

Roles and responsibilities

This section reports on the following environmental indicators, which are defined in Saunders et al. (1998).

Environmental Indicator	
BD 13.3	Number of interest groups involved in protected area planning
BD 13.4	Resources committed to protected areas
BD 18.3	Number of lending institutions considering biodiversity
BD 23.1	Number of local governments with management plans for biodiversity
BD 23.2	Number of companies with management plans for biodiversity
BD 24.7	Percentage of budgets spent on conservation
BD 24.8	Amount of Indigenous ethnobiological knowledge
BD 25.1	Local government management of biodiversity
BD 25.2	Involvement of community groups in conservation

Introduction

The roles and responsibilities of those involved in biodiversity management have changed significantly in Australia in recent years, and continue to evolve. In the past, different levels of government have traditionally been involved in the conservation and management of biodiversity. Local government and the private sector are now becoming increasingly involved.

Expenditure on biodiversity

Government spending on biodiversity

From the ABS (ABS 1999b), it can be seen that governments were the largest users of services and products designed to protect Australia's biodiversity and landscape in 1995–96 and 1996–97, the latest years for which these data are available (Table 62). This provides a broad indication of the level of expenditure of Commonwealth and state governments although it was not possible to present this as a percentage of the overall level of government expenditure. However, a broad comparison can be undertaken with spending at the Commonwealth level on other programs. Budget papers for 1999–2000 indicate that \$23.8 billion was spent on Health, \$18 billion on Defence, \$49.4 billion on Family and Community Services and \$11.3 billion on Education, Training and Youth Affairs. More detailed information about spending at the Commonwealth, state and territory and local government level follows.

Table 62: National expenditure for biodiversity and landscape

Components	1995–96 (\$000)	1996–97 (\$000)
Final consumption		
General government	928 643	1 056 942
Households	143 800	168 700
Total	1 072 443	1 225 642
Intermediate consumption		
All industries	131 331	153 010
Gross capital formation		
General government	305 808	115 201
Corporate	34 097	19 008
Total	339 905	134 209
National expenditure^A		
Current	1 205 994	1 379 194
Capital	339 905	134 209
Total	1 545 899	1 513 403

^A Includes subsidies.

Source: ABS (1999b).

Table 63: Natural Heritage Trust funding, 1996 to 2002

Amounts are in millions (\$m). Due to rounding, some column totals may vary within overall totals.

	1996–97 \$m (actual)	1997–98 \$m (actual)	1998–99 \$m (actual)	1999–2000 \$m (actual)	2000–01 \$m (estimate)	2001–02 \$m (estimate)	Total \$m
Vegetation							
Bushcare ^A	3.7	22.2	50.2	81.6	104.8	83.8	346.5
Farm Forestry Program	— ^B	2.8	6.5	11.9	16.8	9.2	47.2
Inland Waters							
Murray–Darling 2001 Program	3.8	27.5	35.0	43.0	53.8	32.6	195.6
National Rivercare Program ^C	—	5.9	14.3	19.1	28.8	14.9	82.9
Riverworks Tasmania ^A	1.8	2.6	0.3	4.2	0.0	—	8.8
National River Health Program ^A	0.1	1.6	1.7	2.6	7.6	1.8	15.8
Waterwatch ^A	0.2	2.2	2.4	3.1	2.9	2.6	13.0
National Wetlands Program ^A	0.5	1.6	1.6	3.8	5.8	3.8	17.1
Biodiversity							
Endangered Species Program ^A	2.0	2.1	6.9	5.8	5.6	5.5	27.8
National Reserve System Program ^A	0.4	2.9	11.2	11.4	38.2	20.0	84.2
Land Resources							
National Land & Water Resources Audit	1.3	2.4	11.8	9.8	13.7	5.4	44.4
National Feral Animal Control Program ^D	3.7	3.1	1.6	2.0	6.1	2.7	18.9
National Weeds Program ^D	2.1	1.3	1.6	0.9	17.8	4.8	28.5
National Landcare Program (including Landcare Tax measures) ^E	10.2	30.1	49.0	49.2	109.4	78.5	326.5
Farm Business Improvement Program: Farmbis	0.4	0.3	2.6	5.6	6.0	—	15.0
Coasts and Oceans							
Oceans Policy ^{AF}	—	—	—	1.5	10.0	8.5	20.0
Coasts and Clean Seas ^A	—	8.6	20.2	28.1	35.4	24.4	116.8
Fisheries Action Program	—	1.7	2.2	3.2	3.8	2.1	13.0
Environment Protection							
Waste Management Awareness Program ^A	0.2	0.6	0.7	1.0	2.4	1.1	6.0
Atmosphere							
Air Pollution in Major Cities ^A	1.3	1.5	2.4	2.9	6.3	4.1	18.5
Australian Heritage							
World Heritage Area Management and Upkeep ^A	4.7	10.7	10.0	8.6	9.7	8.9	52.5
Total	36.3	131.4	232.1	299.4	485.0^G	314.7	1 499.0

^A Programs managed by Environment Australia; ^B Denotes nil; ^C The National Rivercare Program includes funding for Fisheries Action Program freshwater activities; ^D Programs managed jointly by Environment Australia and Agriculture, Fisheries and Forestry—Australia; ^E The National Landcare Program also receives funding from an appropriation under the *Natural Resource Management (Financial Assistance) Act 1992*; ^F Australia's Oceans Policy commitment includes \$30 million to come from consolidated revenue funds; ^G Includes \$123 million carryover from 1999–2000 to 2000–2001.

