and Margaret Rivers, near Fitzroy Crossing, before the whole party could cross to the northern side. A north-westerly course was then set towards the coast with the aim of reaching the Glenelg and Prince Regent Rivers. However, Forrest found himself hemmed in first by the Oscar Range, followed by the towering King Leopold Range and, finally, the Walcott Inlet. His repeated attempts to penetrate the barriers to the north of him had dire consequences for the horses (ten of which were lost on this section of his journey) and the health of his party. On 25 June, when south of Walcott Inlet, the explorer took the "bitterly disappointing" decision to withdraw to the Fitzroy near Geikie Gorge and, because of the uncertainty of further supplies at

Beagle Bay, to travel to the Overland Telegraph Line, a distance of about 360 miles.

The journey then embarked upon what was another of those occasions in the history of exploration when survival became the dominant consideration. Nevertheless, important discoveries were made, including the headwaters of the Ord River and the splendid Nicholson Plains. With food desperately short, horses were killed for their meat — an expedient which could be resorted to only by also sacrificing equipment — and the situation deteriorated further when the expedition entered drier country supporting less game. After crossing the Victoria River, when only four members of the expedition were fit to travel, Forrest and Arthur Hicks, a cadet surveyor, made a dash for the telegraph line. Suffering terribly from thirst, the pair struck the line three days later when travelling by moonlight to avoid the terrible heat. Without maps, and not knowing which way to follow the line, they fortuitously encountered a work gang who were able to facilitate Forrest's rescue of his party. The expedition then journeyed along the line by easy stages to Palmerston (Darwin), where they took ship to Sydney and Fremantle.

### *Scientific Surveys*

Following Forrest's journey, and the immediate display of interest in the area for pastoral purposes, the pace of exploration accelerated remarkably. Moreover the Kimberleys were to benefit from an increasingly systematic approach to exploration, with emphasis on scientific surveys and mapping and the involvement of men qualified to undertake the increasingly complex geological, botanical, anthropological and other types of investigation now demanded. The new approach was typified by a series of explorations of the Kimberleys mounted by the Survey Department between 1883 and 1901. Each of these expeditions was led by a senior officer of the Department — J.S. Brooking (1883-4), H.F. Johnston (1884 and 1885) and F.S. Brockman (1901). Collectively, the expeditions made accurate surveys of large portions of the Kimberleys (including the extreme northern areas), mapped the river systems and discovered further potential pastoral lands. E.T. Hardman, the government geologist, travelled with the first two expeditions, prepared a valuable geological map and reported indications of auriferous country which led to the discovery of the first payable gold in Western Australia near Halls Creek.

The honour of the first crossing of the King Leopold Range was taken by Frank Hugh Hann (1846-1921), a Queenslander and explorer of the old type, who rode into Western Australia in 1896 seeking new pastures after the failure of his property in the Gulf country. Hann first searched the Nullagine district, before turning his attention to West Kimberley. He passed over the Range to the west of Mount Broome, and liked what he saw. On a return visit, he undertook a wide circular survey towards the west coast, following mainly the courses of the Adcock, Hann and Charnely

Rivers. The Leopold Ranges were then re-crossed by means of a pass near Mount Hart. After deciding against settling in the Kimberleys, Hann turned to prospecting and the exploration of the desert interior under government contract, one of his further achievements being the opening of a track from Laverton to the Warburton Ranges in 1903.

One outstanding achievement of desert exploration was the development of the Canning Stock Route. This was predominantly the work of surveyor Alfred Wernham Canning (1862-1936) — also noted for his role in the construction of the Rabbit Proof Fence — who surveyed the route for a chain of watering points for stock through the desert country from Wiluna to Halls Creek. The party set out on 29 May 1906, spent five months on the journey, and then returned overland to their starting point, thus emulating the double traverse of David Carnegie. Canning was sent out again in 1908 on a much longer assignment to sink wells, improve existing water sources and generally to make the route operational. The enterprise had a tragic side in the deaths through spearing of one of Canning's original team and the first two stockmen to use the route.

Clearly, desert exploration benefited immeasurably from twentieth century advances in technology, including transportation, aerial photography and improvements in navigational techniques, leading ultimately to the use of satellites. With fresh stimulus from the search for oil and a wider range of minerals, the new techniques were demonstrated comprehensively in a series of explorations undertaken in the 1950's — the Western Desert Expedition (1954), the North Eastern Desert Expedition (1955) and the Central and Eastern Expedition (1956). These saw the first use of four-wheel drive vehicles specially equipped for long range desert travel, even in the sand ridge country which had dismayed Carnegie. The parties undertook surveys and mapping at a level of sophistication far beyond the resources of earlier expeditions and showed the way for further co-operation in land exploration between the Commonwealth and State Governments and mining and industrial interests.

