



NATURAL RESOURCE MANAGEMENT ON AUSTRALIAN FARMS

AUSTRALIA

EMBARGO: 11.30AM (CANBERRA TIME) WED 19 DEC 2007

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INQUIRIES

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070.

NOTES

ABOUT THIS PUBLICATION

This publication presents estimates compiled from the Australian Bureau of Statistics' (ABS) first dedicated Natural Resource Management survey.

In developing the NRM survey, five priority topics were identified; native vegetation, weeds, pests, land and soil, and water. These form the focus of the Natural Resource Management Survey 2004-05.

The survey asked farmers to identify the extent and type of NRM issues present on their land and the activities they undertook to prevent or manage them. It also asked farmers to identify areas affected and managed within the five priority NRM topics, and provide details of the labour and financial costs associated with activities undertaken.

The results provide an important perspective into NRM activities and issues occurring on Australian farms during 2004-05, and because they are based on the perception of farmers, may differ from scientific or satellite assessment.

The ABS welcomes feedback on this publication in terms of its relevance, usefulness, quality and range of data presented. Also, more detailed information may be available on request. Please send any comments or questions to the Director, Environment Surveys Business Statistics Centre, GPO Box 66, Hobart, TAS 7001, or phone (03) 6222 5850.

RE-ISSUE OF PUBLICATION

A re-issue of this publication has been necessary to correct errors detected in the calculation of certain percentages. A geographic re-coding of some units has also occurred. For further information, see paragraphs 26 and 27 of the Explanatory Notes.

INTERPRETING THE DATA

As the NRM survey relies on the perceptions and attitudes of the person completing the form, care should be taken when comparing data from this publication to data from other sources (see paragraphs 18-24 of the Explanatory Notes). For further assistance in interpreting the data included in this publication, please refer to Appendix 1.

Brian Pink
Australian Statistician

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ABBREVIATIONS

'000	thousand
\$'000	thousand dollars
\$m	million dollars
ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
ANZSIC	Australian and New Zealand Standard Industrial Classification
Aust.	Australia
EVAO	Estimated Value of Agricultural Operations
ha	hectare
m	million
n.e.c.	not elsewhere classified
no.	number
NRM	natural resource management
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
RSE	relative standard error
SA	South Australia
SE	standard error
Tas.	Tasmania
Vic.	Victoria
WA	Western Australia

NATIONAL OVERVIEW
NRM expenditure and effort

In 2004-05, Australian agricultural establishments spent over \$3.3 billion preventing and/or managing Natural Resource Management (NRM) issues (Table 1.1). On average, agricultural establishments undertaking NRM activities spent approximately \$28,176 and invested 121 person days of effort on these activities.

Australian agricultural establishments spent over \$1.1 billion to prevent or manage weeds in 2004-05. While weed activities were the most costly in dollar terms, it was land and soil issues which proved the most time consuming. On average, agricultural establishments undertaking land and soil activities spent 51 person days of effort on these activities.

Of the agricultural industries, the grain growing industry spent the most overall on NRM in 2004-05 (approximately \$772 million), followed by the beef cattle industry (\$639 million) (Table 1.2). Agricultural establishments in the cotton growing industry undertaking NRM spent the most on a per establishment basis, averaging \$243,741. Grain growers undertaking NRM were the next in line, spending an average of \$63,370 in 2004-05. Both were well above the national average of \$28,176 per establishment (due to the intensive input nature of these industries in relation to the use of herbicides and pesticides).

NRM activities and issues

NRM issues were reported as being present on 86% (112,357) of agricultural establishments in 2004-05, whereas 92% (119,417) of agricultural establishments reported undertaking some form of activity to prevent and/or manage these issues (Table 1.3). This suggests a number of farmers preventatively managed their holdings in order to avoid NRM issues affecting their land.

The most commonly reported NRM issues at the national level were weeds (73%) and pests (69%). Similarly, the most common NRM activities were weed and pest related (80% and 76% respectively). These two NRM themes rated highly across all agricultural industries (Tables 1.5 and 1.6).

While weed activity rated highly, the area of agricultural land affected by weeds (16%) was significantly less than the area affected by pests (62%). Also, the area of agricultural land managed for weeds (16%) was less than the areas managed for both pests (65%) and land and soil (30%) (Table 1.7).

Barriers to improving NRM practices

While the majority of agricultural establishments undertook NRM activities in 2004-05, two-thirds (86,322) felt there were barriers that prevented them from improving their NRM practices (Table 1.8). Of this population, the greatest reported barriers were lack of financial resources (78%), lack of time (57%) and lack of incentives (31%).

Native vegetation

In 2004-05, Australian agricultural establishments reported having 324 million hectares of native vegetation on their land (Table 1.9). This represents 73% of total agricultural land in Australia. A significant proportion of this reported area was in the rangelands, an area outside the cleared intensive land use zone. Farmers often reported these large rangeland areas as being covered entirely by uncleared native vegetation.

Approximately 55% of agricultural establishments with native vegetation reported no associated issues. Of those, nearly half (46%) reported undertaking some form of preventative management activity (Table 1.4).

1.1 NATURAL RESOURCE MANAGEMENT, Expenditure and effort by theme: Australia—2004–05

	<i>Agricultural establishments reporting any NRM activity no. (a)</i>	AGRICULTURAL ESTABLISHMENTS REPORTING NRM ACTIVITIES			
		<i>Total NRM expenditure \$m</i>	<i>Average NRM expenditure \$(b)</i>	<i>Total NRM effort person days</i>	<i>Average NRM effort person days(c)</i>
Native vegetation(d)	50 634	255	5 029	1 606 319	32
Weeds	104 486	1 167	11 173	4 062 800	39
Pests	99 136	721	7 277	3 880 120	39
Land and soil	75 505	907	12 017	3 878 835	51
Water	42 685	314	7 351	1 018 331	24
Any NRM activity	119 417	3 365	28 176	14 446 405	121

- (a) Agricultural establishments reporting more than one NRM activity or issue are shown against each specific NRM theme.
- (b) By theme, average NRM expenditure per agricultural establishment undertaking NRM activities.
- (c) By theme, average NRM effort (in terms of person days) per agricultural establishment undertaking NRM activities.
- (d) See Explanatory Notes, paragraph 20.

1.2NATURAL RESOURCE MANAGEMENT, Expenditure by Industry: **Australia—2004–**

05

 AGRICULTURAL ESTABLISHMENTS
 REPORTING NRM ACTIVITIES

	<i>Agricultural establishments no.</i>	<i>no. (a)</i>	<i>Total NRM expenditure \$m</i>	<i>Average NRM expenditure \$(b)</i>
ANZSIC				
0111 Plant Nurseries	1 809	1 533	*28	*18 109
0112 Cut Flower and Flower Seed Growing	778	705	^ 7	^ 9 415
0113 Vegetable Growing	4 054	3 646	122	33 328
0114 Grape Growing	6 496	6 007	^ 103	^ 17 150
0115 Apple and Pear Growing	908	815	^ 23	^ 28 432
0116 Stone Fruit Growing	1 203	1 043	^ 24	^ 23 341
0117 Kiwi Fruit Growing	*51	*51	*—	*2 571
0119 Fruit Growing n.e.c.	4 822	4 374	77	17 568
0121 Grain Growing	12 959	12 180	772	63 370
0122 Grain-Sheep and Grain-Beef Cattle Farming	17 159	16 317	611	37 460
0123 Sheep-Beef Cattle Farming	8 345	7 937	200	25 253
0124 Sheep Farming	12 718	11 727	235	20 072
0125 Beef Cattle Farming	35 635	32 310	639	19 776
0130 Dairy Cattle Farming	9 984	9 013	160	17 748
0141 Poultry Farming (Meat)	750	631	^ 6	9 398
0142 Poultry Farming (Eggs)	^ 399	^ 297	^ 4	*13 741
0151 Pig Farming	946	828	^ 13	^ 15 966
0152 Horse Farming	1 786	^ 1 650	^ 14	^ 8 277
0153 Deer Farming	*88	*83	*—	*4 621
0159 Livestock Farming n.e.c.	^ 649	^ 529	*5	^ 9 746
0161 Sugar Cane Growing	4 502	4 149	96	23 225
0162 Cotton Growing	755	688	^ 168	^ 243 741
0169 Crop and Plant Growing n.e.c.	1 722	1 559	^ 31	^ 19 644
<i>All Agriculture</i>	128 517	118 070	3 338	28 274
All Other Industries	1 417	^ 1 346	*26	*19 567
Total	129 934	119 417	3 365	28 176

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

(a) See Explanatory Notes, paragraph 22.

(b) By Industry, average total NRM expenditure per agricultural establishment undertaking any NRM activity.

1.3 NATURAL RESOURCE MANAGEMENT, Overview: Australia—2004–05

	no.	%
Agricultural establishments	129 934	100.0
Agricultural establishments reporting native vegetation(a)	81 815	63.0
Agricultural establishments reporting NRM activities(b)		
Any NRM activity(c)	119 417	91.9
Native vegetation(d)	50 634	61.9
Weeds	104 486	80.4
Pests	99 136	76.3
Land and soil	75 505	58.1
Water	42 685	32.9
Agricultural establishments reporting NRM issues(b)		
Any NRM issue(e)	112 357	86.5
Native vegetation(d)	36 408	44.5
Weeds	95 062	73.2
Pests	90 171	69.4
Land and soil	60 048	46.2
Water	49 523	38.1

- (a) See Explanatory Notes, paragraph 19.
 (b) Agricultural establishments reporting more than one NRM activity or issue are shown against each specific NRM theme.
 (c) See Explanatory Notes, paragraph 22.
 (d) See Explanatory Notes, paragraph 20.
 (e) (d) See Explanatory Notes, paragraph 23.

1.4 NATURAL RESOURCE MANAGEMENT, Issues and action: Australia—2004–05

	AGRICULTURAL ESTABLISHMENTS REPORTING NRM ISSUES			AGRICULTURAL ESTABLISHMENTS REPORTING NO NRM ISSUES		
	no.	Managing % (a)	Not managing %	no.	Managing %	Not managing %
Native vegetation(b)	36 408	82.0	18.0	45 407	45.8	54.2
Weeds	95 062	96.6	3.4	34 871	36.4	63.6
Pests	90 171	94.8	5.2	39 763	34.3	65.7
Land and soil	60 048	88.8	11.2	69 886	31.7	68.3
Water	49 523	62.3	37.7	80 411	14.7	85.3

- (a) Agricultural establishments reporting NRM issues may not necessarily be undertaking related management activities.
 (b) See Explanatory Notes, paragraph 20.

1.5 NATURAL RESOURCE MANAGEMENT, Issues by Industry: Australia—2004–05 ...

	AGRICULTURAL ESTABLISHMENTS REPORTING NRM ISSUES(b)							
	Agricultural establishments no.	Agricultural establishments reporting native vegetation no. (a)	no. (c)	Native vegetation % (d)	Weeds %	Pests %	Land and soil %	Water %
ANZSIC								
0111 Plant Nurseries	1 809	705	1 385	^ 37.6	66.4	51.8	^ 23.6	25.8
0112 Cut Flower and Flower Seed Growing	778	^ 450	627	^ 35.9	63.7	60.5	^ 26.3	^ 25.8
0113 Vegetable Growing	4 054	1 554	3 374	28.3	68.5	66.7	40.4	32.6
0114 Grape Growing	6 496	2 074	5 127	^ 28.8	68.7	53.9	32.5	27.3
0115 Apple and Pear Growing	908	^ 387	748	^ 25.7	67.0	67.1	^ 33.0	^ 20.5
0116 Stone Fruit Growing	1 203	^ 450	991	^ 37.5	66.9	70.4	^ 33.7	^ 29.0
0117 Kiwi Fruit Growing	*51	*51	*51	*67.3	100.0	*59.1	**23.6	**25.9
0119 Fruit Growing n.e.c.	4 822	2 345	3 982	28.8	66.8	63.9	38.9	29.5
0121 Grain Growing	12 959	8 996	11 712	39.0	77.5	74.4	59.1	39.6
0122 Grain-Sheep and Grain-Beef Cattle Farming	17 159	12 493	15 844	43.8	79.7	81.3	62.2	51.3
0123 Sheep-Beef Cattle Farming	8 345	6 191	7 753	53.6	78.3	82.3	55.0	44.0
0124 Sheep Farming	12 718	8 748	11 038	47.6	68.9	76.3	50.7	42.9
0125 Beef Cattle Farming	35 635	24 667	30 366	50.4	72.4	66.3	39.0	35.8
0130 Dairy Cattle Farming	9 984	5 309	8 439	40.1	75.8	61.7	42.0	34.0
0141 Poultry Farming (Meat)	750	^ 338	564	^ 22.8	64.2	50.8	^ 17.7	^ 25.0
0142 Poultry Farming (Eggs)	^ 399	^ 137	^ 191	*20.2	^ 37.7	^ 30.3	*8.5	*6.8
0151 Pig Farming	946	524	822	^ 42.7	71.7	69.0	^ 31.9	^ 24.3
0152 Horse Farming	1 786	^ 1 259	^ 1 500	^ 46.1	72.4	60.1	^ 39.9	^ 41.1
0153 Deer Farming	*88	*52	*53	**20.9	*60.4	*60.4	**24.6	*32.8
0159 Livestock Farming n.e.c.	^ 649	^ 517	^ 442	*44.7	^ 41.6	^ 46.6	^ 47.0	*38.4
0161 Sugar Cane Growing	4 502	2 126	3 908	^ 31.5	75.9	64.1	54.1	38.3
0162 Cotton Growing	755	^ 483	686	^ 54.0	75.4	78.0	^ 50.7	53.8
0169 Crop and Plant Growing n.e.c.	1 722	^ 1 043	1 479	^ 44.5	62.5	62.0	^ 42.1	^ 33.8
All Agriculture	128 517	80 900	111 084	44.5	73.1	69.4	46.3	38.2
All Other Industries	1 417	^ 915	^ 1 273	^ 41.4	76.0	65.7	^ 39.6	^ 30.2
Total	129 934	81 815	112 357	44.5	73.2	69.4	46.2	38.1

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) See Explanatory Notes, paragraph 19.

(b) Establishments reporting NRM issues by theme, as a percentage of the total number of agricultural establishments (except for native vegetation, refer to footnote d).

(c) See Explanatory Notes, paragraph 23.

(d) See Explanatory Notes, paragraph 20.

1.6 NATURAL RESOURCE MANAGEMENT, Activities by Industry: Australia—2004–05

	Agricultural establishments		AGRICULTURAL ESTABLISHMENTS REPORTING NRM ACTIVITIES (b)					
	Agricultural establishments no.	reporting native vegetation no. (a)	no. (c)	Native vegetation % (d)	Weeds %	Pests %	Land and soil %	Water %
ANZSIC								
0111 Plant Nurseries	1 809	705	1 533	58.0	78.9	58.5	35.4	27.8
0112 Cut Flower and Flower Seed Growing	778	^ 450	705	^ 51.6	79.3	70.1	^ 46.1	^ 27.0
0113 Vegetable Growing	4 054	1 554	3 646	52.3	80.3	71.1	57.2	30.3
0114 Grape Growing	6 496	2 074	6 007	56.0	87.1	58.2	42.2	29.4
0115 Apple and Pear Growing	908	^ 387	815	^ 49.0	79.5	76.6	50.8	^ 32.6
0116 Stone Fruit Growing	1 203	^ 450	1 043	^ 54.9	78.8	69.3	45.3	^ 32.2
0117 Kiwi Fruit Growing	*51	*51	*51	*69.9	100.0	*56.5	**35.6	**42.1
0119 Fruit Growing n.e.c.	4 822	2 345	4 374	54.1	81.4	67.1	52.1	32.4
0121 Grain Growing	12 959	8 996	12 180	55.4	84.0	78.9	72.0	31.0
0122 Grain-Sheep and Grain-Beef Cattle Farming	17 159	12 493	16 317	57.7	83.1	87.6	74.9	38.1
0123 Sheep-Beef Cattle Farming	8 345	6 191	7 937	64.4	81.6	90.0	63.7	34.9
0124 Sheep Farming	12 718	8 748	11 727	59.6	74.2	86.3	58.0	34.3
0125 Beef Cattle Farming	35 635	24 667	32 310	67.6	78.3	76.0	50.3	28.8
0130 Dairy Cattle Farming	9 984	5 309	9 013	66.4	83.2	67.3	57.8	36.9
0141 Poultry Farming (Meat)	750	^ 338	631	^ 56.1	72.5	63.2	^ 34.8	^ 30.9
0142 Poultry Farming (Eggs)	^ 399	^ 137	^ 297	^ 52.9	^ 64.0	^ 49.0	*18.8	*12.7
0151 Pig Farming	946	524	828	^ 49.2	75.7	75.2	45.8	^ 26.5
0152 Horse Farming	1 786	^ 1 259	^ 1 650	77.1	87.3	66.5	^ 44.7	^ 29.9
0153 Deer Farming	*88	*52	*83	^ 75.1	^ 70.6	^ 69.2	*35.7	**22.3
0159 Livestock Farming n.e.c.	^ 649	^ 517	^ 529	^ 73.7	^ 49.6	^ 54.4	^ 55.3	*33.4
0161 Sugar Cane Growing	4 502	2 126	4 149	62.3	84.3	61.6	67.4	44.3
0162 Cotton Growing	755	^ 483	688	^ 40.5	80.7	83.3	70.2	^ 50.0
0169 Crop and Plant Growing n.e.c.	1 722	^ 1 043	1 559	64.9	70.8	67.2	57.0	^ 34.8
All Agriculture	128 517	80 900	118 070	61.9	80.4	76.4	58.1	32.8
All Other Industries	1 417	^ 915	^ 1 346	^ 61.8	85.5	69.0	58.7	^ 35.5
Total	129 934	81 815	119 417	61.9	80.4	76.3	58.1	32.9

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) See Explanatory Notes, paragraph 19.

(b) Establishments reporting NRM activities by theme, as a percentage of the total number of agricultural establishments (except for native vegetation, refer to footnote d).

(c) See Explanatory Notes, paragraph 22.

(d) See Explanatory Notes, paragraph 20.

1.7

NATURAL RESOURCE MANAGEMENT, Area managed and affected:

Australia—2004–05

	'000 ha	%
Area of agricultural land	445 149	100.0
Area managed(a)		
Weeds	70 245	15.8
Pests	287 933	64.7
Land and soil	133 741	30.0
Area affected(a)		
Weeds	70 988	15.9
Pests	276 631	62.1
Land and soil(b)		
Soil acidity	9 772	2.2
Sodicity	^ 2 706	^ 0.6
Dryland salinity	^ 2 972	^ 0.7
Irrigation salinity	* 179	*—
Soil compaction	10 592	2.4
Surface waterlogging	^ 2 080	^ 0.5
Erosion	^ 9 806	^ 2.2

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

(a) See Explanatory Notes, paragraph 24.

(b) Total area of land affected by land and soil issues cannot be calculated as land may be affected by more than one issue.

1.8 BARRIERS TO IMPROVING NATURAL RESOURCE MANAGEMENT: Australia—2004–05

	<i>no.</i>	<i>%</i>
Agricultural establishments	129 934	100.0
Any barrier	86 322	66.4
No barriers	43 611	33.6
Agricultural establishments reporting any barrier(a) (b)		
Lack of financial resources	67 440	78.1
Lack of time	49 354	57.2
Age and/or ill health	19 462	22.5
Insufficient information	6 124	7.1
Conflicting information	9 040	10.5
Differing management views	7 645	8.9
Doubts about likely success	12 083	14.0
Lack of incentives	27 096	31.4
Other barriers	9 814	11.4

- (a) The number and percentage of agricultural establishments reporting specific NRM barriers is drawn from those establishments reporting any NRM barrier.
- (b) Agricultural establishments reporting more than one barrier are shown against each barrier reported.

1.9 NATIVE VEGETATION, Area managed and affected: Australia—2004–05

	'000 ha	%
Area of agricultural land	445 149	100.0
Area of native vegetation (a)	324 158	72.8
Area of native vegetation being managed (b)		
Fencing off native vegetation from stock	^ 4 816	^ 1.5
Planting and/or seeding of native vegetation	^ 649	^ 0.2
Clearing of native vegetation (under permit)	^ 620	^ 0.2
Thinning of regrowth native vegetation	^ 1 192	^ 0.4
Allowed regrowth of native vegetation	^ 14 182	^ 4.4
Fire management	^ 22 944	^ 7.1
Weed and/or pest management	^ 28 020	^ 8.6
Other activities	*22 310	*6.9
Area of native vegetation affected (c)		
Declining native vegetation quality	^ 14 273	^ 4.4
Habitat fragmentation	^ 1 843	^ 0.6
Insufficient native vegetation	*13 120	*4.0
Excessive native vegetation	^ 23 294	^ 7.2
Thickening native vegetation	^ 32 699	^ 10.1
Other issues	^ 27 955	^ 8.6

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) See Explanatory Notes, paragraph 19.

(b) Total area managed does not equal the sum of the individual areas managed as more than one activity may be undertaken on the same land.

(c) Total area affected does not equal the sum of the individual areas affected as land may be affected by more than one issue.

STATE OVERVIEW

NRM expenditure and effort

Agricultural establishments in New South Wales spent the most overall on natural resource management activities in 2004-05 (\$1.1 billion, or one-third of total NRM expenditure). However, Western Australian agricultural establishments undertaking NRM activities spent more on an individual basis, averaging \$46,869 (Table 2.1). In comparison, Victorian and ACT agricultural establishments reported relatively low NRM expenditure in 2004-05, spending on average \$16,794 and \$16,348 respectively.

In all states and territories, except Tasmania, weed and land and soil expenditure was greatest. In Tasmania, agricultural establishments spent more preventing and/or managing pest and land and soil issues.

