Australian Bureau of Statistics

2004–05

4624.0

NATURAL RESOURCE MANAGEMENT ON AUSTRALIAN FARMS

AUSTRALIA
PRELIMINARY

EMBARGO: 11.30AM (CANBERRA TIME) THURS 6 JUL 2006

CONTENTS

INQUIRIES

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070 or Erica McCoull on Hobart (03) 6222 5977.

NOTES

ABBREVIATIONS

'000	thousand
ACT	Australian Capital Territory
ANZSIC	Australian and New Zealand Standard Industrial Classification
Aust.	Australia
EVAO	Estimated Value of Agricultural Operations
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

Dennis Trewin
Australian Statistician

INTRODUCTION

BACKGROUND

This publication presents preliminary estimates of Natural Resource Management (NRM) activities and issues on Australian farms in 2004-05. The estimates have been compiled from the Australian Bureau of Statistics' (ABS) first dedicated Natural Resource Management survey.

This new survey, to be conducted every two years, was developed in response to a demand for a more extensive range of NRM statistics. While the ABS has previously collected data on NRM topics (e.g. water, salinity), the NRM survey will allow for the ongoing collection of a range of NRM topics.

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. The results provide an important perspective into NRM issues and activities occurring on Australian farms during 2004-05 and may differ from scientific or satellite assessment.

An important objective of the Natural Resource Management Survey 2004-05 was to collect and publish regional data. Estimates from the 2004-05 survey are being released at the Natural Heritage Trust (NHT2) region level. Appendix 2 contains a map of the regions used in this publication.

Final results from the survey will be made available in September this year. The final publication will provide more detailed NRM estimates, including areas affected and managed within the five priority NRM topics, and a summary of the labour and financial costs associated with the activities undertaken.

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 and Energy Business Statistics Centre, GPO Box 66, Hobart, TAS 7001, or phone (03) 6222 5804.

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 paragraph 20 of the Explanatory Notes). To assist in interpreting the data included in this publication, the following key terms and data quality issues should be taken into account.

Key terms

NRM

Management of our natural resources - land, soil, native vegetation, biodiversity and water (both fresh and sea).

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

Key terms continued

NRM ISSUES *continued*

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.

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.

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.

SUMMARY OF FINDINGS

OVERVIEW

Natural Resource Management (NRM) was an important activity on the majority of Australian farms in 2004-05.

NRM issues were present on 86% of agricultural establishments in 2004-05, and 91% of agricultural establishments undertook some form of activity to prevent or manage NRM issues. These results suggest some farmers preventatively manage their holdings in order to avoid NRM issues affecting their land.

At the national level, weeds were the most commonly reported NRM issue. Weed-related issues affected 73% of Australian agricultural establishments during 2004-05. Similarly, weed-related activities were the most commonly reported NRM activity at the national level, with 80% of agricultural establishments undertaking activities to either prevent or manage weeds.

Although weed-related issues were the most commonly reported NRM issue at the national level, pest-related issues rated higher in four of the states and territories (Western Australia, Tasmania, Northern Territory and the Australian Capital Territory).

At the regional level, weeds and pests were consistently the most commonly reported NRM issue, although the extent of reporting and the level of management activity undertaken by agricultural establishments varied considerably across the regions.

Native vegetation management also formed an important part of NRM on Australian farms in 2004-05. Approximately 63% of agricultural establishments which reported the presence of native vegetation undertook some form of native vegetation management activities during the year.