#### Further Reading

Birman, W., *Gregory of Rainworth*. University of Western Australia Press, Nedlands, 1979.

Bolton, G.C., *Alexander Forrest*. Melbourne University Press in association with the University of Western Australia Press, Melbourne, 1958.

Carnegie, D.W., *Spinifex and Sand*. Facs. edn, Penguin Books, Ringwood, 1973.

Crowley, F.K., *Forrest 1874-1918*. Volume 1, University of Queensland Press, St. Lucia, 1971.

Dutton, G., *Australia's Last Explorer: Ernest Giles*. Rigby Limited, Adelaide, 1974.

Dutton, G., *Edward John Eyre*. Collins, Sydney, 1967.

Forrest, J., *Explorations in Australia*. Greenwood Press, New York, 1969.

Gregory, A.C. and Gregory, F.T., *Journals of Australian Explorations*. Facs. edn, Hesperian Press, Victoria Park, 1981.

Grey, G., *Expeditions in Western Australia 1837-39*. 2 vols. Facs. edn, Hesperian Press, Victoria Park, 1984.

Jackson, J.L., *Not an Idle Man: A biography of John Septimus Roe*. Distributed by Fremantle Arts Centre Press, Fremantle, 1982.

Johnston, F.M., *Knights and Theodolites: A saga of surveyors*. Edwards and Shaw, Sydney, 1962.

Warburton, P.E., *Journey Across the Western Interior of Australia*. Facs. edn, Hesperian Press, Victoria Park, 1981.

### References

*The Australian Encyclopaedia*. Volume IV (entry on Inland Exploration), The Grolier Society of Australia Pty. Ltd., Sydney, 1983.

*Exploration Diaries*. Six volumes (typescript), Battye Library, Perth.

Feeken, E.H.J., Feeken, G.E.E. and Spate, O.H.K., *The Discovery and Exploration of Australia*. Thomas Nelson (Aust.) Ltd., Melbourne, 1970.

*Western Australia: an atlas of human endeavour, 1829-1979*. Produced for the Education Committee, WAY'79 by the Education and lands and Surveys Departments of Western Australia, Government Printer, Perth, 1979.

## PREFACE

The 1995 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.

The information in the 1995 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 CDATE 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 1995 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 1995 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 Advance Press and Type Foundry; Martin Thompson, 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

March 1995

## CONTENTS

<b>HISTORY</b>	<b>3</b>
The Exploration of Western Australia	3
<b>ENVIRONMENT</b>	<b>27</b>
Physical Features	27
Climate	28
Flora	33
Conservation	35
Fauna	38
Environmental Protection	46
<b>GOVERNMENT</b>	<b>53</b>
<b>THE FAMILY</b>	<b>69</b>
<b>POPULATION</b>	<b>87</b>
Population	87
Vital Statistics	94
<b>SOCIAL WELFARE AND HEALTH</b>	<b>107</b>
Social Welfare	107
Health	117
<b>LAW, ORDER AND EMERGENCY SERVICES</b>	<b>133</b>
Law and Order	133
Emergency Services	139
<b>EDUCATION</b>	<b>145</b>
<b>CULTURE AND THE ARTS</b>	<b>161</b>
<b>SPORT AND RECREATION</b>	<b>175</b>
Sport in 1993	176
Recreation	182
<b>THE ECONOMY</b>	<b>187</b>
The Year in Review	187
Using ABS data to track the Western Australian Economy	192
<b>AGRICULTURE, FORESTRY AND FISHING</b>	<b>199</b>
Agriculture	199
Forestry	215
Fisheries	216
<b>MINING, ENERGY AND WATER RESOURCES</b>	<b>221</b>
Mining and Energy in 1993-94	221
Water Resources	227
<b>HOUSING AND CONSTRUCTION</b>	<b>231</b>
Housing and Construction in 1993	231