Northern Territory agricultural establishments undertaking NRM activities spent on average \$35,013 on land and soil issues and \$18,474 on water issues, both well above the national average for these themes (Table 2.1). Western Australia was also well above the national average in terms of weed expenditure, with agricultural establishments spending on average \$29,722. Agricultural establishments in Victoria managed the greatest proportion of their native vegetation in 2004-05 and did so at the lowest cost per establishment, averaging \$1,895 compared with \$5,029 nationally.

Queensland agricultural establishments undertaking NRM activities reported the highest number of average person days managing their holdings (155), while Victorians reported the lowest (85) (Table 2.2).

In all states and territories, except the Northern Territory and ACT, more person days on average were spent managing land and soil issues than any other theme. In the Northern Territory, the most effort was directed towards native vegetation, and in the ACT it was directed towards pests.

NRM activities

The extent of management activities on agricultural establishments reporting NRM issues was consistently high across all states and territories (ranging from 96% to 99%) (Table 2.3).

Of the 17,577 agricultural establishments without NRM issues during the reference period, approximately half reported undertaking one or more preventative activities on their land, with South Australia and Victoria having the highest proportion (57% and 55% respectively).

Of those undertaking weed activities in 2004-05, the application of herbicides was the most commonly reported activity, with 84% of Australian agricultural establishments reporting the use of this control method (Table 2.4). Tasmanian agricultural establishments reported the highest activity in this area, with 87% of agricultural establishments applying herbicides. Slashing, cutting and mowing (54%) was the next most popular weed control method in Australia.

NRM activities continued

The most commonly reported pest activities in Australia during 2004-05 were the use of pesticides, shooting and baiting or trapping (Table 2.5). Of agricultural establishments undertaking pest management, 35% of those in the ACT and 34% in Tasmania reported fencing and/or netting as a control method.

Nationally, the main activities undertaken in relation to preventing and/or managing land and soil issues were management of crop and/or pasture type and grazing management (Table 2.6). In the Northern Territory, earthworks were also an important activity (55%). Tasmanian agricultural establishments reported high incidences of soil testing (54%).

Earthworks, drains and water pumping, tree and shrub planting or maintenance, and removal of stock from waterways were the most commonly reported water management activities (Table 2.7). Of those undertaking water management activities, Queensland agricultural establishments reported the highest incidence of earthworks, drains and water pumping (63%), while Victorian agricultural establishments reported the highest incidence of tree and shrub planting or maintenance (45%).

NRM issues

Decreased value of production and decreased value of holding were the two most commonly reported weed issues across Australia in 2004-05 (Table 2.4). Approximately 82% of agricultural establishments in New South Wales reported decreased value of production as one of the weed issues impacting on their land. Increased fire risk also rated highly across the states/territories, but particularly so in the Northern Territory, where 62% of agricultural establishments with weed issues reported this as a concern.

In 2004-05, decreased livestock production (63%) and decreased crop production or crop damage (60%) were the main impacts reported by Australian agricultural establishments with pest issues (Table 2.5). Decreased crop production or crop damage were particularly prevalent in Tasmania (79%), Western Australia (77%) and South Australia (72%). Approximately one-quarter of agricultural establishments with pest issues also reported damage to native vegetation.

Erosion, soil acidity and soil compaction were the most commonly reported land and soil issues across all the states and territories (except Western Australia and Tasmania) (Table 2.6). Dryland salinity was particularly significant in Western Australia, where 44% of agricultural establishments with land and soil issues reported this problem. Surface waterlogging also caused problems in Western Australia (41%).

The most frequently reported water issues were surface and ground water availability (Table 2.7). Surface water availability was a particularly significant issue in New South Wales and Queensland, where approximately 73% of agricultural establishments with water issues reported this as an issue. The drought impacting on eastern Australia during 2004-05 was also evident in the ACT, where 78% of agricultural establishments with water issues reported surface water availability as a major issue.

Native vegetation

The Northern Territory, Western Australia, Queensland and South Australia reported the greatest proportions of agricultural land covered by native vegetation (89%, 78%, 76% and 75% respectively) (Table 2.9). Victoria reported the lowest proportion of agricultural land covered by native vegetation (10%). However, it also reported the highest proportion of area of native vegetation being managed (49%).

*Native vegetation
continued*

Of those agricultural establishments with native vegetation on their holdings, weed and/or pest management, fencing off native vegetation from stock, and allowing of regrowth were the three most commonly reported activities nationally in 2004-05 (Table 2.10). The Northern Territory reported particularly high levels of fire management, with 86% of agricultural establishments using this control method to manage their native vegetation. Queensland agricultural establishments also reported thinning of regrowth native vegetation as a common activity (27%). Victoria and South Australia reported significant activity in relation to the planting and/or seeding of native vegetation (33% and 32% of agricultural establishments respectively).

During 2004-05, agricultural establishments with native vegetation reported thickening and excessive native vegetation, and declining native vegetation quality, as the most common issues (Table 2.10). Thickening native vegetation was significant in Queensland (65%), while declining native vegetation quality was a significant issue in Western Australia (55%).

2.1 NATURAL RESOURCE MANAGEMENT, Expenditure by theme: by State—2004–05

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
NUMBER									
Agricultural establishments	40 091	32 342	27 132	14 111	11 915	3 877	380	86	129 934
Agricultural establishments reporting any NRM activity(a)	36 876	29 548	24 885	13 139	11 067	3 470	348	84	119 417
NRM EXPENDITURE \$M									
Native vegetation	80	22	104	^ 19	23	^ 4	^ 1	^ —	255
Weeds	387	153	230	122	253	18	^ 4	^ —	1 167
Pests	251	108	178	62	101	19	^ 3	^ —	721
Land and soil	285	162	188	^ 126	117	^ 25	*4	^ —	907
Water	128	^ 51	^ 85	^ 18	25	^ 5	*1	^ —	314
Total	1 131	496	785	348	519	71	^ 13	^ 1	3 365
AVERAGE EXPENDITURE \$(b)									
Native vegetation	4 992	1 895	9 088	^ 3 976	4 688	^ 3 028	^ 8 843	^ 2 621	5 029
Weeds	11 565	5 749	10 847	10 607	29 722	6 337	^ 13 134	^ 5 919	11 173
Pests	7 932	4 649	8 415	6 023	10 606	6 253	^ 10 444	^ 4 378	7 277
Land and soil	11 870	9 158	12 353	^ 15 294	14 862	^ 10 923	*35 013	^ 5 107	12 017
Water	9 501	^ 5 151	^ 9 241	4 836	5 095	3 833	*18 474	^ 3 405	7 351
Total	30 665	16 794	31 545	26 510	46 869	20 486	^ 37 644	^ 16 348	28 176

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

(a) See Explanatory Notes, paragraph 22.

(b) By theme, average NRM expenditure per agricultural establishment undertaking NRM activities.

2.2 NATURAL RESOURCE MANAGEMENT, Effort by theme: by State—2004–05

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
NUMBER									
Agricultural establishments	40 091	32 342	27 132	14 111	11 915	3 877	380	86	129 934
Agricultural establishments reporting any NRM activity(a)	36 876	29 548	24 885	13 139	11 067	3 470	348	84	119 417
PERSON DAYS									
Native vegetation	558 436	188 763	650 925	68 410	^ 94 472	*33 117	*10 990	^ 1 206	1 606 319
Weeds	1 475 133	705 962	1 063 970	365 228	^ 364 931	^ 76 510	^ 8 357	2 709	4 062 800
Pests	1 385 881	709 549	951 831	342 912	360 327	^ 114 194	^ 12 277	^ 3 148	3 880 120
Land and soil	1 313 697	708 539	907 809	411 328	437 806	^ 89 879	*7 827	^ 1 950	3 878 835
Water	359 085	189 668	281 496	^ 69 438	^ 84 320	*32 596	*988	*740	1 018 331
Total	5 092 232	2 502 481	3 856 030	1 257 317	1 341 856	^ 346 296	^ 40 440	^ 9 753	14 446 405
AVERAGE PERSON DAYS (b)									
Native vegetation	35	16	57	14	^ 19	*25	*73	^ 26	32
Weeds	44	27	50	32	^ 43	^ 27	^ 31	35	39
Pests	44	31	45	33	38	^ 37	^ 42	^ 41	39
Land and soil	55	40	60	50	56	^ 39	*68	^ 30	51
Water	27	19	31	^ 18	^ 17	*24	^ 16	*21	24
Total	138	85	155	96	121	^ 100	^ 116	^ 116	121

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) See Explanatory Notes, paragraph 22.

(b) By theme, average NRM effort (in terms of person days) per agricultural establishment undertaking NRM activities.

2.3 NATURAL RESOURCE MANAGEMENT, Issues and action: by State—2004–05

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
NUMBER									
Agricultural establishments	40 091	32 342	27 132	14 111	11 915	3 877	380	86	129 934
Agricultural establishments reporting NRM issues									
Any issue(a)	35 081	26 924	23 992	12 148	10 549	3 254	np	np	112 357
Managing	34 598	26 561	23 490	12 020	10 445	3 196	np	np	110 703
Not managing	^ 483	^ 364	^ 502	*128	*104	*58	**np	**np	^ 1 654

PROPORTION REPORTING NRM ISSUES (%)

Agricultural establishments reporting NRM issues									
Managing(b)	98.6	98.6	97.9	98.9	99.0	98.2	np	np	98.5
Not managing	^ 1.4	^ 1.4	^ 2.1	*1.1	*1.0	*1.8	**np	**np	^ 1.5

NUMBER

Agricultural establishments reporting no NRM issues									
No issue	5 010	5 418	3 140	1 962	1 366	^ 623	*np	**np	17 577
Managing	2 278	2 987	^ 1 396	1 119	^ 622	^ 274	*np	**np	8 713
Not managing	2 732	2 430	1 745	^ 844	^ 744	^ 350	**19	—	8 863

PROPORTION REPORTING NO NRM ISSUES (%)

Agricultural establishments reporting no NRM issues									
Managing	45.5	55.1	44.4	57.0	^ 45.6	^ 43.9	*np	np	49.6
Not managing	54.5	44.9	55.6	43.0	54.4	^ 56.1	**np	np	50.4

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** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See Explanatory Notes, paragraph 23.

(b) Agricultural establishments reporting NRM issues may not necessarily be undertaking related management activities.

2.4 WEEDS, Activities and issues: by State—2004–05

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
'000 HA									
Area of agricultural land	64 356	13 920	143 797	^ 54 107	104 646	1 803	62 473	^ 48	445 149
PROPORTION OF AGRICULTURAL LAND (%)									
Area managed for weeds(a)	21.7	30.6	^ 13.2	*15.9	^ 12.4	^ 18.0	*17.7	^ 31.4	15.8
Area affected by weeds(a)	27.8	30.7	16.0	^ 10.1	^ 11.0	22.0	*13.4	^ 35.0	15.9
NUMBER									
Agricultural establishments	40 091	32 342	27 132	14 111	11 915	3 877	380	86	129 934
Agricultural establishments reporting weed activities	33 465	26 567	21 210	11 539	8 518	2 839	270	78	104 486
Agricultural establishments reporting weed issues	31 111	23 038	19 559	10 192	8 111	2 742	^ 239	71	95 062
PROPORTION REPORTING WEED ACTIVITIES (%)									
Weed activities(b)									
Application of herbicides	82.3	86.2	82.0	85.5	85.5	87.4	81.7	83.1	84.0
Use of biological control agents	8.2	^ 3.5	7.9	8.6	^ 4.9	^ 8.9	*13.1	*15.6	6.8
Slashing, cutting or mowing	55.3	56.4	55.8	55.8	36.5	63.4	^ 56.2	77.0	54.4
Cultivation	29.7	24.5	34.5	37.4	29.6	25.4	*10.6	^ 38.6	30.1
Pulling, manual removal or chipping	43.7	40.7	37.3	37.0	32.3	40.1	*17.8	^ 35.8	39.8
Crop or grazing management	40.0	30.5	32.3	39.1	49.7	37.8	*17.2	^ 53.0	36.6
Burning	17.0	12.9	25.9	14.9	25.3	^ 20.3	^ 38.5	*12.0	18.4
Other activities	^ 2.7	^ 2.8	^ 4.9	^ 2.5	^ 4.0	*2.1	**np	**np	^ 3.2
PROPORTION REPORTING WEED ISSUES (%)									
Weed issues(b)									
Decreased value of production	81.6	76.1	76.2	76.6	72.7	76.9	^ 64.3	81.0	77.7
Block water courses	14.9	19.4	19.2	^ 8.1	^ 9.6	^ 22.5	*22.4	*10.0	15.9
Increased fire risk	29.4	27.3	28.8	37.5	45.4	37.9	^ 62.0	^ 48.2	31.3
Poisoned stock	18.5	8.9	22.0	8.9	16.3	^ 9.5	**np	**np	15.4
Decreased native plant and animal population and distribution	16.9	13.7	19.5	11.8	12.9	^ 11.3	*18.3	*14.1	15.6
Decreased value of holding	55.1	52.3	53.6	40.8	28.3	46.4	^ 30.9	65.3	50.0
Other issues	15.9	17.1	13.5	16.8	16.1	^ 16.9	**9.7	*16.7	15.8

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(a) See Explanatory Notes, paragraph 24.

(b) The percentage of agricultural establishments reporting specific weed activities and issues is drawn from those establishments reporting any weed activities or issues.

2.5 PESTS, Activities and issues: by State—2004–05

	NSW	Vic.	QLD	SA	WA	Tas.	NT	ACT	Aust.
'000 HA									
Area of agricultural land	64 356	13 920	143 797	^ 54 107	104 646	1 803	62 473	^ 48	445 149
PROPORTION OF AGRICULTURAL LAND (%)									
Area managed for pests(a)	68.9	44.7	66.2	^ 53.2	76.9	46.2	^ 51.3	^ 65.6	64.7
Area affected by pests(a)	67.7	41.2	66.6	^ 47.7	63.9	54.7	^ 60.7	^ 65.0	62.1
NUMBER									
Agricultural establishments	40 091	32 342	27 132	14 111	11 915	3 877	380	86	129 934
Agricultural establishments reporting pest activities	31 590	23 198	21 138	10 304	9 491	3 047	292	76	99 136
Agricultural establishments reporting pest issues	28 507	21 071	19 229	9 409	8 781	2 825	276	72	90 171
PROPORTION REPORTING PEST ACTIVITIES (%)									
Pest activities(b)									
Use of pesticides	75.9	68.5	75.7	69.4	70.6	63.5	^ 60.3	72.3	72.5
Biological control	9.1	6.5	10.2	10.5	^ 6.2	^ 8.9	*10.3	^ 22.1	8.6
Baiting or trapping	46.2	30.7	41.8	43.4	39.0	^ 14.8	^ 58.3	^ 38.5	39.7
Shooting	62.5	67.3	56.8	60.6	70.7	77.0	^ 59.7	73.0	63.5
Fencing and/or netting	18.8	14.3	10.5	13.4	18.4	34.3	*19.8	^ 34.5	15.9
Grazing management	30.4	24.4	26.1	27.0	24.8	25.0	*8.0	^ 47.0	27.0
Crutching	44.2	37.3	6.9	50.7	51.1	32.3	—	^ 56.6	35.5
Other activities	^ 5.0	6.1	^ 3.8	^ 6.2	^ 5.5	*2.2	**5.8	*11.3	5.1
PROPORTION REPORTING PEST ISSUES (%)									
Pest issues(b)									
Decreased livestock production	67.4	61.0	64.0	57.1	58.5	47.8	^ 49.3	^ 55.4	62.5
Damaged native vegetation	27.4	22.7	22.0	22.6	23.3	^ 19.3	*17.4	^ 42.3	24.0
Decreased crop production or damage	58.6	57.1	48.9	72.1	77.1	79.2	^ 39.7	^ 56.6	60.0
Decreased native plant and animal population	21.6	17.6	16.0	16.1	19.9	^ 13.3	*23.7	^ 37.7	18.5
Other issues	7.5	9.7	^ 8.3	^ 6.6	^ 6.2	^ 6.6	*13.0	*14.4	7.9

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* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) See Explanatory Notes, paragraph 24.

(b) The percentage of agricultural establishments reporting specific pest activities and issues is drawn from those establishments reporting any pest activities or issues.

2.6 LAND AND SOIL, Activities and issues: by State—2004–05

	NSW	Vic.	QLD	SA	WA	Tas.	NT	ACT	Aust.
'000 HA									
Area of agricultural land	64 356	13 920	143 797	^54 107	104 646	1 803	62 473	^48	445 149
PROPORTION OF AGRICULTURAL LAND (%)									
Area managed for land and soil(a)	31.4	32.2	^30.4	^45.8	^32.3	^28.8	*10.1	*24.0	30.0
NUMBER									
Agricultural establishments	40 091	32 342	27 132	14 111	11 915	3 877	380	86	129 934
Agricultural establishments reporting land and soil activities	23 974	17 743	15 212	8 243	7 874	2 279	^116	64	75 505
Agricultural establishments reporting land and soil issues	18 090	14 416	11 943	6 314	7 252	1 864	^130	^40	60 048
PROPORTION REPORTING LAND AND SOIL ACTIVITIES (%)									
Land and soil activities(b)									
Crop and/or pasture type	61.1	52.7	50.7	62.2	59.6	52.6	*19.9	^52.1	56.7
Grazing management	56.8	45.8	46.7	49.6	49.8	42.2	*34.8	67.4	50.2
Earthworks	37.7	27.0	45.8	17.6	35.6	43.6	^55.4	^24.0	34.6
Changed cultivation methods	33.9	26.7	32.4	41.8	30.6	^23.4	**np	**np	32.0
Changed irrigation methods	8.3	9.7	9.9	^8.8	^2.6	^14.2	—	^5.1	8.6
Changed fertilisation methods	19.1	18.6	15.9	20.2	18.7	^15.8	**np	*np	18.3
Tree and shrub planting or maintenance	27.3	33.6	11.2	24.0	32.7	^25.9	—	^39.3	25.7
Fencing to protect sensitive areas	20.2	25.0	15.5	18.9	30.8	28.9	**np	^np	21.6
Addition of lime	28.1	38.8	17.4	16.5	45.2	51.8	*29.8	*15.4	29.7
Soil testing	37.9	40.9	27.3	29.6	49.1	53.6	*33.4	^44.1	37.2
Other activities	^6.2	^4.8	^7.8	^8.2	^6.2	*2.6	**np	*np	6.3
PROPORTION REPORTING LAND AND SOIL ISSUES (%)									
Land and soil issues(b)									
Soil acidity	46.4	49.0	16.7	27.5	58.9	55.5	**19.4	^48.3	40.9
Sodicity	11.3	9.8	^11.2	16.1	13.1	*2.5	—	—	11.3
Dryland salinity	11.2	13.8	^4.3	22.9	43.9	*np	—	**np	15.4
Irrigation salinity	^3.0	^7.7	^2.4	^7.5	^2.0	*1.8	—	—	4.3
Soil compaction	33.7	26.9	41.1	24.2	25.5	^26.0	**np	*np	31.2
Surface waterlogging	13.5	25.5	15.2	21.9	41.4	np	—	**np	22.1
Erosion	48.6	32.4	49.4	41.9	36.0	32.0	^58.6	^70.7	42.1
Other issues	10.1	^10.3	18.6	14.3	^6.0	*np	*np	**np	11.6

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— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See Explanatory Notes, paragraph 24.

(b) The percentage of agricultural establishments reporting specific land and soil activities and issues is drawn from those establishments reporting any land and soil activities or issues.

2.7 WATER, Activities and issues: by State—2004–05

	NSW	Vic.	QLD	SA	WA	Tas.	NT	ACT	Aust.
NUMBER									
Agricultural establishments	40 091	32 342	27 132	14 111	11 915	3 877	380	86	129 934
Agricultural establishments reporting water activities	13 490	9 882	9 218	3 793	4 873	1 332	*61	^ 36	42 685
Agricultural establishments reporting water issues	16 794	10 277	12 197	3 826	5 206	1 099	^ 75	^ 48	49 523
PROPORTION REPORTING WATER ACTIVITIES (%)									
Water activities(a)									
Water testing	12.3	16.0	19.9	22.7	22.7	^ 17.3	**np	*np	17.1
Removal of stock from waterways	30.3	27.1	26.4	22.1	28.2	^ 38.4	**21.2	^ 61.9	28.0
Fencing to protect riparian zones	22.5	27.5	17.6	^ 20.2	23.6	39.4	**np	^ np	23.1
Monitoring of ground-water table	14.3	18.3	14.6	36.9	24.0	*6.1	**np	**np	18.1
Earthworks, drains and water pumping	57.6	47.3	63.3	32.9	47.8	60.3	*60.8	^ 47.6	53.2
Tree and shrub planting or maintenance	37.6	44.5	^ 16.1	38.6	44.0	^ 27.6	—	*24.2	35.0
Other activities	12.3	^ 7.2	^ 11.0	^ 11.6	^ 7.4	*4.5	**np	**np	9.9
PROPORTION REPORTING WATER ISSUES (%)									
Water issues(a)									
Surface water availability	73.0	56.3	73.3	42.5	39.1	51.3	*45.7	77.8	63.1
Ground water availability	35.1	26.4	45.5	32.7	30.7	^ 25.6	*37.2	^ 47.4	35.0
Water clarity	9.3	^ 12.1	^ 7.7	^ 5.8	^ 6.7	^ 9.6	**np	*np	8.9
Excess nutrient load	^ np	^ 11.3	^ 6.1	^ 5.4	^ 8.3	*np	**np	**np	7.5
Toxicity event	*np	*1.3	*1.9	np	*np	—	—	—	^ 1.1
Other water surface quality problems	^ 6.1	15.6	^ 3.6	24.4	45.5	*7.8	—	—	13.1
Other ground water quality problems	7.0	^ 11.8	^ 7.2	24.7	38.7	*5.6	**np	**np	12.7
Other issues	21.6	24.4	20.2	21.8	21.0	^ 28.3	*41.0	*26.8	21.9

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

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(a) The percentage of agricultural establishments reporting specific water activities and issues is drawn from those establishments reporting any water activities or issues.