1 AGRICULTURAL ESTABLISHMENTS REPORTING NATURAL RESOURCE MANAGEMENT ISSUES, By NHT2 Region(a)—2004–05

				AGRICULTURAL ESTABLISHMENTS REPORTING SPECIFIC NRM ISSUES(d)				
	Agricultural establishments no.	*Agricultural establishments reporting native vegetation* no.(b)	*Agricultural establishments reporting any NRM issue* no.(c)	*Native vegetation* no.(e)	*Weeds* no.	*Pests* no.	*Land and soil* no.	*Water* no.
New South Wales								
Border Rivers/Gwydir	2 591	2 024	2 353	^1 258	2 115	2 053	^1 273	^1 012
Central West	5 453	3 654	4 808	1 613	4 391	4 297	3 009	2 643
Hawkesbury/Nepean	2 276	^1 265	1 701	^414	^1 402	^1 212	^701	^853
Hunter/Central Rivers	3 402	2 250	3 001	^1 065	2 690	2 330	^1 442	^1 055
Lachlan	5 422	3 403	4 594	^1 403	4 138	3 922	2 818	2 571
Lower Murray/Darling	709	^271	^529	*190	^418	^386	^171	^229
Murray	3 070	1 917	2 748	^883	2 492	2 309	1 669	1 252
Murrumbidgee	5 497	2 668	4 787	^1 038	4 157	3 768	2 450	2 581
Namoi	2 838	2 117	2 711	^1 267	2 537	2 333	^1 484	^1 548
Northern Rivers	6 349	4 045	5 562	^1 929	4 808	4 111	2 077	^1 960
Southern Rivers	1 455	^834	^1 155	^354	^1 109	^847	^585	^442
Sydney Metro(f)	*182	*41	*135	**20	*114	*82	*72	**39
Western	839	^743	767	^451	^564	686	^350	^523
Total	*40 084*	*25 231*	*34 851*	*11 883*	*30 937*	*28 337*	*18 101*	*16 707*
Victoria								
Corangamite	3 180	1 563	2 604	^665	2 078	2 149	1 460	^1 036
East Gippsland	^823	^575	^668	^250	^592	^575	^454	^367
Glenelg Hopkins	3 850	1 723	3 274	^638	2 623	2 745	1 625	^1 218
Goulburn Broken	5 093	2 922	4 300	^1 307	3 905	3 388	2 367	1 727
Mallee	2 835	928	2 117	^286	1 819	1 589	1 101	^580
North Central	4 460	2 390	3 976	940	3 437	3 256	2 327	1 920
North East	2 201	1 308	1 854	^636	1 717	1 549	1 094	^595
Port Phillip and Westernport	3 720	1 751	2 884	^807	2 543	2 015	^1 237	^756
West Gippsland	3 929	^1 996	3 071	^690	2 588	2 010	^1 527	^942
Wimmera	2 271	1 357	2 043	^529	1 665	1 676	1 204	1 032
Total	*32 362*	*16 514*	*26 791*	*6 748*	*22 969*	*20 952*	*14 395*	*10 173*
Queensland								
Border Rivers	937	^789	^846	^412	^690	^700	^531	^454
Burdekin	1 635	^917	1 403	^511	1 137	1 191	^721	^756
Burnett Mary	5 253	3 576	4 668	2 112	4 007	3 490	2 052	2 050
Cape York	*127	*102	*101	*79	*96	*93	**29	*31
Cape York-Northern Gulf	na	na	na	na	na	na	na	na
Condamine	3 419	2 128	2 994	^1 022	2 528	2 246	1 763	1 767
Desert Channels	782	693	694	^495	^530	637	^362	^456
Fitzroy	3 253	2 675	2 874	1 828	2 301	2 505	^1 484	^1 596
Mackay Whitsunday	1 437	^843	1 265	^309	1 066	^835	^718	^638
Maranoa Balonne	1 546	1 412	1 411	916	^997	1 211	^662	^670
Northern Gulf	^529	^301	^385	*86	^297	^321	*157	*119
South East	4 547	2 905	3 955	^1 246	3 225	3 175	1 768	2 312
South West	^439	^405	^412	^327	^208	^360	^211	^274
Southern Gulf	388	^293	331	^149	^227	^315	^176	^213
Torres Strait	na	na	na	na	na	na	na	na
Wet Tropics	2 835	1 487	2 437	^443	2 101	1 976	1 304	^788
Total(g)	*27 126*	*18 526*	*23 776*	*9 936*	*19 410*	*19 055*	*11 936*	*12 123*

^ 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 20.

(c) 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.

(d) Establishments reporting more than one NRM issue are shown against each specific NRM issue.

(e) The number of agricultural establishments reporting native vegetation issues is drawn from those establishments reporting native vegetation.

(f) See Explanatory Notes, paragraph 10.

(g) Totals and sub-totals exclude the NHT2 regions where estimates were not produced. See Explanatory Notes, paragraph 9.