Source: Natural Heritage and Parks Division, Environment Australia.

Natural Heritage Trust expenditure [BD Indicator 24.7]

The NHT is a public finance mechanism through which a proportion of the proceeds from the privatisation of the Commonwealth's telecommunications utility are being expended on environmental and resource management programs. Many programs within the Trust are continuation of past programs. Of the programs financed in whole or part through the Trust, some have clear relevance to biodiversity, and thus those expenditures can be identified as

Table 64: Number and cost (in \$000s) of projects funded under the Natural Heritage Trust and related Programs for each state and territory, 1996 to 2000

Program	ACT		External Territories		NSW		NT		Qld	
	No.	\$000s	No.	\$000s	No.	\$000s	No.	\$000s	No.	\$000s
Advanced Property Management Planning					1	1 190	1	108	1	1 475
Air Pollution in Major Cities										
Bushcare	17	836			543	30 931	86	6 028	216	27 454
Coastcare ^A					360	4 096	9	119	213	2 728
Coasts and Clean Seas			2	305	90	13 450	15	1 398	63	9 313
Endangered Species Program	2	184			53	1 739	15	1 344	42	3 323
Farm Forestry Program	1	89			39	3 328	1	273	24	3 176
Fisheries Action Program	11	184	1	11	14	589	5	352	24	686
Indigenous Management of Protected Areas					3	142	6	344	6	298
Invasive Species Program (EA)	2	48			7	116				
Landcare Tax Credits										
Murray-Darling 2001 Program	4	407			377	39 859			67	11 288
NHT World Heritage Program					94	9 992			85	19 728
National Feral Animal Control Program					6	922	2	106	5	183
National Land & Water Resources Audit									1	158
National Landcare Program	14	961			522	62 193	104	10 858	364	40 937
National Moorings Program					1	22			2	123
National Reserves Program					24	10 361	4	671	12	9 713
National River Health Program					2	417	5	347	1	149
National Rivercare Program	2	241			99	5 562	15	1 631	73	8 214
National Weeds Program					1	70	1	2 073	3	1 185
National Wetlands Program	4	251			29	2 084	15	894	13	574
Oceans Policy										
Pre-Bushcare	5	18			33	492	30	206	35	315
Riverworks Tasmania										
Tasmanian Regional Forest Agreement										
Tasmanian Strategic Natural Heritage Program										
Waste Management Awareness Program	1	15			3	450	1	60		
Waterwatch	7	394			28	1 267	9	529	18	1 199
Totals	70	3 628	3	316	2 329	189 272	324	27 341	1 268	142 219

Table 64: Number and cost (in \$000s) of projects funded under the Natural Heritage Trust and related Programs for each state and territory, 1996 to 2000 (continued)

Program	SA		Tas.		Vic.		WA		Nat.		Total projects	Total funding No.	
	No.	\$000s	No.	\$000s	No.	\$000s	No.	\$000s	No.	\$000s			
Advanced Property Management Planning	1	780	1	372	1	1 757					6	5 682	
Air Pollution in Major Cities										18	5 093	18	5 093
Bushcare	305	16 909	114	10 524	334	19 689	245	24 661	27	25 861	1 887	162 893	
Coastcare ^A	290	2 007	133	1 028	334	2 807	218	3 986			1 557	16 771	
Coasts and Clean Seas	33	3 223	59	7 242	44	6 144	53	5 192	15	2 261	374	48 528	
Endangered Species Program	37	1 524	27	2 151	42	2 695	59	5 045	44	5 554	321	23 559	
Farm Forestry Program	18	1 474	20	1 362	37	3 290	13	3 282			153	16 274	
Fisheries Action Program	12	446	15	1 129	14	622	13	723			109	4 742	
Indigenous Management of Protected Areas	9	562	6	324	4	146	8	593			42	2 409	
Invasive Species Program (EA)	1	40			1	25	4	383	5	296	20	908	
Landcare Tax Credits									1	499	1	499	
Murray-Darling 2001	173	11 732			216	51 485			2	5 907	839	120 678	
NHT World Heritage Program	29	1 417	21	15 315			53	2 151			282	48 603	
National Feral Animal Control Program	2	496	5	947	9	912	5	494	14	1 735	48	5 795	
National Land & Water Resources Audit	2	265			1	97	2	515	6	20 967	12	22 002	
National Landcare Program	240	39 778	138	12 582	338	43 289	286	45 521	1	5 700	2 007	261 819	
National Moorings Program	1	56	1	9			1	75	1	136	7	421	
National Reserves Program	14	2 778	6	775	16	1 752	38	5 128	3	87	117	31 265	
National River Health Program	2	840			1	65	2	331			13	2 149	
National Rivercare Program	27	2 388	65	6 539	34	3 769	73	9 005			388	37 349	
National Weeds Program							1	35	5	410	11	3 773	
National Wetlands Program	23	957	21	512	23	794	21	644	25	3 552	174	10 262	
Oceans Policy									2	166	2	166	
Pre-Bushcare	75	359	47	356	74	449	59	548	2	300	360	3 043	
Riverworks Tasmania			37	7 916							37	7 916	
Tasmanian Regional Forest Agreement			27	3 164							27	3 164	
Tasmanian Strategic Natural Heritage Program			5	13 357							5	13 357	
Waste Management Awareness Program			1	400	1	100			11	1 459	18	2 484	
Waterwatch	8	1 043	16	1 077	8	1 383	6	1 024	5	499	105	8 415	
Totals	1 302	89 074	765	87 081	1 532	141 270	1 160	109 336	187	80 482	8 940	870 019	