2.8 BARRIERS TO IMPROVING NATURAL RESOURCE MANAGEMENT: by State—2004–05

	NSW	Vic.	QLD	SA	WA	Tas.	NT	ACT	Aust.
NUMBER									
Agricultural establishments	40 091	32 342	27 132	14 111	11 915	3 877	380	86	129 934
Agricultural establishments reporting NRM barriers	28 139	20 020	18 642	8 702	8 208	2 321	^ 222	70	86 322
PROPORTION REPORTING NRM BARRIERS (%)									
Barriers to improving NRM(a)									
Lack of financial resources	80.1	75.7	77.2	77.2	81.9	72.7	80.7	78.9	78.1
Lack of time	52.6	60.0	55.4	61.5	63.4	63.7	^ 55.5	^ 53.5	57.2
Age and/or ill health	25.4	23.9	23.3	13.8	16.4	^ 26.3	**np	*np	22.5
Insufficient information	6.3	^ 7.0	^ 8.4	^ 5.7	^ 9.4	*4.2	**np	**np	7.1
Conflicting information	10.7	8.6	12.1	^ 6.5	15.7	^ 7.7	**np	**np	10.5
Differing management views	8.5	8.3	8.8	^ 8.6	12.0	^ 8.3	**np	*np	8.9
Doubts about likely success	12.5	12.6	15.7	13.7	20.2	^ 10.6	**np	*np	14.0
Lack of incentives	29.7	34.8	28.1	29.9	37.1	36.4	*13.8	*25.6	31.4
Other barriers	13.4	7.9	17.3	^ 7.0	^ 5.8	^ 5.2	*18.3	*16.7	11.4

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) The percentage of agricultural establishments reporting specific NRM barriers is drawn from those establishments reporting any NRM barrier.

2.9 NATIVE VEGETATION, Area and area managed: by State—2004–05

	NSW	Vic.	QLD	SA	WA	Tas.	NT	ACT	Aust.
NUMBER									
Agricultural establishments	40 091	32 342	27 132	14 111	11 915	3 877	380	86	129 934
Agricultural establishments reporting native vegetation(a)	25 569	16 711	18 755	8 518	9 338	2 570	287	68	81 815
'000 HA									
Area of agricultural land	64 356	13 920	143 797	^ 54 107	104 646	1 803	62 473	^ 48	445 149
Area of native vegetation(a)	35 363	^ 1 366	108 960	^ 40 785	^ 81 185	^ 577	55 908	^ 14	324 158
Area of native vegetation being managed(b)	^ 10 952	^ 662	^ 27 141	* 6 675	^ 26 691	^ 155	* 5 229	^ 5	77 511
PROPORTION OF NATIVE VEGETATION BEING MANAGED (%)									
Area of native vegetation being managed	^ 31.0	^ 48.5	^ 24.9	* 16.4	^ 32.9	^ 26.9	** 9.4	^ 35.6	23.9

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) See Explanatory Notes, paragraph 19.

(b) See Explanatory Notes, paragraph 24.

2.10 NATIVE VEGETATION, Activities and issues: by State—2004–05

	NSW	Vic.	QLD	SA	WA	Tas.	NT	ACT	Aust.
NUMBER									
Agricultural establishments reporting native vegetation (a)	25 569	16 711	18 755	8 518	9 338	2 570	287	68	81 815
Agricultural establishments reporting native vegetation activities (b)	16 123	11 741	11 442	4 894	4 904	1 332	^ 151	^ 47	50 634
Agricultural establishments reporting native vegetation issues (b)	11 837	6 729	9 980	3 318	3 706	^ 714	^ 91	^ 34	36 408

PROPORTION REPORTING NATIVE VEGETATION ACTIVITIES (%)

Native vegetation activities (c)									
Fencing off native vegetation from stock	25.9	40.6	^ 14.3	36.6	53.1	47.3	**13.2	^ 33.2	30.9
Planting and/or seeding of native vegetation	19.1	33.3	^ 6.2	31.8	29.2	^ 13.2	**np	^ np	21.5
Clearing of native vegetation (under permit)	^ 2.4	*0.9	^ 6.7	*1.3	*0.9	**np	—	**np	^ 2.8
Thinning of regrowth native vegetation	17.1	^ 4.4	26.9	*2.6	*1.9	*5.1	**np	**np	13.1
Allowed regrowth of native vegetation	32.2	29.8	20.5	31.8	29.4	^ 35.4	**np	^ np	28.7
Fire management	19.7	^ 9.1	29.8	^ 9.7	20.7	^ 23.5	85.9	*25.9	19.0
Weed and/or pest management	62.6	58.2	61.8	47.7	32.2	48.4	^ 49.9	^ 71.0	56.6
Other activities	^ 7.8	^ 4.9	^ 9.0	^ 9.9	^ 11.4	*7.5	**np	*np	7.9

PROPORTION REPORTING NATIVE VEGETATION ISSUES (%)

Native vegetation issues (c)									
Declining native vegetation quality	21.1	32.5	^ 14.5	31.8	54.8	^ 39.1	**23.6	*35.7	26.2
Habitat fragmentation	14.9	^ 20.4	^ 6.6	^ 14.7	25.1	*12.7	**np	*np	14.6
Insufficient native vegetation	18.5	32.4	^ 9.2	25.9	22.9	^ 20.8	**np	*np	19.7
Excessive native vegetation	30.7	^ 11.9	40.1	^ 16.2	^ 11.7	^ 28.3	**np	*np	26.4
Thickening native vegetation	43.8	^ 18.6	64.8	22.1	^ 15.3	^ 29.8	*38.8	*34.6	39.7
Other issues	22.5	33.8	19.2	29.1	23.8	^ 27.1	*40.0	^ 49.7	24.6

- ^ estimate has a relative standard error of 10% to less than 25% and should be used with caution
- * estimate has a relative standard error of 25% to 50% and should be used with caution
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- nil or rounded to zero (including null cells)
- np not available for publication but included in totals where applicable, unless otherwise indicated
- (a) See Explanatory Notes, paragraph 19.
- (b) See Explanatory Notes, paragraph 20.
- (c) The percentage of agricultural establishments reporting specific native vegetation activities and issues is drawn from those establishments reporting any native vegetation activities or issues.

REGIONAL OVERVIEW
NRM expenditure and effort

Avon (WA), Central West (NSW) and Border Rivers/Gwydir (NSW) were the three regions which spent the most on natural resource management during 2004-05 (\$192 million, \$168 million and \$157 million respectively) (Table 3.1). NRM expenditure in these three regions was predominantly in relation to the prevention or management of weed, pest, and land and soil issues (Tables 3.3, 3.4 and 3.5).

While these three regions' expenditure was high in terms of total NRM expenditure, agricultural establishments undertaking NRM activity in Northern Agricultural Region (WA) and SA Arid Lands spent more on a per establishment basis, averaging more than \$90,000 each during the year (Table 3.1). In terms of total expenditure, weed activities were the main expense in the Northern Agricultural Region, while native vegetation and pest management proved costly in SA Arid Lands (Tables 3.2, 3.3 and 3.4).

Agricultural establishments in the SA Arid Lands region also reported high levels of effort, averaging 289 person days of effort each (Table 3.1). Other regions where agricultural establishments averaged well over 200 person days of NRM effort in 2004-05 included Desert Channels (Qld), Western (NSW), and Border Rivers (Qld).

NRM activities and issues

At the regional level, the number of agricultural establishments with an NRM issue and undertaking some type of management activity was consistently above the 95% level (Table 3.7). Less consistent across the regions was the number of agricultural establishments without NRM issues who were preventatively managing their land. Of those without NRM issues, high incidences of preventative management (70% or more) were reported in Mallee (Vic) and Desert Channels (Qld).

The area managed for and affected by pests was consistently higher across the regions than the area managed for and affected by weeds (Tables 3.8 and 3.9).

While Hawkesbury/Nepean (NSW), East Gippsland (Vic) and Wet Tropics (Qld) all reported pest affected areas well below the national average of 62% (with 25%, 26% and 29% respectively), the areas reported were still larger than those in relation to weeds. Hawkesbury/Nepean reported the lowest percentage of agricultural land affected by pests in Australia, but the region still undertook significant preventative action in relation to pest management during 2004-05.

Namoi (NSW), Mallee (Vic), Avon (WA) and Northern Agricultural Region (WA) all reported significant areas affected by weeds (greater than 40% of the total area of agricultural land).

In 2004-05, approximately half of the area (20 million hectares) of agricultural land in SA Arid Lands (the largest region in SA) was managed for land and soil issues (Table 3.10). This was the second largest area nationally behind Rangelands (WA), where approximately 26 million hectares were managed for land and soil issues.

Native vegetation

Across the majority of regions, the two main reasons given for agricultural establishments having native vegetation on their holding were to provide shelter and shade for stock and crops, and to provide wildlife habitat (Table 3.11). Provision of stock grazing also rated highly across many of the regions, as did aesthetic reasons.

3.1 NATURAL RESOURCE MANAGEMENT, Expenditure and effort: by NHT2

Region (a)—2004–05

AGRICULTURAL ESTABLISHMENTS REPORTING ANY NRM ACTIVITIES

	Agricultural establishments no.	no. (b)	NRM expenditure \$m	Average NRM expenditure \$(c)	Total NRM effort person days	Average NRM effort person days(d)
New South Wales						
Border Rivers/Gwydir	2 583	2 367	157	^ 66 530	^ 486 663	^ 206
Central West	5 461	5 041	^ 168	^ 33 404	880 170	175
Hawkesbury/Nepean	2 343	1 997	^ 30	^ 15 245	^ 156 227	78
Hunter/Central Rivers	3 423	3 109	^ 58	^ 18 674	^ 365 698	118
Lachlan	5 484	5 114	155	30 379	594 804	116
Lower Murray/Darling	680	^ 579	*23	*39 113	^ 78 979	^ 136
Murray	3 024	2 788	^ 114	40 844	378 062	136
Murrumbidgee	5 543	4 988	142	28 400	643 840	129
Namoi	2 891	2 824	^ 134	^ 47 468	^ 493 030	175
Northern Rivers	6 348	6 048	94	15 584	^ 723 742	120
Southern Rivers	1 472	^ 1 265	^ 19	^ 15 214	^ 127 121	^ 100
Sydney Metro	*65	*59	**1	**12 645	**3 122	*53
Western	775	697	^ 35	^ 49 631	^ 160 773	^ 231
Total	40 091	36 876	1 131	30 665	5 092 232	138
Victoria						
Corangamite	3 163	2 816	^ 37	13 085	^ 176 850	^ 63
East Gippsland	^ 832	^ 765	^ 9	^ 11 685	^ 64 937	^ 85
Glenelg Hopkins	3 816	3 367	54	16 078	^ 269 205	^ 80
Goulburn Broken	5 043	4 596	81	17 621	341 383	74
Mallee	2 872	2 681	^ 71	^ 26 566	^ 312 477	^ 117
North Central	4 504	4 236	84	19 752	446 100	105
North East (VIC)	2 205	2 020	^ 25	^ 12 314	^ 189 009	^ 94
Port Phillip and Westernport	3 747	3 465	^ 46	^ 13 274	276 257	80
West Gippsland	3 879	3 455	31	8 868	^ 206 732	60
Wimmera	2 281	2 148	^ 59	27 440	^ 219 531	^ 102
Total	32 342	29 548	496	16 794	2 502 481	85
Queensland						
Border Rivers	988	910	^ 63	^ 69 599	^ 208 144	^ 229
Burdekin	1 664	1 442	^ 65	^ 44 739	^ 287 795	^ 200
Burnett Mary	5 284	4 911	^ 100	^ 20 285	639 982	130
Cape York	*131	*131	*3	*24 846	*13 957	*107
Cape York Northern Gulf	na	na	na	na	na	na
Condamine	3 435	3 114	^ 121	^ 38 780	452 449	145
Desert Channels	822	788	^ 34	^ 42 588	^ 196 510	^ 249
Fitzroy	3 184	2 898	^ 135	^ 46 627	^ 495 936	^ 171
Mackay Whitsunday	1 405	1 309	^ 34	^ 25 763	^ 194 797	^ 149
Maranoa Balonne	1 448	1 362	^ 62	^ 45 874	^ 225 538	^ 166
Northern Gulf	^ 551	^ 446	*13	*29 039	*54 417	^ 122
South East (QLD)	4 560	4 210	^ 67	^ 15 865	^ 550 652	^ 131
South West (QLD)	^ 480	^ 468	*20	^ 42 890	^ 100 959	^ 216
Southern Gulf	371	^ 315	^ 19	^ 61 798	^ 66 413	^ 211
Torres Strait	na	na	na	na	na	na
Wet Tropics	2 808	2 582	49	19 123	368 482	143
Total(e)	27 132	24 885	785	31 545	3 856 030	155

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** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 22.

(c) Average total NRM expenditure per agricultural establishment undertaking NRM activities.

(d) Average total NRM effort (in terms of person days) per agricultural establishment undertaking NRM activities.

(e) See Explanatory Notes, paragraph 9.

3.1 NATURAL RESOURCE MANAGEMENT, Expenditure and effort: by NHT2

Region (a)—2004–05 *continued*

AGRICULTURAL ESTABLISHMENTS REPORTING ANY NRM ACTIVITIES

	Agricultural establishments no.	no. (b)	NRM expenditure \$m	Average NRM expenditure \$(c)	Total NRM effort person days	Average NRM effort person days(d)
South Australia						
Alinytjara Wilurara	na	na	na	na	na	na
Eyre Peninsula	1 484	1 372	53	38 805	144 285	105
Kangaroo Island	^ 234	^ 227	^ 5	^ 21 037	*22 692	*100
Adelaide and Mount Lofty Ranges	2 313	2 121	^ 26	^ 12 307	^ 128 794	^ 61
Northern and Yorke	2 973	2 828	76	26 817	259 816	92
SA Arid Lands	^ 171	^ 159	*15	^ 93 806	^ 45 930	^ 289
SA Murray Darling Basin	4 116	3 819	^ 88	^ 23 001	356 847	93
South East (SA)	2 821	2 613	^ 86	^ 32 759	^ 298 952	114
<i>Total</i>	<i>14 111</i>	<i>13 139</i>	<i>348</i>	<i>26 510</i>	<i>1 257 317</i>	<i>96</i>
Western Australia						
Avon	2 758	2 636	192	72 989	377 452	143
Northern Agricultural Region	1 191	1 155	^ 110	95 398	^ 198 287	^ 172
Rangelands (WA)	773	726	^ 41	^ 56 682	^ 147 118	^ 203
South Coast Region	1 845	1 733	^ 63	^ 36 420	^ 163 091	94
South West Region	3 984	3 595	81	22 467	^ 312 640	87
Swan	1 364	1 223	*31	*25 452	*143 268	*117
<i>Total</i>	<i>11 915</i>	<i>11 067</i>	<i>519</i>	<i>46 869</i>	<i>1 341 856</i>	<i>121</i>
Tasmania						
North (TAS)	1 414	1 283	^ 30	^ 23 046	^ 124 456	^ 97
North West (TAS)	1 491	1 311	^ 25	^ 19 095	^ 142 474	^ 109
South (TAS)	972	876	^ 16	^ 18 819	^ 79 367	91
<i>Total</i>	<i>3 877</i>	<i>3 470</i>	<i>71</i>	<i>20 486</i>	<i>^ 346 296</i>	<i>^ 100</i>
Northern Territory						
Northern Territory	380	348	^ 13	^ 37 644	^ 40 440	^ 116
<i>Total</i>	<i>380</i>	<i>348</i>	<i>^ 13</i>	<i>^ 37 644</i>	<i>^ 40 440</i>	<i>^ 116</i>
Australian Capital Territory						
ACT	86	84	^ 1	^ 16 348	^ 9 753	^ 116
<i>Total</i>	<i>86</i>	<i>84</i>	<i>^ 1</i>	<i>^ 16 348</i>	<i>^ 9 753</i>	<i>^ 116</i>
Australia (e)	129 934	119 417	3 365	28 176	14 446 405	121

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* estimate has a relative standard error of 25% to 50% and should be used with caution

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 22.

(c) Average total NRM expenditure per agricultural establishment undertaking NRM activities.

(d) Average total NRM effort (in terms of person days) per agricultural establishment undertaking NRM activities.

(e) See Explanatory Notes, paragraph 9.

3.2 NATIVE VEGETATION, Expenditure and effort: by NHT2 Region(a)—2004–05

	Agricultural establishments reporting native vegetation no. (b)	AGRICULTURAL ESTABLISHMENTS REPORTING NATIVE VEGETATION ACTIVITIES				
		no. (c)	Expenditure \$m	Average expenditure \$(d)	Total effort person days	Average effort person days (e)
New South Wales						
Border Rivers/Gwydir	2 018	^ 1 420	^ 13	^ 9 217	^ 60 223	^ 42
Central West	3 757	2 148	^ 11	^ 4 926	^ 97 964	^ 46
Hawkesbury/Nepean	^ 1 280	^ 904	^ 2	^ 2 356	^ 18 543	^ 21
Hunter/Central Rivers	2 301	^ 1 551	^ 6	^ 3 766	^ 53 526	^ 35
Lachlan	3 475	1 871	^ 7	^ 3 710	^ 31 571	^ 17
Lower Murray/Darling	^ 246	*np	**np	**26 105	*np	*129
Murray	1 887	1 282	^ 6	^ 4 725	^ 33 099	^ 26
Murrumbidgee	2 758	1 735	^ 9	^ 5 159	^ 50 533	^ 29
Namoi	2 152	^ 1 358	^ 8	^ 5 819	^ 55 218	^ 41
Northern Rivers	4 114	2 740	^ 8	^ 3 094	^ 86 543	^ 32
Southern Rivers	^ 844	^ 648	^ 2	^ 2 986	^ 15 451	^ 24
Sydney Metro	*31	**np	**np	*np	**np	**np
Western	^ 704	^ 320	*5	*np	*37 483	^ np
<i>Total</i>	25 569	16 123	80	4 992	558 436	35
Victoria						
Corangamite	1 579	^ 1 075	^ 2	^ 1 715	*17 569	^ 16
East Gippsland	^ 598	^ 468	^ 1	^ 1 535	^ 7 173	^ 15
Gleneelg Hopkins	1 739	^ 1 118	^ 3	^ 2 497	*22 158	*20
Goulburn Broken	2 880	2 147	^ 4	^ 1 913	^ 29 197	^ 14
Mallee	955	573	^ 1	^ 1 968	^ 10 670	^ 19
North Central	2 408	1 661	^ 3	^ 1 912	^ 25 219	^ 15
North East (VIC)	1 327	^ 894	^ 2	^ 2 453	*18 531	*21
Port Phillip and Westernport	1 815	^ 1 365	^ 2	^ 1 724	^ 28 865	^ 21
West Gippsland	2 016	^ 1 573	^ 2	1 518	^ 21 674	^ 14
Wimmera	1 392	868	^ 2	^ 1 789	^ 7 707	^ 9
<i>Total</i>	16 711	11 741	22	1 895	188 763	16
Queensland						
Border Rivers	^ 834	^ 463	^ 6	^ 13 085	*26 709	*58
Burdekin	^ 925	^ 580	^ 9	^ 14 715	^ 59 331	^ 102
Burnett Mary	3 679	2 539	^ 13	^ 5 056	^ 109 339	^ 43
Cape York	*121	*84	*—	*3 377	*2 152	*26
Cape York Northern Gulf	na	na	na	na	na	na
Condamine	2 176	^ 1 302	*10	*7 456	^ 58 482	^ 45
Desert Channels	751	^ 407	^ 11	^ 28 224	^ 77 044	^ 189
Fitzroy	2 627	^ 1 706	^ 20	^ 11 838	^ 97 865	^ 57
Mackay Whitsunday	^ 841	^ 539	*2	*4 607	*18 572	*34
Maranoa Balonne	1 300	^ 608	^ 12	^ 18 966	^ 40 859	^ 67
Northern Gulf	^ 327	*144	*2	*12 554	**12 287	**85
South East (QLD)	2 940	1 790	^ 7	^ 3 915	^ 85 277	^ 48
South West (QLD)	^ 465	^ 237	*4	^ 18 507	*23 878	^ 101
Southern Gulf	^ 276	^ 152	^ 5	^ 30 775	^ 16 138	^ 106
Torres Strait	na	na	na	na	na	na
Wet Tropics	1 492	^ 890	^ 3	^ 3 355	^ 22 991	^ 26
<i>Total (f)</i>	18 755	11 442	104	9 088	650 925	57

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* estimate has a relative standard error of 25% to 50% and should be used with caution

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— nil or rounded to zero (including null cells)

na not available

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 19.

(c) See Explanatory Notes, paragraph 20.

(d) Average native vegetation expenditure per agricultural establishment undertaking native vegetation activities.

(e) Average native vegetation effort (in terms of person days) per agricultural establishment undertaking native vegetation activities.

(f) See Explanatory Notes, paragraph 9.