1 AGRICULTURAL ESTABLISHMENTS REPORTING NATURAL RESOURCE MANAGEMENT ISSUES, By NHT2 Region(a)—2004–05 *continued*

	Agricultural establishments no.	Agricultural establishments reporting native vegetation no.(b)	Agricultural establishments reporting any NRM issue no.(c)	AGRICULTURAL ESTABLISHMENTS REPORTING SPECIFIC NRM ISSUES(d)				
				Native vegetation no.(e)	Weeds no.	Pests no.	Land and soil no.	Water no.
South Australia								
Adelaide and Mount Lofty Ranges	2 313	1 020	1 909	^ 337	1 677	1 457	^ 879	^ 540
Alinytjara Wilurara	na	na	na	na	na	na	na	na
Eyre Peninsula	1 486	1 196	1 335	^ 491	1 122	1 110	912	^ 488
Kangaroo Island	^ 236	^ 229	^ 229	*135	*163	^ 178	^ 202	*146
Northern and Yorke	2 984	1 980	2 641	^ 655	2 197	1 998	1 379	^ 706
SA Arid Lands	^ 148	^ 132	^ 123	*31	*61	^ 117	*83	^ 91
SA Murray Darling Basin	4 104	2 175	3 416	^ 761	2 877	2 410	1 443	1 005
South East	2 828	1 712	2 417	860	2 039	2 066	1 369	734
Total(f)	*14 099*	*8 445*	*12 071*	*3 270*	*10 136*	*9 337*	*6 267*	*3 709*
Western Australia								
Avon	2 767	2 324	2 556	965	2 134	2 234	2 117	1 660
Northern Agricultural Region	1 249	1 119	1 152	^ 428	896	1 030	931	^ 581
Rangelands	692	463	570	^ 93	^ 296	520	^ 284	^ 229
South Coast Region	1 854	1 652	1 643	^ 732	1 209	1 327	1 225	792
South West Region	3 984	2 909	3 431	1 171	2 642	2 771	2 203	1 533
Swan	1 371	^ 653	1 132	^ 224	919	838	^ 447	^ 370
Total	*11 917*	*9 120*	*10 484*	*3 613*	*8 095*	*8 720*	*7 208*	*5 166*
Tasmania								
North	1 403	823	1 245	^ 312	1 066	1 104	723	^ 425
North West	1 503	895	1 163	^ 164	1 004	978	683	^ 406
South	958	758	803	^ 232	653	708	^ 438	^ 247
Total	*3 864*	*2 476*	*3 212*	*^ 708*	*2 723*	*2 790*	*1 844*	*1 078*
Northern Territory								
Northern Territory	380	297	345	^ 101	^ 242	280	^ 156	^ 88
Total	*380*	*297*	*345*	*^ 101*	*^ 242*	*280*	*^ 156*	*^ 88*
Australian Capital Territory								
ACT	87	65	83	^ 34	71	73	^ 40	^ 48
Total	*87*	*65*	*83*	*^ 34*	*71*	*73*	*^ 40*	*^ 48*
Australia(f)	**129 919**	**80 674**	**111 613**	**36 293**	**94 582**	**89 542**	**59 947**	**49 091**

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(d) Establishments reporting more than one NRM issue are shown against each specific NRM issue.

(e) The number of agricultural establishments reporting native vegetation issues is drawn from those establishments reporting native vegetation.

(f) Totals and sub-totals exclude the NHT2 regions where estimates were not produced. See Explanatory Notes, paragraph 9.