<b>COMMERCE</b>	<b>239</b>
Small Business	239
Manufacturing	246
Retail and Wholesale Trade	248
Transport	250
<b>TOURISM</b>	<b>261</b>
<b>FINANCE SECTOR</b>	<b>269</b>
Public Finance	269
Private Finance	274
<b>LABOUR MARKET</b>	<b>281</b>
<b>CONSUMER AND PRODUCER PRICES</b>	<b>295</b>
<b>INTERNATIONAL AND INTERSTATE TRADE</b>	<b>301</b>
<b>REGIONAL PROFILE</b>	<b>313</b>
Perth Statistical Division	313
<b>HISTORICAL STATISTICS</b>	<b>323</b>
<b>APPENDIX AND INDEX</b>	<b>347</b>



### **The Publishing Team**

The Western Australian Year Book is produced in the Publishing section of the Australian Bureau of Statistics, Perth.

Editor Mike Mahoney

Desktop Publishing Laura Dunning  
Jason Kroeger  
Lesley Martin

Much of the material contained in the Western Australian Year Book is prepared by staff responsible for the respective fields of statistics compiled and disseminated by the ABS. Thanks also to Greg Colgan, Len Staniforth and Andrew Harvey for their efforts.

### **Photography Competition**

During the early part of 1994 the ABS organised a photography competition for Western Australian Secondary School students. Some photographs submitted as a result of this competition were included in the 1995 Western Australian Year Book. The assistance of the judges, participating schools, and the interest shown by the students is gratefully acknowledged. The winner of the first prize of \$150 was Linda Campbell of South Fremantle Senior High School for her photograph entitled "Cousin Katrina". A similar competition will be run during 1995, and it is hoped that this competition will become an annual event.



*"Cousin Katrina". Photograph : Courtesy of Linda Campbell, South Fremantle Senior High School.*

## 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.

### Services available from the ABS

#### Information Consultancy

Consultants are available to provide information and advice on a wide range of statistical requirements. Talk to our consultants for information options that can benefit your policy making, decision making, planning and marketing needs.

#### Statistical Consultancy

Our experienced and professional consultants can provide advice and assistance on statistical project planning, design of surveys, questionnaire design and data analysis.

#### Electronic Services

A growing range of our data is available on electronic media. The ABS intends discontinuing its statistical information service on DISCOVERY. Please contact Peter Davidson (Phone 06 252 6684) to discuss possible alternatives for acquiring statistics or if you wish to comment on this proposal. Our Telestats service delivers major economic publications ready to download into your computer on the day of release. Our PC-AUSSTATS service enables on-line access to a database of thousands of up-to-date time series. Selected datasets are also available on diskette or CD-rom.

**Printed Publications**

These are detailed in the *Catalogue of Publications and Products, Australia* (1101.0), which is available from any ABS Office.

**Unpublished Data**

Available on request.

**Library Services**

Available at the ABS Perth library and at selected libraries in the Perth Metropolitan Area and major regional centres.

**Further information**

Write to, or visit:

Information Services  
Level 16,  
Exchange Plaza Building,  
2 The Esplanade (entrance off Sherwood Court),  
Perth WA 6000.

Postal Address: GPO Box K881  
Perth WA 6001

**Contact details for Information Services are:**

Telephone (09) 360 5140  
Facsimile (09) 360 5955

**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.







# **WESTERN AUSTRALIAN YEAR BOOK**

**No. 31 — 1995**

**P.C. KELLY**

**Deputy Commonwealth Statistician  
and Government Statistician**

**Australian Bureau of Statistics  
Western Australian Office**

Australian Bureau of Statistics  
Catalogue number 1300.5

© Commonwealth of Australia 1995

ISSN 0083-8772

Pre-press work by Type Foundry, Subiaco;  
printing and binding by Advance Press, Bassendean.



## **Western Australian Year Book 1995**



*Cover:* The front cover features a small selection of plants found in the south-west of Western Australia. Featured are Hill's White Spider Orchid (*Caladenia arenicola clivicola*), the Carousel Spider Orchid (*Caladenia arenicola*) and the fruiting cone of the Firewood Banksia (*Banksia menziesii*). The back cover features a flowering Firewood Banksia (*Banksia menziesii*).

Spider Orchids can be seen during winter and spring. They often flower well after fires.

The Firewood Banksia flowers from February to August and usually has light to dark pink flowers. Sometimes they are yellow. The fruiting cones have an interesting spiral pattern, and the heat from fires helps expell the seeds from the seed capsules.

*Design:* Martin Thompson is a wildlife artist specialising in the flora and fauna of Australia and South East Asia.