3.2 NATIVE VEGETATION, Expenditure and effort: by NHT2 Region(a)—2004–05

continued

	Agricultural establishments reporting native vegetation no. (b)	AGRICULTURAL ESTABLISHMENTS REPORTING NATIVE VEGETATION ACTIVITIES				
		no. (c)	Expenditure \$m	Average expenditure \$(d)	Total effort person days	Average effort person days (e)
South Australia						
Alinytjara Wilurara	na	na	na	na	na	na
Eyre Peninsula	1 214	589	*3	*5 749	^ 7 257	^ 12
Kangaroo Island	^ 227	*172	*—	^ 2 370	*1 332	*8
Adelaide and Mount Lofty Ranges	1 033	^ 630	^ 1	^ 2 106	^ 7 030	^ 11
Northern and Yorke	1 985	1 185	^ 3	^ 2 348	^ 11 973	^ 10
SA Arid Lands	^ 163	*77	*4	*48 731	*8 214	*106
SA Murray Darling Basin	2 168	1 103	^ 5	^ 4 277	^ 17 958	^ 16
South East (SA)	1 728	1 137	^ 3	2 702	^ 14 644	^ 13
Total(f)	8 518	4 894	^ 19	^ 3 976	68 410	14
Western Australia						
Avon	2 392	1 207	^ 4	3 330	^ 12 561	10
Northern Agricultural Region	1 102	^ 523	^ 2	^ 4 569	^ 9 498	^ 18
Rangelands (WA)	553	^ 328	*7	*21 563	^ 38 491	^ 117
South Coast Region	1 688	904	^ 3	2 934	^ 10 455	^ 12
South West Region	2 954	1 544	^ 6	^ 3 776	^ 19 552	^ 13
Swan	^ 650	^ 398	*1	*2 568	^ 3 915	^ 10
Total	9 338	4 904	23	4 688	^ 94 472	^ 19
Tasmania						
North (TAS)	878	^ 527	^ 2	^ 3 452	**17 593	**33
North West (TAS)	912	^ 411	*1	*2 820	**10 976	**27
South (TAS)	779	^ 394	^ 1	^ 2 679	^ 4 548	^ 12
Total	2 570	1 332	^ 4	^ 3 028	*33 117	*25
Northern Territory						
Northern Territory	287	^ 151	^ 1	^ 8 843	*10 990	*73
Total	287	^ 151	^ 1	^ 8 843	*10 990	*73
Australian Capital Territory						
ACT	68	^ 47	^ —	^ 2 621	^ 1 206	^ 26
Total	68	^ 47	^ —	^ 2 621	^ 1 206	^ 26
Australia (f)	81 815	50 634	255	5 029	1 606 319	32

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* estimate has a relative standard error of 25% to 50% and should be used with caution

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— nil or rounded to zero (including null cells)

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 19.

(c) See Explanatory Notes, paragraph 20.

(d) Average native vegetation expenditure per agricultural establishment undertaking native vegetation activities.

(e) Average native vegetation effort (in terms of person days) per agricultural establishment undertaking native vegetation activities.

(f) See Explanatory Notes, paragraph 9.

3.3

WEEDS, Expenditure and effort: by NHT2 Region (a)—2004–05

AGRICULTURAL ESTABLISHMENTS REPORTING WEED ACTIVITIES

	no.	Expenditure \$m	Average expenditure \$(b)	Total effort person days	Average effort person days(c)
New South Wales					
Border Rivers/Gwydir	2 152	^ 57	^ 26 538	^ 136 085	^ 63
Central West	4 655	52	11 227	^ 242 972	^ 52
Hawkesbury/Nepean	1 726	^ 8	^ 4 702	^ 49 569	^ 29
Hunter/Central Rivers	2 917	*22	* 7 663	^ 127 567	^ 44
Lachlan	4 508	^ 60	^ 13 354	159 584	35
Lower Murray/Darling	^ 500	^ 3	^ 5 796	^ 13 886	^ 28
Murray	2 603	^ 37	^ 14 285	^ 91 851	35
Murrumbidgee	4 522	50	11 118	184 067	41
Namoi	2 710	^ 51	^ 18 719	^ 151 300	56
Northern Rivers	5 491	^ 31	^ 5 625	242 900	44
Southern Rivers	^ 1 152	^ 5	^ 4 504	^ 45 998	^ 40
Sydney Metro	*59	**—	* 4 442	*839	*14
Western	^ 470	*10	*20 315	^ 28 516	^ 61
<i>Total</i>	33 465	387	11 565	1 475 133	44
Victoria					
Corangamite	2 449	^ 9	^ 3 664	^ 42 356	^ 17
East Gippsland	^ 692	^ 2	^ 3 158	*17 620	^ 25
Glennelg Hopkins	2 820	^ 12	^ 4 284	^ 45 407	^ 16
Goulburn Broken	4 286	^ 18	^ 4 086	^ 79 374	^ 19
Mallee	2 417	^ 33	^ 13 641	^ 116 207	^ 48
North Central	3 869	^ 28	^ 7 331	^ 123 838	32
North East (VIC)	1 928	^ 6	^ 3 223	^ 51 858	^ 27
Port Phillip and Westernport	3 014	^ 11	^ 3 743	^ 92 315	31
West Gippsland	3 247	7	2 212	^ 70 974	^ 22
Wimmera	1 844	^ 26	^ 14 083	^ 66 014	^ 36
<i>Total</i>	26 567	153	5 749	705 962	27
Queensland					
Border Rivers	^ 758	*28	*37 452	^ 59 160	^ 78
Burdekin	1 278	^ 18	^ 14 071	^ 80 822	^ 63
Burnett Mary	4 298	^ 25	^ 5 904	175 454	41
Cape York	*101	**1	**12 277	* 2 520	*25
Cape York Northern Gulf	na	na	na	na	na
Condamine	2 788	^ 40	^ 14 328	169 575	61
Desert Channels	578	^ 5	^ 7 878	*21 625	^ 37
Fitzroy	2 436	^ 45	^ 18 594	^ 125 410	^ 51
Mackay Whitsunday	1 185	^ 11	^ 8 905	^ 72 593	^ 61
Maranoa Balonne	^ 905	^ 21	^ 23 351	^ 45 730	^ 51
Northern Gulf	^ 372	*3	* 7 215	*12 206	*33
South East (QLD)	3 794	13	3 535	159 269	42
South West (QLD)	^ 189	*1	* 5 649	** 4 442	*23
Southern Gulf	^ 221	*4	^ 17 271	*11 693	*53
Torres Strait	na	na	na	na	na
Wet Tropics	2 309	15	6 335	^ 123 471	53
<i>Total(d)</i>	21 210	230	10 847	1 063 970	50

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) Average weed expenditure per agricultural establishment undertaking weed activities.

(c) Average weed effort (in terms of person days) per agricultural establishment undertaking weed activities.

(d) See Explanatory Notes, paragraph 9.

3.3**WEEDS, Expenditure and effort: by NHT2 Region(a)—2004–05** *continued*

AGRICULTURAL ESTABLISHMENTS REPORTING WEED ACTIVITIES

	<i>no.</i>	<i>Expenditure \$m</i>	<i>Average expenditure \$(b)</i>	<i>Total effort person days</i>	<i>Average effort person days(c)</i>
.....					
South Australia					
Alinytjara Wilurara	na	na	na	na	na
Eyre Peninsula	1 191	^ 25	^ 20 762	^ 48 626	41
Kangaroo Island	*160	*1	*3 368	^ 2 287	^ 14
Adelaide and Mount					
Lofty Ranges	1 960	^ 10	^ 4 936	^ 44 610	^ 23
Northern and Yorke	2 588	41	15 752	^ 90 215	^ 35
SA Arid Lands	*81	**2	**20 714	*3 212	*40
SA Murray Darling					
Basin	3 389	24	6 934	114 833	34
South East (SA)	2 169	^ 21	^ 9 911	^ 61 447	^ 28
<i>Total(d)</i>	<i>11 539</i>	<i>122</i>	<i>10 607</i>	<i>365 228</i>	<i>32</i>
.....					
Western Australia					
Avon	2 205	117	53 172	117 930	53
Northern Agricultural					
Region	924	^ 64	^ 69 359	^ 59 841	^ 65
Rangelands (WA)	^ 396	*9	*22 718	^ 21 430	^ 54
South Coast Region	1 240	^ 25	^ 19 961	^ 30 860	^ 25
South West Region	2 703	^ 24	^ 8 737	^ 58 241	^ 22
Swan	1 049	*14	*13 747	**76 628	**73
<i>Total</i>	<i>8 518</i>	<i>253</i>	<i>29 722</i>	<i>^ 364 931</i>	<i>^ 43</i>
.....					
Tasmania					
North (TAS)	1 090	^ 8	^ 7 488	^ 26 040	^ 24
North West (TAS)	1 098	^ 6	^ 5 859	^ 35 010	^ 32
South (TAS)	651	^ 3	^ 5 216	^ 15 461	^ 24
<i>Total</i>	<i>2 839</i>	<i>18</i>	<i>6 337</i>	<i>^ 76 510</i>	<i>^ 27</i>
.....					
Northern Territory					
Northern Territory	270	^ 4	^ 13 134	^ 8 357	^ 31
<i>Total</i>	<i>270</i>	<i>^ 4</i>	<i>^ 13 134</i>	<i>^ 8 357</i>	<i>^ 31</i>
.....					
Australian Capital Territory					
ACT	78	^ —	^ 5 919	2 709	35
<i>Total</i>	<i>78</i>	<i>^ —</i>	<i>^ 5 919</i>	<i>2 709</i>	<i>35</i>
.....					
Australia(d)	104 486	1 167	11 173	4 062 800	39

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) Average weed expenditure per agricultural establishment undertaking weed activities.

(c) Average weed effort (in terms of person days) per agricultural establishment undertaking weed activities.

(d) See Explanatory Notes, paragraph 9.

3.4 PESTS, Expenditure and effort: by NHT2 Region(a)—2004–05

AGRICULTURAL ESTABLISHMENTS REPORTING PEST ACTIVITIES

	no.	Expenditure \$m	Average expenditure \$(b)	Total effort person days	Average effort person days(c)
New South Wales					
Border Rivers/Gwydir	2 232	^ 36	^ 16 282	^ 145 701	^ 65
Central West	4 659	^ 43	^ 9 130	^ 257 834	55
Hawkesbury/Nepean	^ 1 438	*10	* 7 077	^ 35 035	^ 24
Hunter/Central Rivers	2 480	^ 9	^ 3 765	^ 76 803	^ 31
Lachlan	4 533	32	7 139	182 766	40
Lower Murray/Darling	^ 342	**9	**26 344	*22 760	^ 67
Murray	2 417	^ 19	^ 7 687	^ 90 068	^ 37
Murrumbidgee	4 317	29	6 631	^ 181 273	^ 42
Namoi	2 541	^ 31	^ 12 086	^ 136 153	^ 54
Northern Rivers	4 894	^ 22	^ 4 547	^ 185 116	^ 38
Southern Rivers	^ 1 074	^ 4	^ 3 309	^ 22 205	^ 21
Sydney Metro	**17	*—	*1 083	**113	^ 7
Western	^ 647	^ 7	^ 10 936	^ 50 055	^ 77
<i>Total</i>	31 590	251	7 932	1 385 881	44
Victoria					
Corangamite	2 348	^ 8	^ 3 467	^ 46 295	^ 20
East Gippsland	^ 617	^ 2	^ 3 283	^ 13 465	^ 22
Glennelg Hopkins	2 934	^ 18	^ 6 075	^ 123 586	^ 42
Goulburn Broken	3 746	^ 23	^ 6 027	^ 102 906	^ 27
Mallee	1 934	^ 9	4 894	^ 78 749	^ 41
North Central	3 553	^ 15	4 328	106 405	30
North East (VIC)	1 650	^ 5	^ 2 982	^ 56 679	^ 34
Port Phillip and Westernport	2 374	^ 13	^ 5 294	^ 69 244	^ 29
West Gippsland	2 222	5	2 085	^ 46 387	^ 21
Wimmera	1 819	^ 10	^ 5 672	^ 65 834	^ 36
<i>Total</i>	23 198	108	4 649	709 549	31
Queensland					
Border Rivers	^ 836	^ 10	^ 11 700	^ 68 162	^ 82
Burdekin	1 207	^ 11	^ 9 414	^ 50 946	^ 42
Burnett Mary	4 381	^ 32	^ 7 351	^ 169 961	39
Cape York	*113	*1	*9 340	*5 776	*51
Cape York Northern Gulf	na	na	na	na	na
Condamine	2 472	^ 33	^ 13 488	^ 86 108	^ 35
Desert Channels	764	^ 6	^ 8 086	^ 51 920	^ 68
Fitzroy	2 589	^ 28	^ 10 882	^ 121 258	^ 47
Mackay Whitsunday	^ 865	*6	^ 7 075	*33 130	*38
Maranoa Balonne	1 273	^ 12	^ 9 297	^ 72 927	^ 57
Northern Gulf	^ 346	*4	*10 278	*16 022	*46
South East (QLD)	3 541	^ 14	4 077	^ 126 124	^ 36
South West (QLD)	^ 457	*5	*11 601	*38 995	^ 85
Southern Gulf	^ 304	^ 2	^ 7 799	*14 536	*48
Torres Strait	na	na	na	na	na
Wet Tropics	1 990	^ 12	^ 6 107	^ 95 966	^ 48
<i>Total(d)</i>	21 138	178	8 415	951 831	45

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) Average pest expenditure per agricultural establishment undertaking pest activities.

(c) Average pest effort (in terms of person days) per agricultural establishment undertaking pest activities.

(d) See Explanatory Notes, paragraph 9.

3.4 PESTS, Expenditure and effort: by NHT2 Region(a)—2004–05 *continued*

AGRICULTURAL ESTABLISHMENTS REPORTING PEST ACTIVITIES

	<i>no.</i>	<i>Expenditure \$m</i>	<i>Average expenditure \$(b)</i>	<i>Total effort person days</i>	<i>Average effort person days(c)</i>
South Australia					
Alinytjara Wilurara	na	na	na	na	na
Eyre Peninsula	1 222	^ 8	^ 6 466	^ 36 645	^ 30
Kangaroo Island	^ 193	* 2	* 11 248	* 11 913	* 62
Adelaide and Mount Lofty Ranges	1 491	^ 6	^ 4 080	^ 33 049	^ 22
Northern and Yorke	2 226	^ 11	^ 4 849	^ 62 260	^ 28
SA Arid Lands	^ 153	* 4	* 28 600	^ 14 991	^ 98
SA Murray Darling Basin	2 676	^ 12	^ 4 388	^ 77 864	^ 29
South East (SA)	2 343	^ 19	^ 8 103	^ 106 191	^ 45
<i>Total(d)</i>	<i>10 304</i>	<i>62</i>	<i>6 023</i>	<i>342 912</i>	<i>33</i>
Western Australia					
Avon	2 317	^ 28	^ 12 123	^ 91 445	^ 39
Northern Agricultural Region	1 058	^ 15	^ 14 368	^ 40 481	^ 38
Rangelands (WA)	633	* 10	* 15 936	^ 34 839	^ 55
South Coast Region	1 468	^ 15	^ 10 073	^ 56 653	^ 39
South West Region	3 118	^ 25	^ 8 007	^ 106 996	^ 34
Swan	897	^ 8	^ 8 396	^ 29 913	^ 33
<i>Total</i>	<i>9 491</i>	<i>101</i>	<i>10 606</i>	<i>360 327</i>	<i>38</i>
Tasmania					
North (TAS)	1 160	^ 7	^ 5 702	^ 39 722	^ 34
North West (TAS)	1 079	^ 5	^ 5 041	* 35 059	* 32
South (TAS)	808	^ 7	^ 8 662	^ 39 414	^ 49
<i>Total</i>	<i>3 047</i>	<i>19</i>	<i>6 253</i>	<i>^ 114 194</i>	<i>^ 37</i>
Northern Territory					
Northern Territory	292	^ 3	^ 10 444	^ 12 277	^ 42
<i>Total</i>	<i>292</i>	<i>^ 3</i>	<i>^ 10 444</i>	<i>^ 12 277</i>	<i>^ 42</i>
Australian Capital Territory					
ACT	76	^ —	^ 4 378	^ 3 148	^ 41
<i>Total</i>	<i>76</i>	<i>^ —</i>	<i>^ 4 378</i>	<i>^ 3 148</i>	<i>^ 41</i>
Australia(d)	99 136	721	7 277	3 880 120	39

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) Average pest expenditure per agricultural establishment undertaking pest activities.

(c) Average pest effort (in terms of person days) per agricultural establishment undertaking pest activities.

(d) See Explanatory Notes, paragraph 9.

3.5**LAND AND SOIL, Expenditure and effort: by NHT2 Region(a)—2004–05**

AGRICULTURAL ESTABLISHMENTS REPORTING LAND AND SOIL ACTIVITIES

	<i>no.</i>	<i>Expenditure \$m</i>	<i>Average expenditure \$(b)</i>	<i>Total effort person days</i>	<i>Average effort person days(c)</i>
New South Wales					
Border Rivers/Gwydir	1 677	^ 35	^ 21 050	^ 118 348	^ 71
Central West	3 622	^ 44	^ 12 192	^ 223 691	^ 62
Hawkesbury/Nepean	^ 1 052	^ 7	^ 6 365	^ 40 347	^ 38
Hunter/Central Rivers	1 908	^ 14	^ 7 413	^ 85 471	^ 45
Lachlan	3 658	39	10 768	177 220	48
Lower Murray/Darling	^ 253	*4	*17 243	*15 355	*61
Murray	2 169	^ 37	^ 16 996	^ 119 996	55
Murrumbidgee	3 201	35	10 995	^ 161 505	^ 50
Namoi	1 985	^ 29	^ 14 477	^ 119 526	^ 60
Northern Rivers	3 192	^ 25	^ 7 812	^ 181 063	^ 57
Southern Rivers	^ 830	^ 6	^ 7 243	^ 35 728	^ 43
Sydney Metro	*47	**—	**7 318	**1 857	**39
Western	^ 379	^ 8	^ 22 204	^ 33 588	^ 89
<i>Total</i>	23 974	285	11 870	1 313 697	55
Victoria					
Corangamite	1 643	^ 14	^ 8 473	^ 58 049	^ 35
East Gippsland	^ 532	^ 3	^ 6 272	*19 041	*36
Glennelg Hopkins	2 037	^ 16	^ 7 953	^ 60 281	^ 30
Goulburn Broken	2 981	^ 27	^ 9 175	^ 93 798	31
Mallee	1 454	^ 17	^ 11 683	^ 91 629	63
North Central	2 715	^ 29	10 528	^ 151 167	^ 56
North East (VIC)	1 219	^ 9	^ 7 089	^ 42 446	^ 35
Port Phillip and Westernport	1 808	*16	^ 9 051	^ 68 648	^ 38
West Gippsland	^ 1 853	^ 13	^ 6 895	^ 55 352	^ 30
Wimmera	1 500	^ 18	^ 12 211	^ 68 127	^ 45
<i>Total</i>	17 743	162	9 158	708 539	40
Queensland					
Border Rivers	^ 664	^ 15	^ 22 630	^ 43 907	^ 66
Burdekin	^ 1 005	^ 19	^ 18 874	^ 70 741	^ 70
Burnett Mary	2 660	^ 21	^ 7 772	^ 145 626	^ 55
Cape York	*59	*—	*6 162	*2 112	^ 36
Cape York Northern Gulf	na	na	na	na	na
Condamine	2 132	^ 26	^ 12 206	^ 109 335	^ 51
Desert Channels	^ 392	*7	*18 430	^ 30 967	^ 79
Fitzroy	1 775	^ 32	^ 18 042	^ 117 523	^ 66
Mackay Whitsunday	^ 913	^ 9	^ 9 911	^ 60 720	^ 66
Maranoa Balonne	867	^ 13	^ 15 334	^ 48 899	^ 56
Northern Gulf	^ 230	*3	^ 13 783	*11 066	^ 48
South East (QLD)	2 251	^ 16	^ 7 057	^ 125 031	^ 56
South West (QLD)	^ 242	*7	*29 055	*22 589	*93
Southern Gulf	^ 168	^ 5	^ 30 356	*18 352	*109
Torres Strait	na	na	na	na	na
Wet Tropics	1 852	^ 14	^ 7 581	^ 100 943	^ 55
<i>Total(d)</i>	15 212	188	12 353	907 809	60

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* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) Average land and soil expenditure per agricultural establishment undertaking land and soil activities.

(c) Average land and soil effort (in terms of person days) per agricultural establishment undertaking land and soil activities.

(d) See Explanatory Notes, paragraph 9.

3.5 LAND AND SOIL, Expenditure and effort: by NHT2 Region(a)—2004–05 *continued*

AGRICULTURAL ESTABLISHMENTS REPORTING LAND AND SOIL ACTIVITIES

	no.	Expenditure \$m	Average expenditure \$(b)	Total effort person days	Average effort person days(c)
South Australia					
Alinytjara Wilurara	na	na	na	na	na
Eyre Peninsula	1 074	^16	^14 437	^43 711	^41
Kangaroo Island	^221	*1	^6 256	*6 415	*29
Adelaide and Mount					
Lofty Ranges	1 196	^7	^5 639	^34 974	^29
Northern and Yorke	1 989	^20	^10 118	^89 960	^45
SA Arid Lands	^111	*3	*30 501	*14 867	*134
SA Murray Darling					
Basin	2 093	*41	*19 696	^118 732	^57
South East (SA)	1 560	*38	*24 173	^102 668	^66
<i>Total(d)</i>	8 243	^126	^15 294	411 328	50
Western Australia					
Avon	2 232	^38	^16 950	^138 936	^62
Northern Agricultural					
Region	910	^24	^26 617	^76 215	^84
Rangelands (WA)	^380	^11	^28 117	^38 045	^100
South Coast Region	1 147	^17	^15 090	^51 831	^45
South West Region	2 548	20	7 939	^107 330	^42
Swan	^657	^7	^10 262	*25 449	*39
<i>Total</i>	7 874	117	14 862	437 806	56
Tasmania					
North (TAS)	837	^10	^12 399	^27 701	^33
North West (TAS)	878	*10	*11 920	^45 108	^51
South (TAS)	565	^4	^7 185	^17 070	^30
<i>Total</i>	2 279	^25	^10 923	^89 879	^39
Northern Territory					
Northern Territory	^116	*4	*35 013	*7 827	*68
<i>Total</i>	^116	*4	*35 013	*7 827	*68
Australian Capital Territory					
ACT	64	^—	^5 107	^1 950	^30
<i>Total</i>	64	^—	^5 107	^1 950	^30
Australia(d)	75 505	907	12 017	3 878 835	51

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

— nil or rounded to zero (including null cells)

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) Average land and soil expenditure per agricultural establishment undertaking land and soil activities.