2 AGRICULTURAL ESTABLISHMENTS REPORTING NATURAL RESOURCE MANAGEMENT ACTIVITIES, By NHT2 Region(a)—2004–05

				AGRICULTURAL ESTABLISHMENTS REPORTING SPECIFIC NRM ACTIVITIES(d)				
	Agricultural establishments no.	*Agricultural establishments reporting native vegetation no.*(b)	*Agricultural establishments reporting any NRM activity no.*(c)	*Native vegetation no.*(e)	*Weeds no.*	*Pests no.*	*Land and soil no.*	*Water no.*
New South Wales								
Border Rivers/Gwydir	2 591	2 024	2 394	^1 467	2 176	2 234	1 672	^887
Central West	5 453	3 654	5 018	2 134	4 636	4 678	3 594	1 945
Hawkesbury/Nepean	2 276	^1 265	1 924	^916	1 678	^1 409	^1 027	^570
Hunter/Central Rivers	3 402	2 250	3 075	^1 548	2 901	2 448	1 881	^1 098
Lachlan	5 422	3 403	5 029	1 875	4 413	4 440	3 569	1 861
Lower Murray/Darling	709	^271	^610	*158	^494	^340	^247	^236
Murray	3 070	1 917	2 828	1 337	2 654	2 473	2 165	1 343
Murrumbidgee	5 497	2 668	4 908	1 674	4 455	4 236	3 172	1 847
Namoi	2 838	2 117	2 762	^1 365	2 657	2 514	1 961	^1 248
Northern Rivers	6 349	4 045	5 976	2 761	5 430	4 836	3 162	^1 554
Southern Rivers	1 455	^834	^1 246	^649	^1 133	^1 055	^826	^426
Sydney Metro(f)	*182	*41	*147	**26	*147	*80	*109	**28
Western	839	^743	757	^380	^505	694	^441	^352
Total	*40 084*	*25 231*	*36 674*	*16 289*	*33 279*	*31 438*	*23 825*	*13 395*
Victoria								
Corangamite	3 180	1 563	2 807	^1 110	2 433	2 345	1 659	^944
East Gippsland	^823	^575	^752	^461	^678	^608	^524	^299
Glenelg Hopkins	3 850	1 723	3 355	^1 127	2 813	2 919	2 032	^1 174
Goulburn Broken	5 093	2 922	4 611	2 192	4 294	3 758	3 009	1 858
Mallee	2 835	928	2 639	570	2 378	1 911	1 413	^567
North Central	4 460	2 390	4 159	1 660	3 803	3 468	2 712	1 597
North East	2 201	1 308	2 005	^899	1 909	1 634	1 200	^703
Port Phillip and Westernport	3 720	1 751	3 416	^1 321	3 007	2 346	1 791	^982
West Gippsland	3 929	^1 996	3 478	^1 576	3 270	2 227	^1 863	^1 009
Wimmera	2 271	1 357	2 128	856	1 826	1 800	1 484	^670
Total	*32 362*	*16 514*	*29 349*	*11 771*	*26 410*	*23 018*	*17 687*	*9 803*
Queensland								
Border Rivers	937	^789	^851	^412	^693	^782	^611	^355
Burdekin	1 635	^917	1 411	^584	1 245	1 177	^980	^676
Burnett Mary	5 253	3 576	4 797	2 484	4 210	4 285	2 585	^1 658
Cape York	*127	*102	*126	*87	*96	*109	*52	**43
Cape York-Northern Gulf	na	na	na	na	na	na	na	na
Condamine	3 419	2 128	3 077	^1 316	2 759	2 429	2 101	^1 185
Desert Channels	782	693	746	^402	^536	720	^367	^313
Fitzroy	3 253	2 675	2 944	1 757	2 473	2 632	1 806	^1 011
Mackay Whitsunday	1 437	^843	1 312	^567	1 189	^864	^915	^572
Maranoa Balonne	1 546	1 412	1 458	^723	^1 013	1 365	983	^499
Northern Gulf	^529	^301	^422	*148	^353	^342	^230	*91
South East	4 547	2 905	4 167	1 810	3 758	3 497	2 231	^1 278
South West	^439	^405	^426	^195	*154	^414	^200	^213
Southern Gulf	388	^293	332	^198	^250	^318	^172	^153
Torres Strait	na	na	na	na	na	na	na	na
Wet Tropics	2 835	1 487	2 619	^885	2 331	2 016	1 878	1 113
Total(g)	*27 126*	*18 526*	*24 688*	*11 567*	*21 062*	*20 952*	*15 110*	*9 160*

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

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(b) See Explanatory Notes, paragraph 20.

(c) 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. Activities may have been undertaken on part or all of the holding.

(d) Establishments reporting more than one NRM activity are shown against each specific NRM activity.

(e) The number of agricultural establishments reporting native vegetation activities is drawn from those establishments reporting native vegetation.

(f) See Explanatory Notes, paragraph 10.

(g) Totals and sub-totals exclude the NHT2 regions where estimates were not produced. See Explanatory Notes, paragraph 9.

2 AGRICULTURAL ESTABLISHMENTS REPORTING NATURAL RESOURCE MANAGEMENT ACTIVITIES, By NHT2 Region(a)—2004–05 *continued*

				AGRICULTURAL ESTABLISHMENTS REPORTING SPECIFIC NRM ACTIVITIES(d)				
	Agricultural establishments no.	*Agricultural establishments reporting native vegetation no.*(b)	*Agricultural establishments reporting any NRM activity no.*(c)	*Native vegetation no.*(e)	*Weeds no.*	*Pests no.*	*Land and soil no.*	*Water no.*
South Australia								
Adelaide and Mount Lofty Ranges	2 313	1 020	2 116	^ 634	1 955	1 482	1 196	^ 730
Alinytjara Wilurara	na	na	na	na	na	na	na	na
Eyre Peninsula	1 486	1 196	1 368	585	1 193	1 212	1 071	^ 323
Kangaroo Island	^ 236	^ 229	^ 229	*173	*162	^ 196	^ 223	*123
Northern and Yorke	2 984	1 980	2 825	1 179	2 570	2 240	1 986	^ 584
SA Arid Lands	^ 148	^ 132	^ 128	*69	*72	^ 122	^ 95	*34
SA Murray Darling Basin	4 104	2 175	3 792	1 113	3 361	2 658	2 090	1 190
South East	2 828	1 712	2 600	1 116	2 164	2 320	1 548	^ 723
Total(f)	*14 099*	*8 445*	*13 058*	*4 868*	*11 476*	*10 229*	*8 208*	*3 708*
Western Australia								
Avon	2 767	2 324	2 622	1 182	2 193	2 299	2 228	1 260
Northern Agricultural Region	1 249	1 119	1 183	^ 536	943	1 085	923	^ 542
Rangelands	692	463	643	^ 298	^ 356	552	^ 340	^ 235
South Coast Region	1 854	1 652	1 738	900	1 250	1 471	1 149	756
South West Region	3 984	2 909	3 594	1 568	2 714	3 110	2 545	1 604
Swan	1 371	^ 653	1 228	^ 400	1 061	890	^ 661	^ 408
Total	*11 917*	*9 120*	*11 007*	*4 883*	*8 517*	*9 407*	*7 847*	*4 805*
Tasmania								
North	1 403	823	1 259	^ 533	1 066	1 136	840	609
North West	1 503	895	1 304	^ 404	1 098	1 068	866	^ 424
South	958	758	868	^ 386	647	800	556	^ 268
Total	*3 864*	*2 476*	*3 431*	*1 323*	*2 811*	*3 004*	*2 263*	*1 301*
Northern Territory								
Northern Territory	380	297	344	^ 158	268	292	^ 129	*75
Total	*380*	*297*	*344*	*^ 158*	*268*	*292*	*^ 129*	*75
Australian Capital Territory								
ACT	87	65	81	^ 48	79	75	65	^ 34
Total	*87*	*65*	*81*	*^ 48*	*79*	*75*	*65*	*^ 34*
Australia(f)	**129 919**	**80 674**	**118 633**	**50 907**	**103 901**	**98 415**	**75 132**	**42 281**

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(d) Establishments reporting more than one NRM activity are shown against each specific NRM activity.

(e) The number of agricultural establishments reporting native vegetation activities is drawn from those establishments reporting native vegetation.

(f) Totals and sub-totals exclude the NHT2 regions where estimates were not produced. See Explanatory Notes, paragraph 9.

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents preliminary results from the ABS Natural Resource Management Survey 2004-05 which was conducted in 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 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.

GEOGRAPHY *continued*

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.

10 The number of agricultural establishments in the Sydney Metro region is currently over-reported with the majority belonging in the adjacent Hawkesbury/Nepean region. This coding issue will be addressed prior to the release of final estimates in September.

COMPARABILITY WITH AGRICULTURAL SURVEY

11 The Natural Resource Management Survey 2004-05 and the Agricultural Survey 2004-05 both produce estimates relating to the number of agricultural establishments. In some cases, the estimates in the Natural Resource Management Survey differ from those produced in the Agricultural Survey. The two collections have included different units in their samples and so differences have arisen in the common estimates due to sampling error. For further information, please contact the Director, Environment and Energy Business Statistics Centre, on (03) 6222 5804.

RELIABILITY OF DATA

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

SAMPLING ERROR

13 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.

14 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.

15 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.

16 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.*
	%	%	%	%	%	%	%	%	%
Agricultural establishments (no.)	0.9	1.1	1.2	1.1	1.4	2.1	4.6	4.6	0.5
Agricultural establishments reporting any NRM issue (no.)	1.3	1.5	1.5	1.6	1.8	3.0	6.0	5.2	0.7
Agricultural establishments reporting activities to manage native vegetation (no.)	2.8	3.2	3.3	3.7	3.8	6.6	16.3	11.9	1.5
Agricultural establishments reporting weed-related issues (no.)	1.5	1.9	2.0	2.0	2.5	3.7	10.4	7.3	0.9
Agricultural establishments reporting activities to manage land and soil issues (no.)	2.0	2.4	2.6	2.5	2.5	4.4	18.0	8.3	1.1
Agricultural establishments reporting water-related issues (no.)	2.7	3.5	3.2	4.5	3.4	8.1	23.2	11.8	1.5

NON-SAMPLING ERRORS

17 Error 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.

18 At the time of production of preliminary estimates for the Natural Resource Management Survey 2004-05, a live response rate of 75.6% had been achieved.