(c) Average land and soil effort (in terms of person days) per agricultural establishment undertaking land and soil activities.

(d) See Explanatory Notes, paragraph 9.

3.6**WATER, Expenditure and effort: by NHT2 Region(a)—2004–05**

AGRICULTURAL ESTABLISHMENTS REPORTING WATER ACTIVITIES

	<i>no.</i>	<i>Expenditure \$m</i>	<i>Average expenditure \$(b)</i>	<i>Total effort person days</i>	<i>Average effort person days(c)</i>
New South Wales					
Border Rivers/Gwydir	^ 903	^ 16	^ 17 303	^ 26 306	^ 29
Central West	2 001	^ 19	^ 9 426	^ 57 709	^ 29
Hawkesbury/Nepean	^ 585	*3	*5 687	^ 12 733	^ 22
Hunter/Central Rivers	^ 1 121	*6	*5 689	^ 22 332	^ 20
Lachlan	1 959	^ 16	^ 8 404	^ 43 663	^ 22
Lower Murray/Darling	^ np	*np	^ 12 197	*np	^ 40
Murray	1 315	^ 15	^ 11 542	^ 43 048	^ 33
Murrumbidgee	1 874	^ 19	^ 9 926	^ 66 462	^ 35
Namoi	^ 1 245	*16	*12 845	^ 30 833	^ 25
Northern Rivers	^ 1 553	^ 8	^ 4 954	^ 28 121	^ 18
Southern Rivers	^ 396	*3	*6 481	*7 739	*20
Sydney Metro	**np	**np	**np	**np	np
Western	^ 297	*5	^ 15 705	^ 11 132	^ 37
<i>Total</i>	<i>13 490</i>	<i>128</i>	<i>9 501</i>	<i>359 085</i>	<i>27</i>
Victoria					
Corangamite	^ 945	^ 4	^ 4 194	^ 12 581	^ 13
East Gippsland	^ 307	^ 1	^ 2 185	*7 638	*25
Glennelg Hopkins	^ 1 176	^ 5	^ 4 449	*17 773	^ 15
Goulburn Broken	1 853	^ 9	^ 5 090	^ 36 108	^ 19
Mallee	^ 589	**11	**18 094	^ 15 222	^ 26
North Central	1 601	^ 8	^ 5 103	^ 39 471	^ 25
North East (VIC)	^ 705	*3	*4 119	*19 496	*28
Port Phillip and Westernport	^ 1 015	^ 3	^ 3 371	^ 17 185	^ 17
West Gippsland	^ 1 012	^ 4	^ 3 614	*12 345	*12
Wimmera	^ 679	^ 3	^ 4 106	*11 849	^ 17
<i>Total</i>	<i>9 882</i>	<i>^ 51</i>	<i>^ 5 151</i>	<i>189 668</i>	<i>19</i>
Queensland					
Border Rivers	^ 411	^ 4	^ 9 769	*10 206	*25
Burdekin	^ 713	^ 8	^ 10 789	^ 25 955	^ 36
Burnett Mary	^ 1 739	^ 9	^ 4 903	^ 39 602	^ 23
Cape York	**42	**—	**7 367	**1 397	^ 34
Cape York Northern Gulf	na	na	na	na	na
Condamine	^ 1 225	^ 12	^ 9 573	^ 28 950	^ 24
Desert Channels	^ 327	*4	*12 688	*14 954	*46
Fitzroy	^ 924	^ 9	^ 10 230	^ 33 880	^ 37
Mackay Whitsunday	^ 574	*6	*9 598	^ 9 781	^ 17
Maranoa Balonne	^ 448	^ 5	^ 10 488	^ 17 123	^ 38
Northern Gulf	*95	**2	**18 010	*2 837	*30
South East (QLD)	^ 1 259	**16	**12 744	*54 950	*44
South West (QLD)	^ 232	*2	^ 9 860	*11 055	*48
Southern Gulf	^ 137	*3	*25 372	*5 695	*42
Torres Strait	na	na	na	na	na
Wet Tropics	1 091	^ 6	^ 5 104	^ 25 111	^ 23
<i>Total(d)</i>	<i>9 218</i>	<i>^ 85</i>	<i>^ 9 241</i>	<i>281 496</i>	<i>31</i>

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

na not available

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) Average water expenditure per agricultural establishment undertaking water activities.

(c) Average water effort (in terms of person days) per agricultural establishment undertaking water activities.

(d) See Explanatory Notes, paragraph 9.

3.6 WATER, Expenditure and effort: by NHT2 Region(a)—2004–05 *continued*

AGRICULTURAL ESTABLISHMENTS REPORTING WATER ACTIVITIES

	<i>no.</i>	<i>Expenditure \$m</i>	<i>Average expenditure \$(b)</i>	<i>Total effort person days</i>	<i>Average effort person days(c)</i>
South Australia					
Alinytjara Wilurara	na	na	na	na	na
Eyre Peninsula	^ 328	*2	^ 5 192	*8 046	*25
Kangaroo Island	*120	*—	*2 233	*744	*6
Adelaide and Mount Lofty Ranges	^ 744	^ 2	^ 3 063	^ 9 131	^ 12
Northern and Yorke	^ 570	^ 1	^ 2 420	*5 408	^ 9
SA Arid Lands	*57	**2	*30 398	*4 646	*82
SA Murray Darling Basin	1 223	^ 7	^ 5 451	^ 27 460	^ 22
South East (SA)	^ 750	^ 4	^ 5 759	*14 003	*19
<i>Total(d)</i>	3 793	^ 18	4 836	^ 69 438	^ 18
Western Australia					
Avon	1 292	^ 5	4 016	^ 16 580	^ 13
Northern Agricultural Region	^ 527	*4	^ 8 021	*12 252	^ 23
Rangelands (WA)	^ 286	*4	*14 958	*14 313	*50
South Coast Region	764	^ 4	^ 4 710	^ 13 292	^ 17
South West Region	1 597	^ 6	^ 3 835	^ 20 520	^ 13
Swan	^ 407	^ 1	^ 3 458	*7 363	*18
<i>Total</i>	4 873	25	5 095	^ 84 320	^ 17
Tasmania					
North (TAS)	619	^ 3	^ 4 185	*13 400	*22
North West (TAS)	^ 442	^ 2	^ 3 487	*16 320	*37
South (TAS)	^ 271	^ 1	^ 3 590	^ 2 875	^ 11
<i>Total</i>	1 332	^ 5	3 833	*32 596	*24
Northern Territory					
Northern Territory	*61	*1	*18 474	*988	^ 16
<i>Total</i>	*61	*1	*18 474	*988	^ 16
Australian Capital Territory					
ACT	^ 36	^ —	^ 3 405	*740	*21
<i>Total</i>	^ 36	^ —	^ 3 405	*740	*21
Australia(d)	42 685	314	7 351	1 018 331	24

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) Average water expenditure per agricultural establishment undertaking water activities.

(c) Average water effort (in terms of person days) per agricultural establishment undertaking water activities.

(d) See Explanatory Notes, paragraph 9.

3.7 NATURAL RESOURCE MANAGEMENT, Issues and action: by NHT2

Region (a)—2004–05

	AGRICULTURAL ESTABLISHMENTS REPORTING NRM ISSUES			AGRICULTURAL ESTABLISHMENTS REPORTING NO NRM ISSUES			
	<i>Agricultural establishments no.</i>	<i>no. (b)</i>	<i>Managing % (c)</i>	<i>Not managing %</i>	<i>no.</i>	<i>Managing %</i>	<i>Not managing %</i>
New South Wales							
Border Rivers/Gwydir	2 583	2 327	97.7	**2.3	*255	**36.6	*63.4
Central West	5 461	4 841	98.8	**1.2	^ 620	*41.9	^ 58.1
Hawkesbury/Nepean	2 343	1 773	95.5	*4.5	^ 569	^ 53.2	^ 46.8
Hunter/Central Rivers	3 423	3 030	96.5	**3.5	^ 393	*47.0	^ 53.0
Lachlan	5 484	4 686	np	**np	^ 799	^ 54.8	^ 45.2
Lower Murray/Darling	680	^ 507	100.0	—	*173	*42.0	*58.0
Murray	3 024	2 709	np	**np	^ 315	*28.8	^ 71.2
Murrumbidgee	5 543	4 878	97.9	*2.1	^ 665	^ 32.0	^ 68.0
Namoi	2 891	2 766	100.0	—	^ 125	*np	^ np
Northern Rivers	6 348	5 634	99.4	**0.6	^ 714	^ 62.9	^ 37.1
Southern Rivers	1 472	1 174	np	**np	*298	**36.1	*63.9
Sydney Metro	*65	*np	100.0	—	**np	**np	**np
Western	775	np	np	**np	**np	np	np
<i>Total</i>	<i>40 091</i>	<i>35 081</i>	<i>98.6</i>	<i>^ 1.4</i>	<i>5 010</i>	<i>45.5</i>	<i>54.5</i>
Victoria							
Corangamite	3 163	2 587	96.5	*3.5	^ 576	^ 55.6	^ 44.4
East Gippsland	^ 832	^ 676	100.0	—	*156	*56.7	*43.3
Glenelg Hopkins	3 816	3 285	96.8	*3.2	^ 531	*34.9	^ 65.1
Goulburn Broken	5 043	4 286	np	**np	^ 757	^ 41.2	^ 58.8
Mallee	2 872	2 164	100.0	—	^ 708	^ 72.9	*27.1
North Central	4 504	4 049	98.8	**1.2	^ 455	^ 51.5	^ 48.5
North East (VIC)	2 205	1 871	np	**np	^ 334	*47.9	^ 52.1
Port Phillip and Westernport	3 747	2 898	np	**np	^ 849	^ 67.8	^ 32.2
West Gippsland	3 879	3 045	np	**np	^ 834	^ 55.2	^ 44.8
Wimmera	2 281	2 063	97.6	*2.4	^ 219	^ 61.5	^ 38.5
<i>Total</i>	<i>32 342</i>	<i>26 924</i>	<i>98.6</i>	<i>^ 1.4</i>	<i>5 418</i>	<i>55.1</i>	<i>44.9</i>

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 23.

(c) Agricultural establishments reporting NRM issues may not necessarily be undertaking related management activities.

3.7 NATURAL RESOURCE MANAGEMENT, Issues and action: by NHT2

Region (a)—2004–05 *continued*

	AGRICULTURAL ESTABLISHMENTS REPORTING NRM ISSUES				AGRICULTURAL ESTABLISHMENTS REPORTING NO NRM ISSUES		
	<i>Agricultural establishments no.</i>	<i>no. (b)</i>	<i>Managing % (c)</i>	<i>Not managing %</i>	<i>no.</i>	<i>Managing %</i>	<i>Not managing %</i>
Queensland							
Border Rivers	988	910	95.9	**4.1	*78	*47.4	*52.6
Burdekin	1 664	1 436	95.8	**4.2	^ 228	*28.9	^ 71.1
Burnett Mary	5 284	4 773	98.1	**1.9	^ 511	^ 44.6	^ 55.4
Cape York	*131	*np	100.0	—	**np	np	np
Cape York Northern Gulf	na	na	na	na	na	na	na
Condamine	3 435	3 022	98.0	*2.0	^ 413	*36.7	^ 63.3
Desert Channels	822	737	98.6	**np	*85	*72.2	**np
Fitzroy	3 184	2 835	97.4	*2.6	*349	*39.0	^ 61.0
Mackay Whitsunday	1 405	1 262	99.5	**np	*144	**37.1	*62.9
Maranoa Balonne	1 448	1 317	97.6	**2.4	*131	*58.9	*41.1
Northern Gulf	^ 551	^ 413	96.3	**3.7	*138	*34.3	^ 65.7
South East (QLD)	4 560	3 999	97.9	*2.1	^ 561	^ 52.4	^ 47.6
South West (QLD)	^ 480	^ np	100.0	—	**np	**np	**np
Southern Gulf	371	^ 314	np	**np	*57	**np	^ np
Torres Strait	na	na	na	na	na	na	na
Wet Tropics	2 808	2 414	np	**np	^ 394	^ 50.3	^ 49.7
<i>Total(d)</i>	<i>27 132</i>	<i>23 992</i>	<i>97.9</i>	<i>^ 2.1</i>	<i>3 140</i>	<i>44.4</i>	<i>55.6</i>
South Australia							
Alinytjara Wilurara	na	na	na	na	na	na	na
Eyre Peninsula	1 484	1 341	98.2	**1.8	^ 143	*np	^ np
Kangaroo Island	^ 234	^ np	100.0	—	**np	np	np
Adelaide and Mount Lofty Ranges	2 313	1 914	np	**np	^ 399	^ 56.6	^ 43.4
Northern and Yorke	2 973	2 642	98.9	**1.1	^ 331	^ 65.1	*34.9
SA Arid Lands	^ 171	^ np	100.0	—	**np	**np	*np
SA Murray Darling Basin	4 116	3 446	98.9	**1.1	^ 670	^ 61.7	^ 38.3
South East (SA)	2 821	2 425	np	**np	^ 396	^ 51.9	^ 48.1
<i>Total(d)</i>	<i>14 111</i>	<i>12 148</i>	<i>98.9</i>	<i>*1.1</i>	<i>1 962</i>	<i>57.0</i>	<i>43.0</i>
Western Australia							
Avon	2 758	2 570	100.0	—	^ 188	*35.0	^ 65.0
Northern Agricultural Region	1 191	1 125	np	**np	*67	*np	**np
Rangelands (WA)	773	650	100.0	—	*123	^ np	*np
South Coast Region	1 845	1 637	np	**np	*208	*55.7	*44.3
South West Region	3 984	3 440	98.6	*1.4	^ 544	^ 37.7	^ 62.3
Swan	1 364	1 128	np	**np	^ 236	^ 47.4	^ 52.6
<i>Total</i>	<i>11 915</i>	<i>10 549</i>	<i>99.0</i>	<i>*1.0</i>	<i>1 366</i>	<i>^ 45.6</i>	<i>54.4</i>

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

na not available

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 23.

(c) Agricultural establishments reporting NRM issues may not necessarily be undertaking related management activities.

(d) See Explanatory Notes, paragraph 9.

3.7

NATURAL RESOURCE MANAGEMENT, Issues and action: by NHT2

Region (a)—2004–05 *continued*

	Agricultural establishments no.	AGRICULTURAL ESTABLISHMENTS REPORTING NRM ISSUES			AGRICULTURAL ESTABLISHMENTS REPORTING NO NRM ISSUES		
		no. (b)	Managing %(c)	Not managing %	no.	Managing %	Not managing %
Tasmania							
North (TAS)	1 414	1 269	97.2	**2.8	*145	*33.7	^ 66.3
North West (TAS)	1 491	1 173	np	**np	^ 318	^ 47.0	^ 53.0
South (TAS)	972	812	np	**np	^ 160	*47.0	^ 53.0
<i>Total</i>	3 877	3 254	98.2	*1.8	^ 623	^ 43.9	^ 56.1
Northern Territory							
Northern Territory	380	np	np	**np	*np	*np	**np
<i>Total</i>	380	np	np	**np	*np	*np	**np
Australian Capital Territory							
ACT	86	np	np	**np	**np	np	np
<i>Total</i>	86	np	np	**np	**np	np	np
Australia (d)	129 934	112 357	98.5	^ 1.5	17 577	49.6	50.4

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np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 23.

(c) Agricultural establishments reporting NRM issues may not necessarily be undertaking related management activities.

(d) See Explanatory Notes, paragraph 9.

3.8 WEEDS, Area managed and affected: by NHT2 Region(a)—2004–05

	Area of agricultural land '000 ha	AREA MANAGED FOR WEEDS (b)		AREA AFFECTED BY WEEDS (b)	
		'000 ha	%	'000 ha	%
New South Wales					
Border Rivers/Gwydir	4 355	^ 1 405	32.3	1 614	37.0
Central West	^ 8 104	2 710	^ 33.4	3 028	^ 37.4
Hawkesbury/Nepean	* 1 807	^ 128	* 7.1	^ 182	* 10.1
Hunter/Central Rivers	* 2 489	^ 516	* 20.7	^ 531	* 21.3
Lachlan	^ 8 045	2 199	^ 27.3	2 604	^ 32.4
Lower Murray/Darling	* 5 711	* 282	* 4.9	* 497	* 8.7
Murray	^ 3 278	1 042	^ 31.8	1 196	^ 36.5
Murrumbidgee	^ 5 895	^ 1 891	32.1	1 936	^ 32.8
Namoi	3 319	^ 1 363	41.1	^ 1 637	49.3
Northern Rivers	2 139	^ 554	^ 25.9	^ 689	^ 32.2
Southern Rivers	^ 511	^ 188	^ 36.8	^ 197	^ 38.5
Sydney Metro	** 13	** 2	** 18.2	** 4	** 29.8
Western	^ 18 691	^ 1 685	^ 9.0	^ 3 802	^ 20.3
Total	64 356	13 965	21.7	17 915	27.8
Victoria					
Corangamite	964	^ 219	^ 22.7	^ 224	^ 23.3
East Gippsland	** 450	* 95	* 21.1	* 91	* 20.3
Glenelg Hopkins	1 842	^ 358	19.4	^ 399	^ 21.7
Goulburn Broken	1 593	^ 491	^ 30.8	^ 466	^ 29.3
Mallee	2 231	^ 890	39.9	^ 941	42.2
North Central	^ 2 821	930	^ 33.0	956	^ 33.9
North East (VIC)	^ 708	^ 255	^ 36.1	^ 240	^ 33.9
Port Phillip and Westernport	458	^ 167	36.3	^ 147	^ 32.0
West Gippsland	^ 890	^ 241	^ 27.1	^ 205	^ 23.1
Wimmera	1 962	^ 610	31.1	602	30.7
Total	13 920	4 256	30.6	4 272	30.7
Queensland					
Border Rivers	^ 3 314	^ 599	^ 18.1	* 1 026	* 31.0
Burdekin	^ 13 971	^ 2 265	^ 16.2	^ 2 288	^ 16.4
Burnett Mary	^ 4 612	^ 1 150	^ 24.9	^ 1 205	^ 26.1
Cape York	* 8 520	** 2 681	** 31.5	** 2 213	** 26.0
Cape York Northern Gulf	na	na	na	na	na
Condamine	^ 2 355	716	^ 30.4	^ 686	^ 29.2
Desert Channels	^ 43 305	^ 3 170	^ 7.3	^ 4 725	^ 10.9
Fitzroy	^ 15 734	* 3 164	* 20.1	* 3 719	^ 23.6
Mackay Whitsunday	* 704	^ 123	* 17.5	^ 122	* 17.4
Maranoa Balonne	6 365	^ 994	^ 15.6	^ 1 214	^ 19.1
Northern Gulf	* 11 739	** 500	** 4.3	** 1 724	* 14.7
South East (QLD)	* 1 784	* 430	* 24.1	^ 439	* 24.6
South West (QLD)	^ 15 050	* 373	* 2.5	* 1 154	* 7.7
Southern Gulf	^ 14 907	* 2 504	* 16.8	* 2 228	* 14.9
Torres Strait	na	na	na	na	na
Wet Tropics	* 1 437	* 374	** 26.0	* 290	** 20.2
Total(c)	143 797	^ 19 042	^ 13.2	23 033	16.0

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** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 24.

(c) See Explanatory Notes, paragraph 9.

3.8 WEEDS, Area managed and affected: by NHT2 Region(a)—2004–05 *continued* ...

	Area of agricultural land '000 ha	AREA MANAGED FOR WEEDS (b)		AREA AFFECTED BY WEEDS (b)	
		'000 ha	%	'000 ha	%
.....					
South Australia					
Alinytjara Wilurara	na	na	na	na	na
Eyre Peninsula	4 274	^ 1 235	28.9	^ 1 378	32.2
Kangaroo Island	^ 156	*25	*16.2	*33	^ 21.4
Adelaide and Mount Lofty Ranges	^ 475	^ 147	^ 31.0	^ 151	^ 31.7
Northern and Yorke	3 404	1 144	33.6	1 014	29.8
SA Arid Lands	^ 40 009	**4 501	**11.3	*1 219	*3.0
SA Murray Darling Basin	3 337	^ 972	^ 29.1	970	29.1
South East (SA)	2 452	^ 568	23.2	677	27.6
Total(c)	^ 54 107	*8 593	*15.9	^ 5 443	^ 10.1
.....					
Western Australia					
Avon	8 377	3 387	40.4	3 493	41.7
Northern Agricultural Region	4 635	^ 1 705	^ 36.8	^ 1 956	42.2
Rangelands (WA)	^ 84 449	*6 443	*7.6	**4 380	**5.2
South Coast Region	3 023	^ 696	^ 23.0	^ 836	^ 27.6
South West Region	3 669	^ 648	^ 17.6	^ 787	^ 21.4
Swan	^ 493	*102	^ 20.8	*102	^ 20.6
Total	104 646	^ 12 982	^ 12.4	^ 11 553	^ 11.0
.....					
Tasmania					
North (TAS)	757	^ 113	^ 15.0	^ 175	^ 23.1
North West (TAS)	300	^ 112	^ 37.3	^ 108	36.0
South (TAS)	746	*99	*13.3	^ 113	^ 15.2
Total	1 803	^ 325	^ 18.0	396	22.0
.....					
Northern Territory					
Northern Territory	62 473	*11 069	*17.7	*8 360	*13.4
Total	62 473	*11 069	*17.7	*8 360	*13.4
.....					
Australian Capital Territory					
ACT	^ 48	^ 15	^ 31.4	^ 17	^ 35.0
Total	^ 48	^ 15	^ 31.4	^ 17	^ 35.0
Australia(c)	445 149	70 245	15.8	70 988	16

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na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 24.

(c) See Explanatory Notes, paragraph 9.