DATA QUALITY

19 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 occuring on Australian farms during 2004-05. It is also acknowledged that the existence of NRM activity is not necessarily an indicator of NRM issues being addressed nor of the intensity of the activity being undertaken.

20 This publication includes preliminary 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. Some farmers did not acknowledge native grassland, scrub, remnant or regrowth vegetation as the existence of native vegetation on their holding. In some instances this may have resulted in the number of agricultural establishments with native vegetation being underestimated.

RELATED PUBLICATIONS

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

- *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)

22 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.

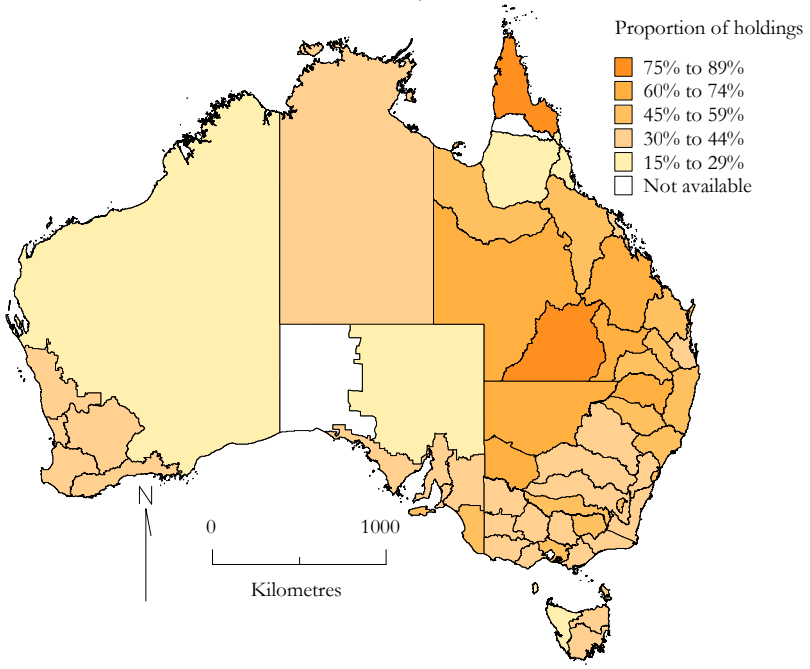
ABS DATA AVAILABLE ON REQUEST

23 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 or Erica McCoull on (03) 6222 5977.

ACKNOWLEDGMENT

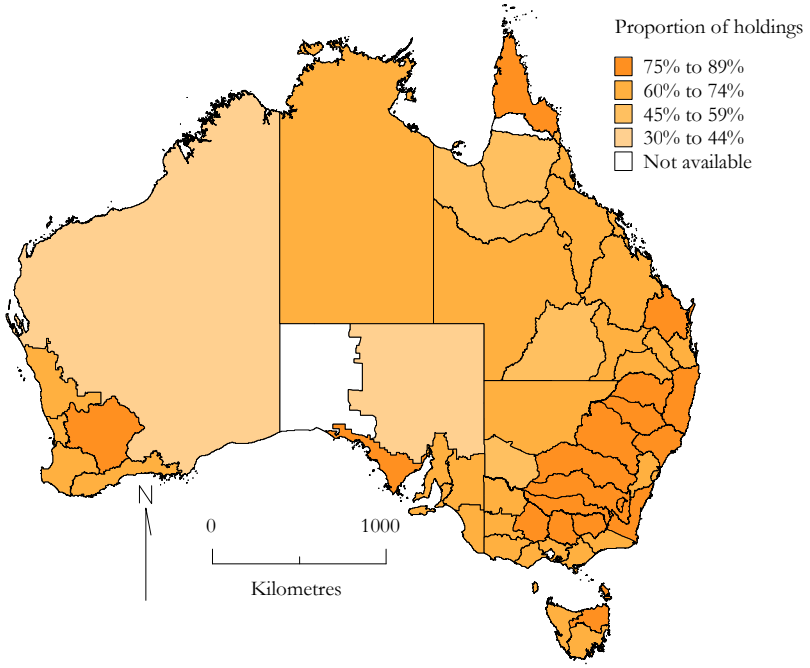
24 ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated; without it, the wide range of statistics published by the ABS would not be available. Information received by the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

A1 NATIVE VEGETATION ISSUES, 2004-05

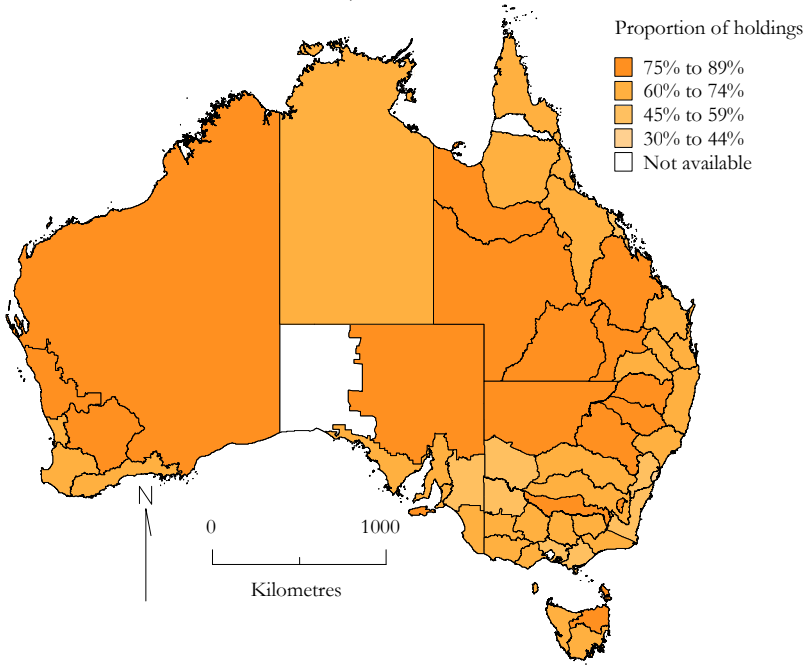


Relates only to agricultural establishments reporting native vegetation on their holding.