3.9 PESTS, Area managed and affected: by NHT2 Region (a)—2004–05

	Area of agricultural land '000 ha	AREA MANAGED FOR PESTS (b)		AREA AFFECTED BY PESTS (b)	
		'000 ha	%	'000 ha	%
New South Wales					
Border Rivers/Gwydir	4 355	^ 2 701	62.0	^ 2 578	59.2
Central West	^ 8 104	4 658	^ 57.5	4 801	^ 59.2
Hawkesbury/Nepean	* 1 807	* 943	* 52.2	* 447	* 24.8
Hunter/Central Rivers	* 2 489	* 1 581	^ 63.5	* 1 649	^ 66.3
Lachlan	^ 8 045	^ 5 419	67.4	^ 4 819	59.9
Lower Murray/Darling	* 5 711	* 4 784	83.8	* 4 798	84.0
Murray	^ 3 278	^ 1 959	59.7	^ 1 935	59.0
Murrumbidgee	^ 5 895	^ 3 889	66.0	^ 3 906	66.3
Namoi	3 319	^ 1 792	54.0	^ 1 774	53.5
Northern Rivers	2 139	^ 1 240	58.0	^ 1 061	49.6
Southern Rivers	^ 511	^ 293	^ 57.3	^ 230	^ 45.0
Sydney Metro	** 13	** 1	** 11.1	** 9	^ 64.4
Western	^ 18 691	^ 15 087	80.7	^ 15 531	83.1
<i>Total</i>	64 356	44 347	68.9	43 539	67.7
Victoria					
Corangamite	964	443	^ 46.0	405	^ 42.1
East Gippsland	* 450	* 124	* 27.6	* 116	* 25.8
Glenelg Hopkins	1 842	999	54.2	974	52.9
Goulburn Broken	1 593	833	52.3	761	47.8
Mallee	2 231	992	44.4	^ 901	40.4
North Central	^ 2 821	1 174	^ 41.6	1 095	^ 38.8
North East (VIC)	^ 708	275	^ 38.9	260	^ 36.7
Port Phillip and Westernport	458	^ 175	38.3	^ 143	^ 31.1
West Gippsland	^ 890	279	^ 31.3	^ 267	^ 30.0
Wimmera	1 962	933	47.6	815	41.6
<i>Total</i>	13 920	6 227	44.7	5 737	41.2
Queensland					
Border Rivers	^ 3 314	* 2 563	77.4	* 2 308	^ 69.6
Burdekin	^ 13 971	^ 10 249	73.4	^ 10 180	72.9
Burnett Mary	^ 4 612	^ 2 641	^ 57.3	^ 2 445	^ 53.0
Cape York	* 8 520	* 6 798	^ 79.8	* 6 182	^ 72.6
Cape York Northern Gulf	na	na	na	na	na
Condamine	^ 2 355	^ 1 199	^ 50.9	^ 1 145	^ 48.6
Desert Channels	^ 43 305	^ 30 770	71.1	^ 30 748	71.0
Fitzroy	^ 15 734	^ 10 063	64.0	^ 8 565	^ 54.4
Mackay Whitsunday	* 704	* 307	^ 43.6	* 320	^ 45.5
Maranoa Balonne	6 365	^ 4 650	73.1	^ 4 531	71.2
Northern Gulf	* 11 739	* 6 001	* 51.1	* 6 549	* 55.8
South East (QLD)	* 1 784	* 1 146	^ 64.2	* 1 152	^ 64.6
South West (QLD)	^ 15 050	^ 10 978	^ 72.9	^ 9 622	^ 63.9
Southern Gulf	^ 14 907	^ 7 290	^ 48.9	^ 11 612	77.9
Torres Strait	na	na	na	na	na
Wet Tropics	* 1 437	* 550	* 38.3	* 413	** 28.7
<i>Total(c)</i>	143 797	95 205	66.2	95 771	66.6

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* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 24.

(c) See Explanatory Notes, paragraph 9.

3.9 PESTS, Area managed and affected: by NHT2 Region (a)—2004–05 *continued* . . .

	Area of agricultural land '000 ha	AREA MANAGED FOR PESTS (b)		AREA AFFECTED BY PESTS (b)	
		'000 ha	%	'000 ha	%
.....					
South Australia					
Alinytjara Wilurara	na	na	na	na	na
Eyre Peninsula	4 274	^ 2 070	48.4	^ 1 791	41.9
Kangaroo Island	^ 156	^ 88	^ 56.5	^ 94	^ 60.3
Adelaide and Mount Lofty Ranges	^ 475	^ 183	^ 38.5	^ 198	^ 41.7
Northern and Yorke	3 404	^ 1 851	54.4	^ 1 535	45.1
SA Arid Lands	^ 40 009	^ 21 772	^ 54.4	*19 502	*48.7
SA Murray Darling Basin	3 337	^ 1 623	48.6	^ 1 368	41.0
South East (SA)	2 452	1 205	49.1	1 307	53.3
Total(c)	^ 54 107	^ 28 792	^ 53.2	^ 25 795	^ 47.7
.....					
Western Australia					
Avon	8 377	3 904	46.6	3 845	45.9
Northern Agricultural Region	4 635	2 311	49.9	2 169	46.8
Rangelands (WA)	^ 84 449	^ 70 687	83.7	^ 57 423	68.0
South Coast Region	3 023	^ 1 569	51.9	^ 1 645	54.4
South West Region	3 669	1 747	47.6	1 567	42.7
Swan	^ 493	^ 211	^ 42.8	^ 181	^ 36.8
Total	104 646	^ 80 430	76.9	^ 66 832	63.9
.....					
Tasmania					
North (TAS)	757	^ 350	46.3	^ 423	55.9
North West (TAS)	300	^ 137	45.6	^ 135	45.0
South (TAS)	746	^ 345	46.3	^ 429	57.5
Total	1 803	832	46.2	987	54.7
.....					
Northern Territory					
Northern Territory	62 473	^ 32 069	^ 51.3	^ 37 940	^ 60.7
Total	62 473	^ 32 069	^ 51.3	^ 37 940	^ 60.7
.....					
Australian Capital Territory					
ACT	^ 48	^ 31	^ 65.6	^ 31	^ 65.0
Total	^ 48	^ 31	^ 65.6	^ 31	^ 65.0
Australia(c)	445 149	287 933	64.7	276 631	62.1

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 24.

(c) See Explanatory Notes, paragraph 9.

3.10 LAND AND SOIL, Area managed: by NHT2 Region (a)—2004–05

	Area of agricultural land '000 ha	AREA MANAGED FOR LAND AND SOIL(b)	
		'000 ha	%
New South Wales			
Border Rivers/Gwydir	4 355	1 348	31.0
Central West	^ 8 104	^ 2 796	^ 34.5
Hawkesbury/Nepean	* 1 807	^ 275	* 15.2
Hunter/Central Rivers	* 2 489	* 423	** 17.0
Lachlan	^ 8 045	^ 3 033	^ 37.7
Lower Murray/Darling	* 5 711	* 2 353	* 41.2
Murray	^ 3 278	986	^ 30.1
Murrumbidgee	^ 5 895	^ 1 914	^ 32.5
Namoi	3 319	^ 1 098	^ 33.1
Northern Rivers	2 139	^ 569	^ 26.6
Southern Rivers	^ 511	^ 181	^ 35.5
Sydney Metro	** 13	** 6	* 45.5
Western	^ 18 691	^ 5 195	^ 27.8
<i>Total</i>	64 356	20 178	31.4
Victoria			
Corangamite	964	^ 224	^ 23.3
East Gippsland	* 450	^ 84	* 18.7
Glenelg Hopkins	1 842	^ 516	28.0
Goulburn Broken	1 593	^ 530	^ 33.3
Mallee	2 231	1 038	46.5
North Central	^ 2 821	910	^ 32.3
North East (VIC)	^ 708	^ 139	^ 19.6
Port Phillip and Westernport	458	^ 149	32.4
West Gippsland	^ 890	^ 181	^ 20.4
Wimmera	1 962	^ 708	36.1
<i>Total</i>	13 920	4 480	32.2
Queensland			
Border Rivers	^ 3 314	* 1 148	^ 34.6
Burdekin	^ 13 971	^ 4 022	^ 28.8
Burnett Mary	^ 4 612	^ 1 162	^ 25.2
Cape York	* 8 520	** 1 047	** 12.3
Cape York Northern Gulf	na	na	na
Condamine	^ 2 355	^ 903	^ 38.4
Desert Channels	^ 43 305	* 18 615	^ 43.0
Fitzroy	^ 15 734	^ 4 389	^ 27.9
Mackay Whitsunday	* 704	* 155	* 22.1
Maranoa Balonne	6 365	^ 1 750	^ 27.5
Northern Gulf	* 11 739	* 880	* 7.5
South East (QLD)	* 1 784	^ 314	^ 17.6
South West (QLD)	^ 15 050	* 2 832	* 18.8
Southern Gulf	^ 14 907	* 6 015	^ 40.4
Torres Strait	na	na	na
Wet Tropics	* 1 437	* 438	** 30.5
<i>Total(c)</i>	143 797	^ 43 670	^ 30.4

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 24.

(c) See Explanatory Notes, paragraph 9.

3.10**LAND AND SOIL, Area managed: by NHT2 Region (a)—2004–05** *continued*

	Area of agricultural land '000 ha	AREA MANAGED FOR LAND AND SOIL (b)	
		'000 ha	%
.....			
South Australia			
Alinytjara Wilurara	na	na	na
Eyre Peninsula	4 274	1 125	^ 26.3
Kangaroo Island	^ 156	^ 38	^ 24.5
Adelaide and Mount Lofty Ranges	^ 475	^ 130	^ 27.4
Northern and Yorke	3 404	^ 1 362	40.0
SA Arid Lands	^ 40 009	*20 187	^ 50.5
SA Murray Darling Basin	3 337	^ 1 145	^ 34.3
South East (SA)	2 452	^ 793	^ 32.3
Total(c)	^ 54 107	^ 24 780	^ 45.8
Western Australia			
Avon	8 377	3 332	39.8
Northern Agricultural Region	4 635	^ 1 902	^ 41.0
Rangelands (WA)	^ 84 449	*26 004	^ 30.8
South Coast Region	3 023	^ 1 094	^ 36.2
South West Region	3 669	^ 1 284	35.0
Swan	^ 493	*185	^ 37.5
Total	104 646	^ 33 799	^ 32.3
Tasmania			
North (TAS)	757	^ 185	^ 24.4
North West (TAS)	300	^ 122	40.5
South (TAS)	746	*212	*28.4
Total	1 803	^ 518	^ 28.8
Northern Territory			
Northern Territory	62 473	*6 304	*10.1
Total	62 473	*6 304	*10.1
Australian Capital Territory			
ACT	^ 48	*11	*24.0
Total	^ 48	*11	*24.0
Australia(c)	445 149	133 741	30.0

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

na not available

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 24.

(c) See Explanatory Notes, paragraph 9.

3.11 REASONS FOR NATIVE VEGETATION: by NHT2 Region(a)—2004–05

REASONS FOR HAVING NATIVE VEGETATION(c)(d)

	<i>Agricultural establishments reporting native vegetation no.(b)</i>	<i>Provides stock grazing %</i>	<i>Provides wildlife habitat %</i>	<i>Addresses or prevents land management problems %</i>	<i>Provides shelter and shade for stock and crops %</i>	<i>Aesthetic reasons %</i>	<i>Too expensive or difficult to clear %</i>	<i>Restrictions on vegetation removal %</i>
New South Wales								
Border Rivers/Gwydir	2 018	68.4	^ 44.1	^ 42.8	79.3	^ 32.6	^ 31.1	^ 34.4
Central West	3 757	62.6	47.7	44.5	73.8	30.4	^ 28.9	^ 27.3
Hawkesbury/Nepean	^ 1 280	^ 44.3	^ 56.2	^ 48.4	60.7	^ 45.5	*18.1	*11.5
Hunter/Central Rivers	2 301	^ 48.1	60.3	56.1	67.8	^ 38.8	^ 24.4	^ 27.2
Lachlan	3 475	46.2	58.7	50.2	79.6	44.0	^ 18.0	^ 19.5
Lower Murray/Darling	^ 246	77.9	^ np	^ 57.4	^ 75.1	*np	*18.6	*np
Murray	1 887	41.8	63.5	43.4	74.4	52.4	^ 13.2	^ 17.2
Murrumbidgee	2 758	47.4	64.7	48.1	74.5	46.8	^ 21.2	^ 19.5
Namoi	2 152	68.9	50.6	^ 42.4	68.6	^ 31.9	^ 28.7	^ 33.7
Northern Rivers	4 114	38.8	53.6	48.0	62.6	39.3	^ 35.5	^ 31.3
Southern Rivers	^ 844	^ 32.9	^ 55.5	^ 41.3	67.1	^ 50.1	^ 32.9	^ 21.5
Sydney Metro	*31	—	**np	**38.7	*74.3	**np	*63.4	**np
Western	^ 704	70.8	^ np	^ 33.4	64.3	*np	^ 38.8	^ np
<i>Total</i>	<i>25 569</i>	<i>51.5</i>	<i>55.1</i>	<i>46.8</i>	<i>71.2</i>	<i>39.3</i>	<i>26.0</i>	<i>26.1</i>
Victoria								
Corangamite	1 579	^ 16.5	55.5	^ 40.4	79.8	^ 42.9	^ 16.4	*11.8
East Gippsland	^ 598	*27.2	^ 60.1	^ 40.0	79.2	^ 44.6	*24.1	^ 32.4
Glenelg Hopkins	1 739	^ 18.1	57.4	^ 32.5	77.6	^ 48.3	^ 15.5	^ 19.7
Goulburn Broken	2 880	^ 34.8	59.8	49.7	72.9	59.8	*10.2	^ 11.2
Mallee	955	^ 32.9	57.4	^ 38.7	80.8	43.4	^ 9.7	^ 34.0
North Central	2 408	^ 32.3	59.2	44.1	76.5	46.2	^ 9.4	^ 10.5
North East (VIC)	1 327	^ 31.1	^ 40.0	^ 30.4	64.4	^ 35.1	^ 25.3	^ 19.4
Port Phillip and Westernport	1 815	^ 24.3	^ 48.2	^ 35.8	62.4	^ 45.1	*11.2	^ 15.6
West Gippsland	2 016	^ 21.5	^ 59.0	^ 40.5	83.0	^ 48.1	*12.0	*8.8
Wimmera	1 392	^ 28.6	52.3	^ 29.7	72.0	^ 40.7	*4.6	^ 25.7
<i>Total</i>	<i>16 711</i>	<i>27.0</i>	<i>55.4</i>	<i>39.4</i>	<i>74.6</i>	<i>47.0</i>	<i>12.7</i>	<i>16.1</i>

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 19.

(c) See Explanatory Notes, paragraph 21.

(d) Agricultural establishments reporting one or more reasons are shown against each reason reported.

3.11**REASONS FOR NATIVE VEGETATION: by NHT2 Region (a)—2004–05 *continued***

REASONS FOR HAVING NATIVE VEGETATION (c) (d)

	Agricultural establishments reporting native vegetation no. (b)	Provides stock grazing %	Provides wildlife habitat %	Addresses or prevents land management problems %	Provides shelter and shade for stock and crops %	Aesthetic reasons %	Too expensive or difficult to clear %	Restrictions on vegetation removal %
Queensland								
Border Rivers	^ 834	^ 55.5	^ 53.0	^ 49.2	68.5	^ 43.0	^ 33.7	^ 39.1
Burdekin	^ 925	^ 52.5	64.2	^ 55.0	64.4	^ 32.0	^ 36.9	^ 49.2
Burnett Mary	3 679	^ 41.4	51.0	^ 45.9	63.0	^ 35.8	^ 22.9	^ 36.4
Cape York	* 121	^ 80.8	* 54.7	* 55.0	* 62.0	** 30.0	* 48.0	* 55.0
Cape York Northern Gulf	na	na	na	na	na	na	na	na
Condamine	2 176	75.7	^ 47.8	51.8	69.0	^ 32.2	^ 27.2	^ 37.4
Desert Channels	751	72.5	^ 50.3	^ 36.9	73.0	* 17.4	* 19.3	^ 49.5
Fitzroy	2 627	^ 44.2	^ 45.7	^ 40.8	69.5	^ 26.3	^ 29.5	^ 48.1
Mackay Whitsunday	^ 841	^ 32.4	^ 50.8	^ 50.1	^ 31.4	^ 30.9	^ 41.8	^ 42.2
Maranoa Balonne	1 300	51.8	52.8	^ 40.8	74.5	^ 38.6	^ 16.5	55.5
Northern Gulf	^ 327	^ 34.7	^ 42.2	* 32.6	* 29.9	* 25.5	^ 45.5	^ 40.7
South East (QLD)	2 940	^ 39.1	61.0	45.0	57.1	^ 42.6	^ 23.2	^ 25.6
South West (QLD)	^ 465	80.4	^ 58.0	^ 43.9	75.0	* 28.6	^ 37.4	72.3
Southern Gulf	^ 276	90.8	^ 60.8	^ 65.9	^ 60.9	* 25.5	* 14.6	* 25.5
Torres Strait	na	na	na	na	na	na	na	na
Wet Tropics	1 492	^ 12.6	51.0	47.5	^ 30.0	^ 35.7	^ 28.3	^ 29.8
Total(e)	18 755	47.7	52.5	46.0	60.8	33.9	27.0	39.7
South Australia								
Alinytjara Wilurara	na	na	na	na	na	na	na	na
Eyre Peninsula	1 214	^ 36.1	61.0	55.5	71.0	^ 31.7	^ 23.6	43.9
Kangaroo Island	^ 227	* 21.0	^ 58.3	* 38.8	^ 86.6	^ 52.9	** np	^ 69.8
Adelaide and Mount Lofty Ranges	1 033	^ 22.9	58.6	^ 48.0	52.9	62.2	^ 19.0	^ 36.7
Northern and Yorke	1 985	51.4	49.0	41.5	70.7	41.5	^ 16.7	^ 21.6
SA Arid Lands	^ 163	^ 75.4	^ 64.4	^ 64.5	^ 69.1	^ 48.5	** np	* 37.1
SA Murray Darling Basin	2 168	^ 25.9	51.0	40.3	60.2	38.4	^ 10.7	^ 26.0
South East (SA)	1 728	^ 18.7	62.5	^ 16.5	64.7	49.9	* 9.6	^ 34.4
Total(e)	8 518	32.3	55.6	39.3	65.1	43.9	14.8	31.9
Western Australia								
Avon	2 392	^ 23.7	65.4	74.3	74.1	46.3	^ 21.7	^ 24.8
Northern Agricultural Region	1 102	^ 36.1	53.6	61.3	70.6	45.1	^ 19.7	^ 35.8
Rangelands (WA)	553	71.3	^ 55.5	^ 56.4	^ 60.1	^ 33.8	* 10.0	^ 26.3
South Coast Region	1 688	^ 17.0	58.4	59.5	68.8	46.7	^ 19.7	^ 36.2
South West Region	2 954	^ 25.3	55.4	48.3	70.2	49.6	^ 24.3	28.8
Swan	^ 650	^ 23.1	^ 46.2	^ 39.8	^ 48.0	^ 50.3	* 19.3	^ 34.0
Total	9 338	27.2	57.6	58.4	68.8	46.8	21.1	30.2
Tasmania								
North (TAS)	878	^ 47.6	^ 39.7	^ 32.8	73.3	^ 41.2	^ 30.2	^ 15.0
North West (TAS)	912	^ 18.7	^ 34.7	^ 32.8	61.6	^ 32.9	^ 36.4	* 7.7
South (TAS)	779	^ 50.7	^ 42.5	^ 33.5	59.5	^ 42.4	^ 41.4	^ 16.6
Total	2 570	38.3	38.7	33.0	65.0	38.6	35.8	^ 12.9

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

na not available

np not available for publication but included in totals where applicable, unless otherwise indicated

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 19.

(c) See Explanatory Notes, paragraph 21.

(d) Agricultural establishments reporting one or more reasons are shown against each reason reported.

(e) See Explanatory Notes, paragraph 9.

3.11 REASONS FOR NATIVE VEGETATION: by NHT2 Region (a)—2004–05 *continued* . .

REASONS FOR HAVING NATIVE VEGETATION (c) (d)

	<i>Agricultural establishments reporting native vegetation no. (b)</i>	<i>Provides stock grazing %</i>	<i>Provides wildlife habitat %</i>	<i>Addresses or prevents land management problems %</i>	<i>Provides shelter and shade for stock and crops %</i>	<i>Aesthetic reasons %</i>	<i>Too expensive or difficult to clear %</i>	<i>Restrictions on vegetation removal %</i>
Northern Territory								
Northern Territory	287	^ 49.4	^ 55.0	^ 51.0	^ 38.5	*21.7	*13.2	*14.7
<i>Total</i>	287	^ 49.4	^ 55.0	^ 51.0	^ 38.5	*21.7	*13.2	*14.7
Australian Capital Territory								
ACT	68	^ 62.1	^ 61.6	^ 36.7	70.5	^ 41.5	^ 31.3	^ 51.1
<i>Total</i>	68	^ 62.1	^ 61.6	^ 36.7	70.5	^ 41.5	^ 31.3	^ 51.1
Australia (e)	81 815	40.4	54.4	45.2	68.3	40.9	22.1	27.8

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) See Explanatory Notes, paragraphs 8 and 9.

(b) See Explanatory Notes, paragraph 19.

(c) See Explanatory Notes, paragraph 21.

(d) Agricultural establishments reporting one or more reasons are shown against each reason reported.

(e) See Explanatory Notes, paragraph 9.

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents final results from the ABS Natural Resource Management Survey 2004-05 which was conducted from November 2005. This is the first of an ongoing biennial collection of natural resource management data.

SCOPE AND COVERAGE

2 The scope of the Natural Resource Management Survey 2004-05 was establishments undertaking agricultural activity with an Estimated Value of Agricultural Operations (EVAO) of \$5,000 or more.

3 A sample of approximately 20,000 establishments was included in the Natural Resource Management Survey 2004-05, which was a sub-sample of the 30,500 establishments included in the 2004-05 Agricultural Survey.

4 The sample was designed to ensure acceptable estimates at the National, State and Statistical Division level. The survey results in this publication have been weighted to cover the full reference population.

STATISTICAL UNIT

5 The unit for which statistics were reported in the survey was the establishment unit. For the Natural Resource Management Survey 2004-05, the concept of an establishment unit is the same as that used in the Agricultural Census and the Agricultural Survey. An agricultural establishment is the smallest accounting unit within a State or Territory controlling its productive activities and maintaining a specified range of detailed data enabling value-added to be calculated. In general, an establishment covers all operations at a physical location, but may consist of a group of locations provided they are within the same Statistical Local Area (SLA) or contiguous SLAs. The majority of agricultural establishments operate at one location only.

INDUSTRY CLASSIFICATION

6 Establishments in the Natural Resource Management Survey 2004-05 have been classified according to the agricultural subdivision of the 1993 edition of the *Australian and New Zealand Standard Industrial Classification (ANZSIC)* (cat. no. 1292.0) as follows:

- 01 Agriculture (Division A)
- 011 Horticulture and Fruit Growing
- 012 Grain, Sheep and Beef Cattle Farming
- 013 Dairy Cattle Farming
- 014 Poultry Farming
- 015 Other Livestock Farming
- 016 Other Crop Growing

REFERENCE PERIOD

7 Estimates in this publication relate to agricultural establishments within the survey scope (see paragraph 2), which operated in Australia at any time during the year ended 30 June 2005.

GEOGRAPHY

8 In a response to the demand for more tailored, regional-based output, estimates from the Natural Resource Management Survey 2004-05 have been produced at the Australian, State and Natural Heritage Trust (NHT2) level. The fifty-seven physical NHT2 regions across Australia were identified for the purposes of addressing natural resource management and sustainable agriculture priorities. Appendix 2 contains a map outlining the specific NHT2 regions used in this publication. The NHT2 regions are output as per

GEOGRAPHY *continued*

the boundary specifications of August 2005. A description of these regions can be found at the following NHT2 website <<http://nht.gov.au/>>.

9 Natural Resource Management estimates have not been produced for three of the 57 NHT2 regions - the jointly managed Cape York - Northern Gulf (Qld) region, Torres Strait (Qld) and Alinytjara Wilurara (SA). The Agricultural frame used to select establishments for inclusion in the Natural Resource Management Survey 2004-05 did not include any establishments in the Cape York - Northern Gulf or Torres Strait regions. While the frame did include a small number of establishments in the Alinytjara Wilurara region, none were selected in the final sample. Accordingly, data at the relevant state and Australian levels exclude activity in these three NHT2 regions. That is, totals and sub-totals exclude the NHT2 regions where estimates were not produced.

COMPARABILITY WITH
AGRICULTURAL SURVEY

10 The Natural Resource Management Survey 2004-05 and the Agricultural Survey 2004-05 both produce estimates relating to the number of agricultural establishments and the area of agricultural holdings. In order to maintain coherence between the publications, the Natural Resource Management Survey estimates have been aligned to the Agricultural Survey estimates at state level using generalised regression estimation. For further information, please contact the Director, Environment Surveys Business Statistics Centre, on (03) 6222 5850.

RELIABILITY OF DATA

11 Estimates in this publication are subject to sampling and non-sampling error.

SAMPLING ERROR

12 The estimates in this publication are based on information obtained from a sample drawn from the total farm population in scope of the collection and are subject to sampling variability. That is, estimates may differ from figures that would have been produced if all farms had been included in the survey. One measure of the likely difference is given by the standard error (SE), which indicates the extent to which an estimate might have varied by chance because only a sample of units was included. There are about two chances in three that a sample estimate will differ by less than one SE from the figure that would have been obtained if a complete enumeration had been conducted, and approximately nineteen chances in twenty that the difference will be less than two SEs.

13 In this publication, 'sampling' variability is measured by the relative standard error (RSE) which is obtained by expressing the SE as a percentage of the estimate to which it refers.

14 Where the RSE of an estimate included in this publication falls in the range of 10% to less than 25%, it has been annotated with the symbol '^' indicating that the estimate should be used with caution as it is subject to sampling variability too high for some purposes. Where the RSE of an estimate is 25% to 50%, it has been annotated with the symbol '*', indicating that the estimate should be used with caution as it is subject to sampling variability too high for most practical purposes. Where the RSE of an estimate exceeds 50%, it has been annotated with the symbol '**', indicating that the sampling variability causes the estimate to be considered too unreliable for general use. Separate indication of the RSEs of all estimates is available on request.

SAMPLING ERROR *continued*

15 The following table contains RSEs for a selection of the statistics presented in this publication:

RELATIVE STANDARD ERRORS OF SELECTED ESTIMATES, By State—2004–05

	NSW	Vic.	QLD	SA	WA	Tas.	NT	ACT	Aust.
	%	%	%	%	%	%	%	%	%
Area of Holding ('000 ha)	3.8	3.4	5.4	^ 11.1	8.9	5.7	8.2	^ 12.8	3.3
Area of native vegetation ('000 ha)	6.2	12.1	6.8	13.9	11.0	11.9	8.5	17.7	4.3
Area managed for weeds ('000 ha)	4.2	3.7	10.9	26.9	21.5	15.9	43.3	19.4	9.1
Any NRM activity (no.)	1.2	1.3	1.4	1.3	1.6	2.6	5.8	5.4	0.6
Total NRM expenditure (\$m)	3.1	3.4	4.1	7.6	4.2	8.2	16.6	14.7	1.8

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

NON-SAMPLING ERRORS

16 Errors other than that due to sampling may occur because of deficiencies in the list of units from which the sample was selected, non-response, and errors in reporting by providers. Inaccuracies of this kind are referred to as non-sampling errors and may occur in any collection whether it be a census or a sample. Every effort has been made to reduce non-sampling error to a minimum by careful design and testing of questionnaires, operating procedures and systems used to compile the statistics.

17 At the time of production of final estimates for the Natural Resource Management Survey 2004-05, a live response rate of 77.3% had been achieved.

DATA QUALITY

18 The Natural Resource Management Survey 2004-05 was perception-based, asking agricultural establishments to identify the extent and type of NRM issues present on their land and the activities they undertook to prevent or manage these issues. While the results may differ from scientific or satellite assessment, they do provide an important perspective into the NRM issues and activities occurring on Australian farms during 2004-05.

19 This publication includes final estimates relating to the number of agricultural establishments with native vegetation on their holding. The collection of this and similar data relies on the perceptions and attitudes of the person completing the form. There is evidence to suggest farmers' interpretation of the definition of native vegetation may vary across states and NHT2 regions.

20 The number and percentage of agricultural establishments reporting native vegetation activities and issues is drawn from those establishments reporting native vegetation.

21 The percentage of agricultural establishments reporting specific reasons for having native vegetation is drawn from those establishments reporting any reason (refer to Table 3.11).

22 The term 'any NRM activity' refers to agricultural establishments reporting one or more activities to prevent or manage NRM issues on their holding. The reporting of NRM activity does not necessarily mean the presence of NRM issues or that NRM issues that do exist are being fully addressed. Also, activities may have been undertaken on part or all of the holding.

23 The term 'any NRM issue' refers to agricultural establishments reporting one or more NRM issues on their holding. The reporting of NRM issues does not necessarily mean any management activity has been undertaken. The NRM issues identified may have affected part or all of the holding and may have been of varying severity.

24 Areas of agricultural land reported as being managed or affected are based on the perception of farmers and are not indicative of the intensity of the management activity or the severity of the issue.

DATA QUALITY *continued*

25 Final estimates in this publication were validated against a number of internal and external NRM data sources, including:

- ABS, Agricultural Survey 2004-05
- ABS, Water Survey 2002-03
- ABS, Land Management and Salinity Survey 2002
- NLWRA, Native Vegetation Information System (NVIS)
- ABARE, Natural Resource Management Survey 2004-05
- DEH, NRM regional expenditure 2004-05

RE-ISSUE OF PUBLICATION

26 This re-issue corrects errors in tables 2.4, 2.5, 2.6, 2.7 and 2.10 for the percentage of agricultural establishments reporting NRM activities. The error relates to the ratio of the number of agricultural establishments reporting a particular NRM activity divided by the number of agricultural establishments undertaking preventative and/or remedial NRM activities.

27 Estimates for NSW and Victoria at the state level (Tables 2.1 to 2.10), and for the NHT2 regions Lower Murray/Darling (NSW) and Mallee (Victoria) and corresponding state totals (Tables 3.1 to 3.11) have also changed marginally due to the re-coding of some agricultural establishments from Victoria to NSW.

RELATED PUBLICATIONS

28 A range of NRM and agricultural publications are produced by the ABS including:

- *Natural Resource Management on Australian Farms, Preliminary* (cat. no. 4624.0)
- *Water Use on Australian Farms* (cat. no. 4618.0)
- *Salinity on Australian Farms 2002* (cat. no. 4615.0)
- *Water Account, Australia* (cat. no. 4610.0)
- *Agricultural Commodities, Australia* (cat. no. 7121.0)
- *Land Management: Eurobodalla Shire NSW 2003-2004* (cat. no. 4651.0)
- *Land Management: Fitzroy and Livingstone Shires Queensland 2004-2005* (cat. no. 4651.0)

29 Current publications and other products released by the ABS are listed in the *Catalogue of Publications and Products* (cat. no. 1101.0). The Catalogue is available from any ABS office or the ABS web site <<http://www.abs.gov.au>>. The ABS also issues a daily Release Advice on the web site which details products to be released in the week ahead.

ABS DATA AVAILABLE ON REQUEST

30 As well as the statistics included in this and related publications, the ABS may have other relevant data available on request. Inquiries should be made to either the National Information and Referral Service on 1300 135 070.

ACKNOWLEDGMENT

31 ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence, as required by the *Census and Statistics Act 1905*.

To assist in interpreting the data included in this publication, the following key terms and data quality issues should be taken into account:

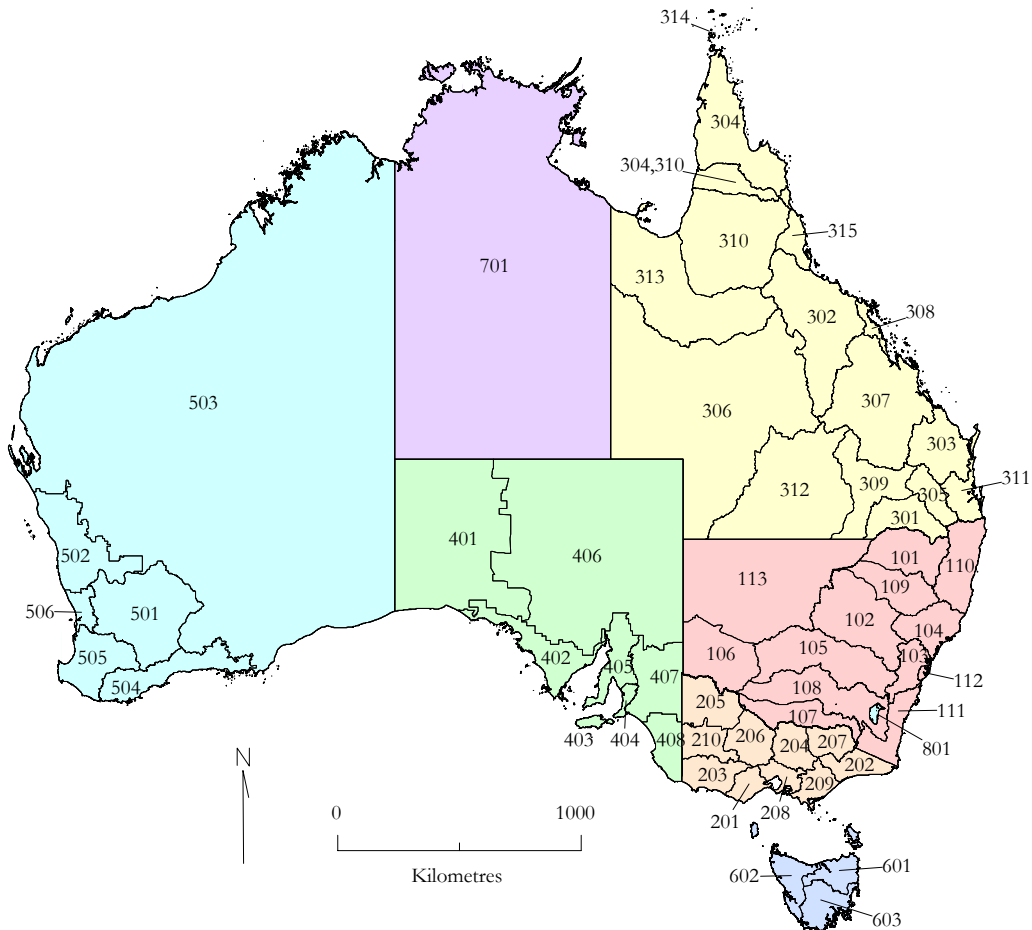
NRM The term natural resources refers to a broad spectrum of ‘environmental assets’. These include air, water, land, plants, animals and micro-organisms. However, environmental assets are not isolated but linked together to form natural systems of varying scales such as rivers; oceans; forests; and deserts.

The goal of natural resource management is to protect, maintain and improve environmental assets and natural systems whilst sustaining industries and the viability of communities. This requires action to be undertaken by local and regional communities, individuals and landholders with the aim of restoring and protecting Australia’s natural resources.

NRM activities Any activity undertaken on the holding to prevent or manage native vegetation, weed, pest, land or soil and/or water issues. The reporting of NRM activity does not necessarily mean the presence of NRM issues or that NRM issues that do exist are being fully addressed. Activities may have been undertaken on part or all of the holding.

NRM issues Issues relating to or impacting on the environment's natural and physical resources or the management and long term sustainability of those resources. Some relevant examples for this survey include the decreased value of agriculture production due to weed infestation, crop damage due to the presence of pests, blocked waterways, soil acidity, salinity, erosion, habitat fragmentation, and thickening or insufficient native vegetation. The reporting of NRM issues does not necessarily mean any management activity has been undertaken. The NRM issues identified may have affected part or all of the holding and may have been of varying severity.

A2.1 NRM REGIONS



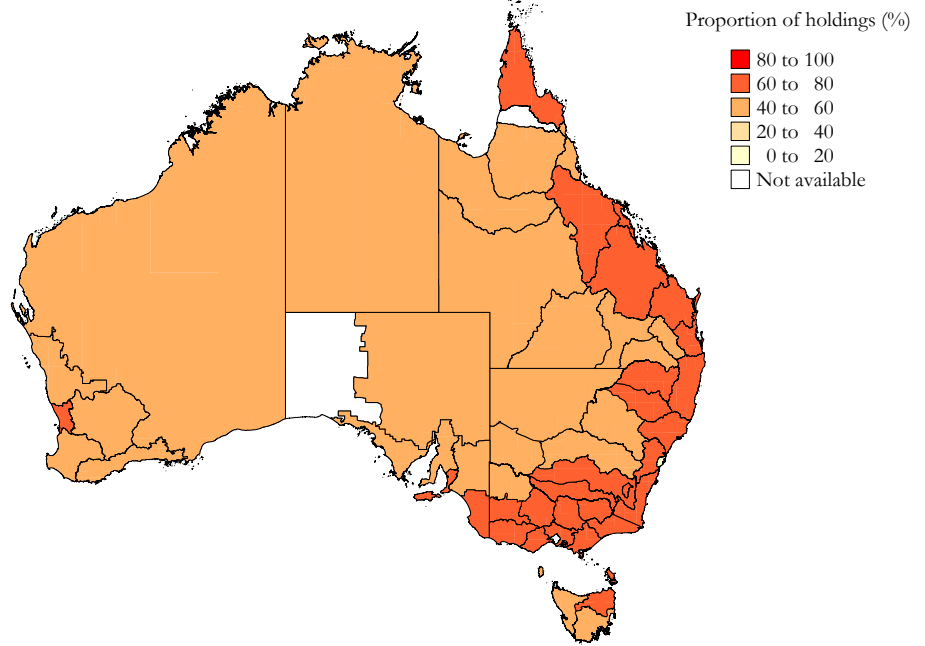
NHT2 Region *

- | | | | |
|---|---|--|--|
| <ul style="list-style-type: none"> NSW 101: Border Rivers/Gwydir 102: Central West 103: Hawkesbury/Nepean 104: Hunter/Central Rivers 105: Lachlan 106: Lower Murray/Darling 107: Murray 108: Murrumbidgee 109: Namoi 110: Northern Rivers 111: Southern Rivers 112: Sydney Metro 113: Western VIC 201: Corangamite 202: East Gippsland | <ul style="list-style-type: none"> 203: Glenelg Hopkins 204: Goulburn Broken 205: Mallee 206: North Central 207: North East (VIC) 208: Port Phillip and Westernport 209: West Gippsland 210: Wimmera QLD 301: Border Rivers 302: Burdekin 303: Burnett Mary 304: Cape York 304,310: Cape York - Northern Gulf 305: Condamine 306: Desert Channels 307: Fitzroy | <ul style="list-style-type: none"> 308: Mackay Whitsunday 309: Maranoa Balonne 310: Northern Gulf 311: South East (QLD) 312: South West (QLD) 313: Southern Gulf 314: Torres Strait 315: Wet Tropics SA 401: Alinytjara Wilurara 402: Eyre Peninsula 403: Kangaroo Island 404: Adelaide and Mount Lofty Ranges 405: Northern and Yorke 406: SA Arid Lands 407: SA Murray Darling Basin 408: South East (SA) | <ul style="list-style-type: none"> WA 501: Avon 502: Northern Agricultural Region 503: Rangelands (WA) 504: South Coast Region 505: South West Region 506: Swan TAS 601: North (TAS) 602: North West (TAS) 603: South (TAS) NT 701: Northern Territory ACT 801: ACT |
|---|---|--|--|

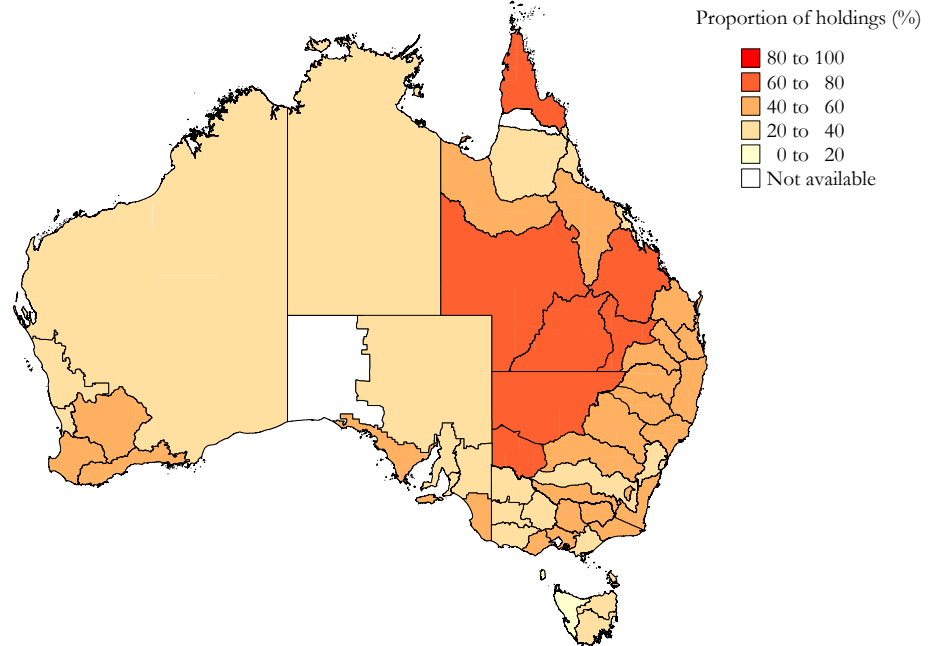
*Numbers used are NHT2 codes.
Source: Department of the Environment and Heritage - 2005.