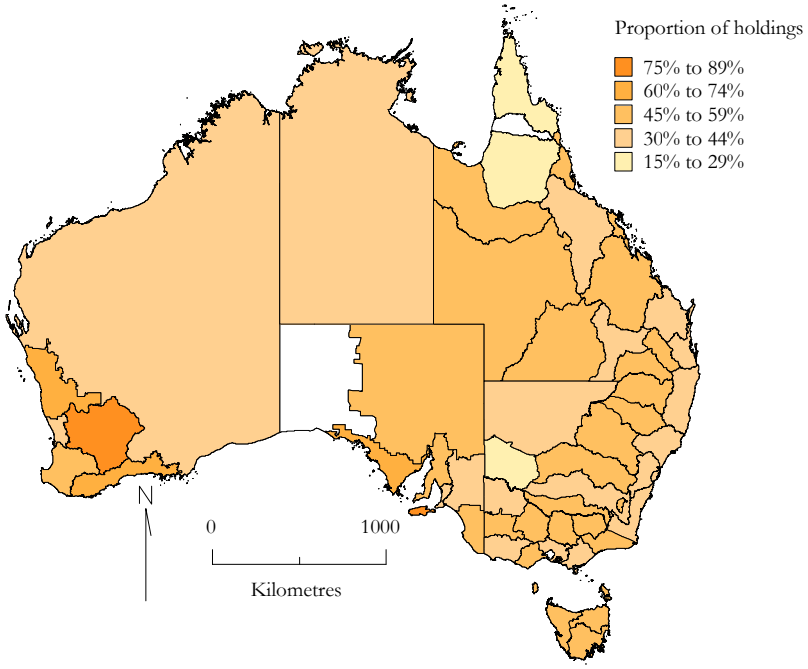
A2 WEED-RELATED ISSUES, 2004-05



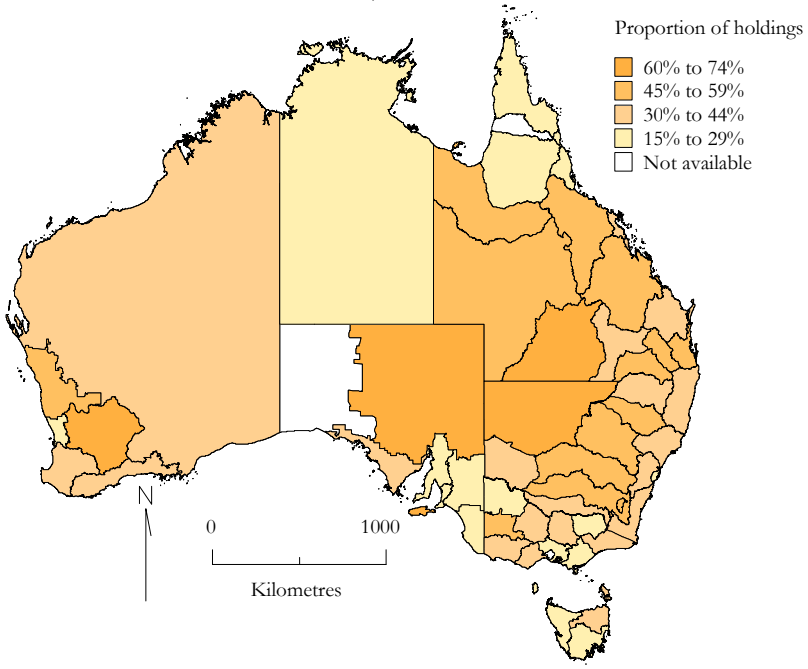
A3 PEST-RELATED ISSUES, 2004-05



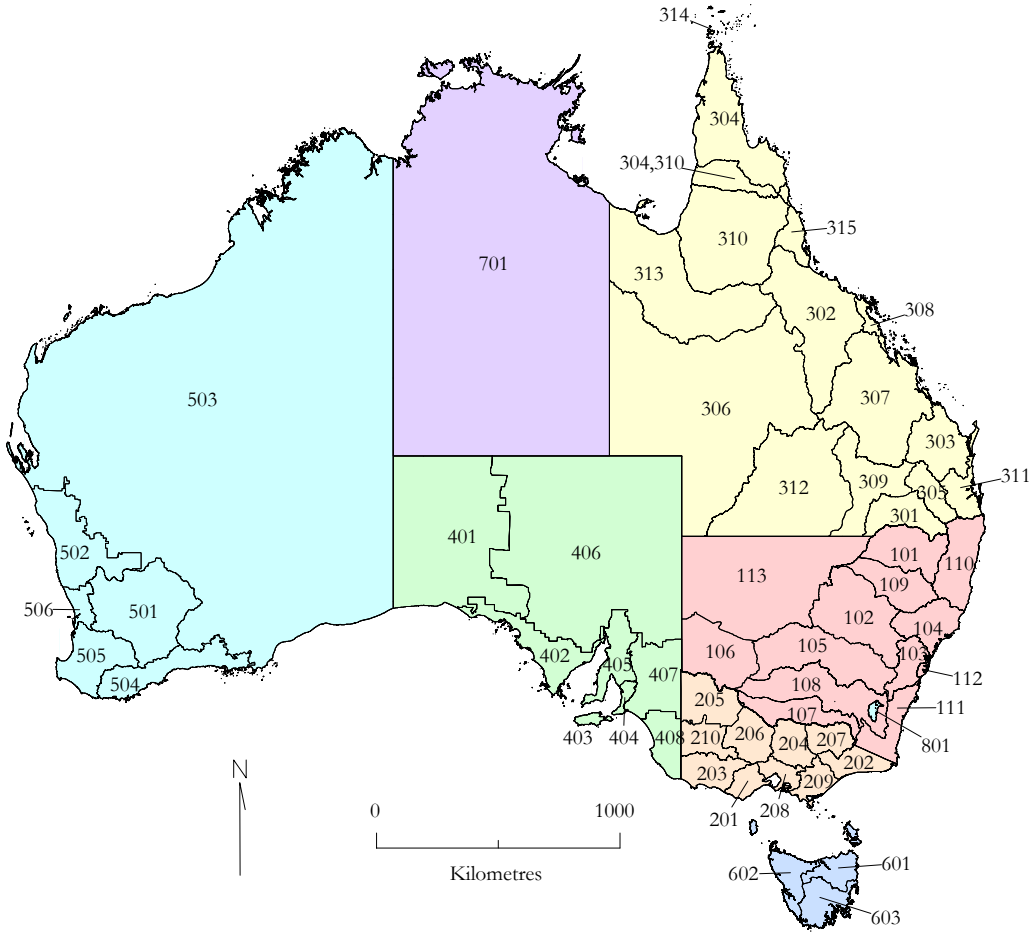
A4 LAND AND SOIL ISSUES, 2004-05



A5 WATER-RELATED ISSUES, 2004-05



A6 NHT2 REGIONS



NHT2 Region *

- 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
  - 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
  - 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)
- 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.

GLOSSARY

Agricultural establishment	An establishment which is engaged mainly in agricultural activities.
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.
Farmers	Operators of agricultural establishments.
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.
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.
Native vegetation	Any indigenous plant community, either naturally occurring or regenerated with human assistance. Native vegetation covers a range of vegetation types, includings 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) 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.
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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2462400007047
ISBN 0 642 48229 2

RRP $23.00