MAPS - NRM ACTIVITIES AND ISSUES BY NHT2 REGION

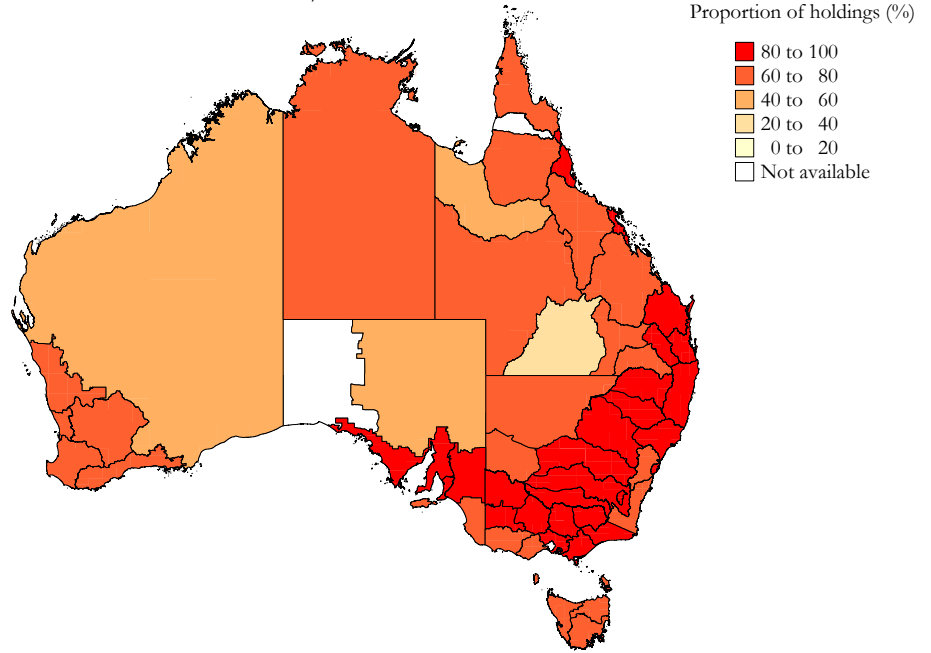
A3.1 NATIVE VEGETATION ACTIVITIES, 2004-05



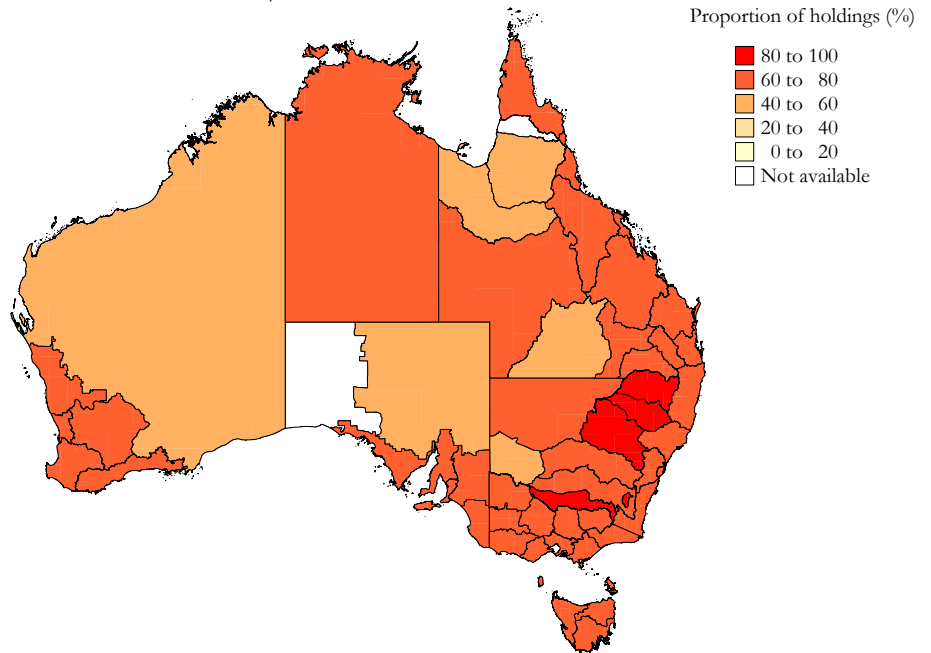
A3.2 NATIVE VEGETATION ISSUES, 2004-05



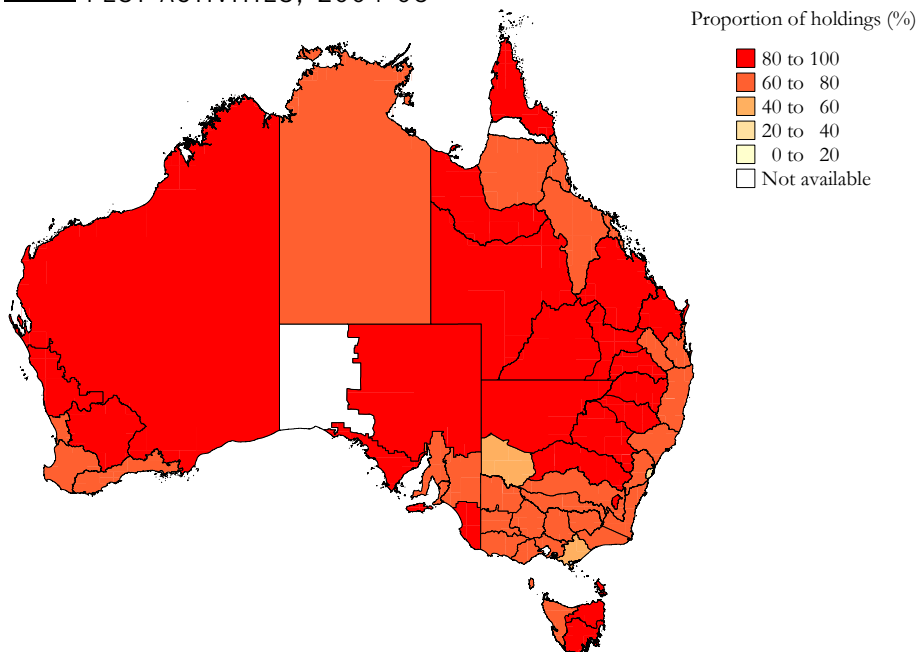
A3.3 WEED ACTIVITIES, 2004-05



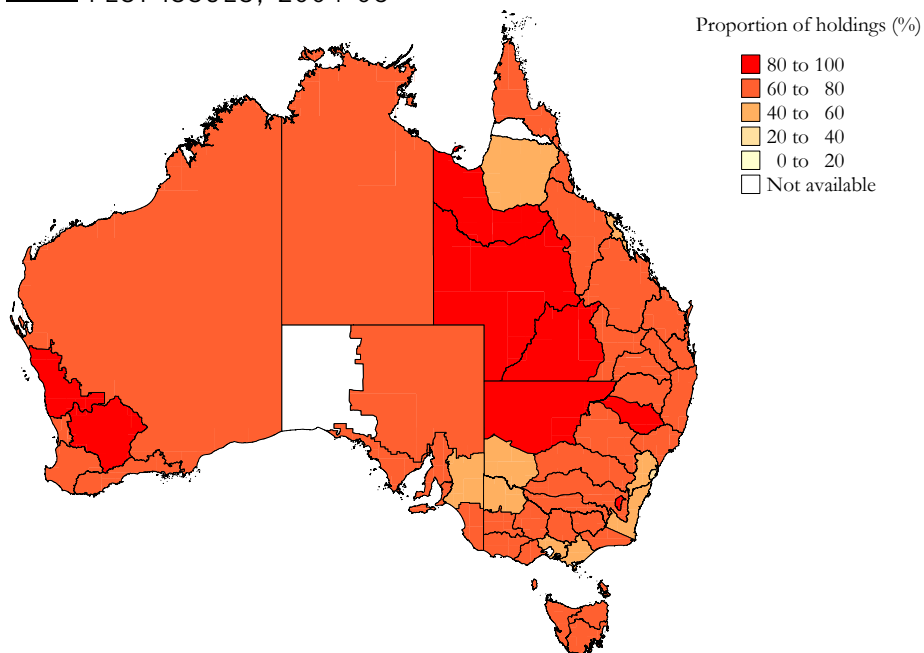
A3.4 WEED ISSUES, 2004-05



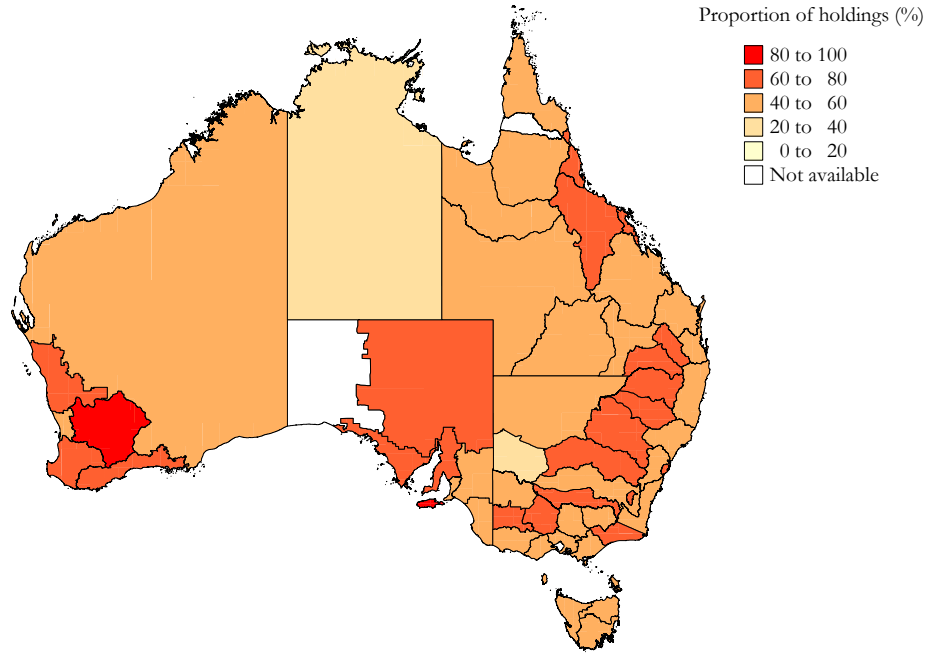
A3.5 PEST ACTIVITIES, 2004-05



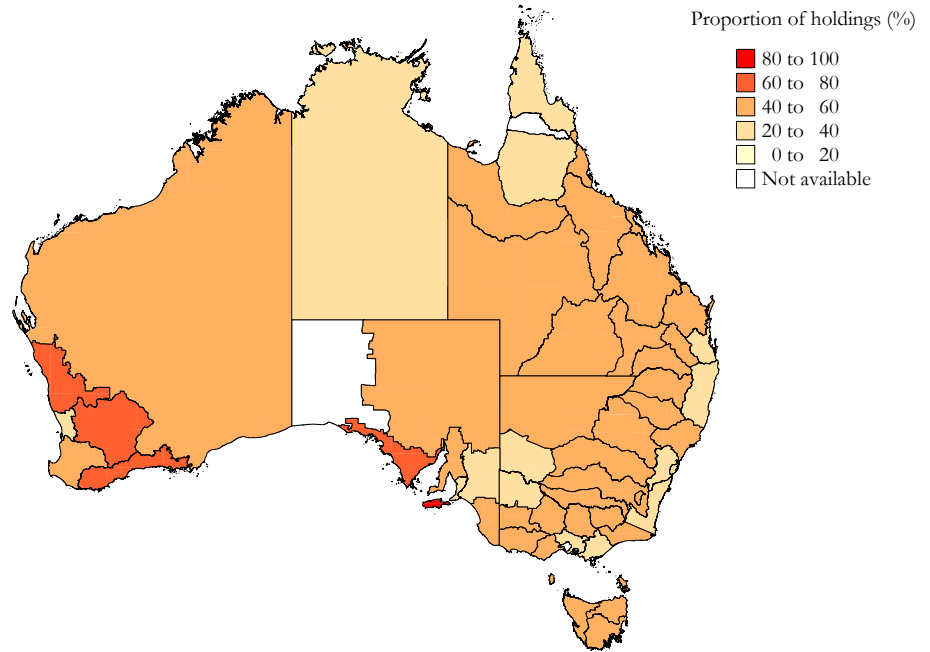
A3.6 PEST ISSUES, 2004-05



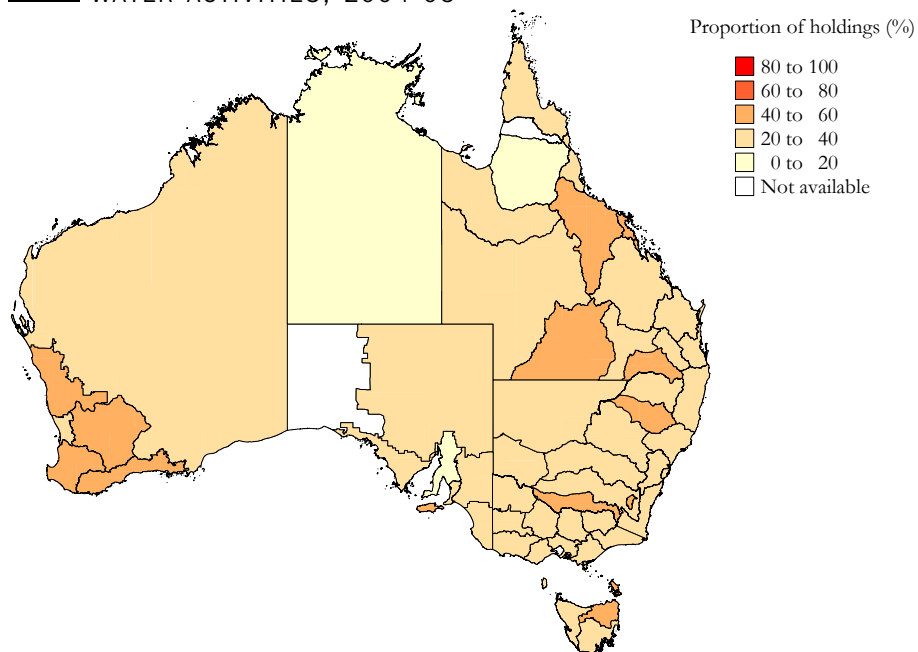
A3.7 LAND AND SOIL ACTIVITIES, 2004-05



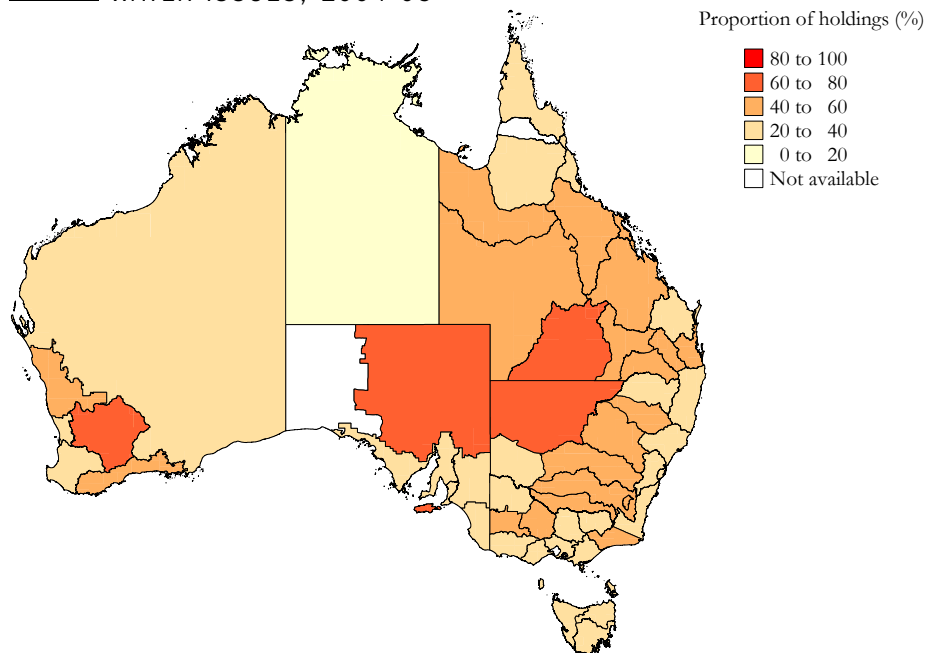
A3.8 LAND AND SOIL ISSUES, 2004-05



A3.9 WATER ACTIVITIES, 2004-05



A3.10 WATER ISSUES, 2004-05



GLOSSARY

Agricultural establishment	An establishment which is engaged mainly in agricultural activities.
Australian and New Zealand Standard Industrial Classification (ANZSIC)	A classification guide produced by the Australian Bureau of Statistics and the New Zealand Department of Statistics for use in the collection and publication of statistics in the two countries.
Area affected	The area of agricultural land currently affected by natural resource management issues.
Area managed	The area of agricultural land on which management action has been undertaken to prevent or manage natural resource management issues.
Barriers to Natural Resource Management	Obstacles which impact on the landholder's ability to improve their natural resource management practices. Typical barriers include; lack of financial resources, lack of time, lack of incentives, age and/or ill health, and insufficient or inadequate information.
Biological control	The practice or process by which an undesirable organism is controlled by means of another (beneficial) organism.
Dryland Salinity	Occurs when groundwater (and the salts it contains) rises to the soil surface. It is largely the consequence of the clearing of deep-rooted native vegetation for rain-fed crop and pasture production.
Earthworks	Operations involved in moving, loosening, depositing, shaping, compacting and stabilising soil and rock. It includes operations associated with levees/banks, shallow open drains, deep open drains and subsurface drains.
Erosion	The wearing away of land or soil by the action of wind, water, or ice.
Estimated value of agricultural operations (EVAO)	An estimation of the value of agricultural activity undertaken by an agricultural establishment. Three-year average weighted prices are applied to livestock turnoff and livestock numbers on the farm, and to area and production data for crops. The resultant aggregation of these commodity values is the EVAO. It is not an indicator of the value of receipts of individual farms but rather an indicator of the extent of agricultural activity.
Excess nutrient load	The mass of nutrients carried by water into surrounding waterways over a period of time. Because of the use of fertilisers and manure, water that passes through agricultural soils often carries a high 'nutrient load' into local creeks.
Farmers	Operators of agricultural establishments.
Farm management plan	Documented records addressing the present farm situation and outlining strategies for future management and development decisions.
Habitat fragmentation	The process by which isolated patches of habitat are created through land clearing and deforestation.
Herbicide	Chemical substances or living organisms (called bioherbicides) used to kill or control vegetation such as brush, weeds, and competing or undesirable trees.
Holding	Land located within one shire used for the production of agricultural and livestock produce. Each holding usually corresponds to an individual farm business, and can consist of a number of separate parcels of land, providing they are all in the one shire.
Irrigation	The replacement or supplementation of rainfall with water from another source in order to grow crops, pastures etc.

Irrigation salinity	A form of salinity resulting from the increasing build-up of salts in irrigated soils. It results from raised water table levels that bring soil salts to the upper levels of the soil profile, as well as the repeated use of saline river water for irrigation.
Land and soil activities	Activities undertaken on the holding to prevent or manage land and soil issues, including crop and/or pasture type or management, earthworks, drains or water pumping, changes to cultivation, irrigation and fertilisation methods, fencing to protect sensitive areas, and soil testing. Land and soil activities do not include activities undertaken to prevent or manage native vegetation, weed or pest-related issues.
Land and soil issues	Issues impacting on the condition of the land and soil, including soil acidity, salinity, soil compaction, surface waterlogging and erosion.
Laser levelling	The use of a laser guided land plane to re-level the paddock surface, filling low spots and removing high spots to give a uniform paddock surface and to create a suitable slope for improving watering efficiency.
Native vegetation	Any indigenous plant community, either naturally occurring or regenerated with human assistance. Native vegetation covers a range of vegetation types, including forests, woodlands, scrub, native grasslands, wetlands, and remnant and regrowth. It excludes commercial plantations.
Native vegetation activities	Activities undertaken on the holding to manage native vegetation, including fencing off from stock, planting and/or seeding, clearing, thinning of regrowth, allowing regrowth, and fire management.
Native vegetation issues	Issues impacting on the presence and quality of native vegetation on the holding, including habitat fragmentation, and excessive, thickening or insufficient native vegetation.
Natural Heritage Trust 2 (NHT2) regions	Fifty-seven regions identified across Australia for the purposes of addressing natural resource management and sustainable agriculture priorities. The boundaries for each region have been established by agreement between the Australian Government, and State and Territory Governments. A map outlining the specific NHT2 regions used in this publication is provided in Appendix 2. Data at the NHT2 region level is as per the boundary specifications of August 2005.
Natural Resource Management (NRM)	Management of our natural resources - land, soil, native vegetation, biodiversity and water (both fresh and sea).
Natural Resource Management (NRM) activities	Activities undertaken on the holding to prevent or manage native vegetation, weed, pest, land and soil and/or water issues.
Natural Resource Management (NRM) effort	The time in person days spent preventing or managing natural resource management issues on the land. One person day equals 8 hours.
Natural Resource Management (NRM) expenditure	The financial cost to landholders of preventing or managing natural resource management issues on their land. It includes material costs, purchases of minor equipment and payments to contractor or employees (including owners paid as employee). It excludes voluntary or unpaid work, and capital equipment and depreciation costs.
Natural Resource Management (NRM) issues	Any issue relating to or impacting on the environment's natural and physical resources or the management and long term sustainability of those resources.
Pest	A noxious, destructive or troublesome animal or insect.
Pest activities	Activities undertaken on the holding to prevent or manage pest-related issues, including the use of pesticides, biological control, baiting or trapping, shooting, fencing and/or netting, grazing management and crutching.
Pest issues	Issues associated with the presence of pests on the holding, including damage to native vegetation, decreased crop production or damage, and killed or harmed livestock.

Pesticide	Any substance or mixture of substances intended for killing, controlling, or managing insects, rodents, fungi, weeds, and other forms of plant or animal life that are considered to be pests. Herbicides, insecticides, fungicides and rodenticides are all pesticides.
Preventative activities	Activities undertaken to deter or prevent natural resource management issues arising.
Remedial activities	Activities undertaken to rectify or manage existing natural resource management issues.
Riparian zone	The vegetated corridor along streams and rivers.
Salinity	Soil salinity is the presence of concentrations of salt in the soil profile and can be a form of land degradation.
Sodicity	The build up of sodium in the soil resulting in poor water infiltration, surface crusting, erosion and water-logging.
Soil acidity	An important soil chemical characteristic that influences plant growth, soil microbial activity, and the physical structure of the soil. Land affected by soil acidity is land with a decline in pH to below pH 5.
Soil compaction	Reduction of the total pore space in soil, resulting from applied loads, vibration or pressure. Compacted soil retains less water and resists root penetration.
Surface waterlogging	The lowering of land productivity through the rise in ground-water close to the soil surface. Soil is waterlogged when it is saturated with water, causing air to be displaced from soil pores to the point that there is not enough oxygen for full root activity.
Water activities	Activities undertaken on the holding to prevent or manage water-related issues, including water testing, removal of stock from waterways and water bodies, fencing to protect riparian zones and stream banks, and monitoring of the ground-water table.
Water issues	Issues impacting on water quality and availability, including water clarity, excess nutrient load, and the occurrence of a toxicity event.
Weeds	A plant that interferes with the management objectives at a particular location. It is a plant growing where it is not wanted. Weeds may damage crops or poison livestock when growing in pasture.
Weed activities	Activities undertaken on the holding to prevent or manage weed-related issues, including application of herbicides, use of biological control agents, slashing, cutting or mowing, cultivation, pulling, manual removal or chipping and burning.
Weed issues	Issues associated with the presence of weeds on the holding, including decreased value of production, blocked water courses, increased fire risk, poisoned stock, and decreased value of the holding.

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