^A Coastcare is jointly funded by the Commonwealth, through the Natural Heritage Trust, and the States and Northern Territory. These total project costs are combined Commonwealth and State/NT funds

biodiversity expenditure (e.g. NRSP, ESP). For the bulk of programs, biodiversity may benefit from expenditure, but the focus is on other issues (e.g. Waterwatch, Landcare). Tables 63 and 64 provide details of NHT funding for several programs as an overall figure (Table 63) and at the state and territory level (Table 64). The total numbers vary because of the different periods covered.

In 1999 to 2000, those projects under NHT funding and directly related to biodiversity conservation (the NRSP and the ESP) received a total of \$17.2 million (Table 63). This amount has grown considerably since 1996 to 1997, although as a proportion of total NHT spending, has fallen to 5.7% after an outlay of 7.8% in 1998–99. Projections to 2001–02 indicate that this proportion will rise again to around 8.1% of total NHT funding.

New South Wales receives the most funding for biodiversity-related projects funded under the NHT with a total of 2329 projects receiving \$189 million. Victoria and Queensland closely follow with around \$142 million. Nationally, around \$870 million has been spent on NHT projects with the National Landcare Program receiving the greatest funding.

Parks and conservation expenditure [BD Indicators 13.4 and 24.7]

Budget allocations to the prime nature conservation agency in each jurisdiction are one measure of expenditure. Total expenditure by parks and conservation services in each state (Table 65) shows that New South Wales has by far the largest budget at over \$220 million. However, estimates of expenditure per person for each state reveals that although it has a small total budget, the Northern Territory has the largest expenditure per capita. Tasmania, with the smallest area and population, has the second highest expenditure per person on protected areas of all the states (\$55.82 per head).

Table 65: Total expenditure on Protected Areas by State and Territory, 1998 to 1999

Data on spending across jurisdictions are rarely comparable, given different accounting and budget reporting formats.

	NSW ^A	NT ^B	SA ^C	Vic. ^D	Qld ^E	Tas. ^F	WA ^G
Total expenditure (\$000)	224 512	35 696	64 826	114 817	169 398	26 345	40 010
Population (No.)	6 342 000	190 000	1 487 000	4 661 000	3 456 000	472 000	1 831 000
Expenditure per person (\$/head)	35.40	187.87	43.60	24.63	49.02	55.82	21.85

Annual Reports for: ^A NSW NPWS (1999); ^B PWC of the Northern Territory; ^C National Parks and Botanic Gardens (1999), Department of Environment, Heritage and Aboriginal Affairs; ^D Parks Victoria (1999); ^E Environment Protection Agency (1999) (including the Queensland Parks and Wildlife Service); ^F Department of Primary Industries Water and Environment, National Parks and Public Land Management Services (1999); ^G Conservation and Land Management, Nature Conservation Division.

Source: ABS (1999c) and Annual Reports for state government agencies.

Within each jurisdiction, investment is spread across a range of activities. However, both in practice and as reflecting through reported budgets, these allocations are not comparable. For example, expenditure in some states and territories on research and law enforcement is recorded separately, while in others it is not. An example of the allocation of expenditure within a nature conservation agency is provided by the Northern Territory PWC. These data reveal that most of the expenses (42%) are incurred in park management (Table 66); scientific services account for 22% of total expenditure.

Local government and biodiversity

Australia has around 700 local government authorities, including large city councils with many hundreds of staff; rural councils with large land areas and few human and financial resources; wholly urban councils; and Indigenous community councils. Councils have a range of policy and management functions, including:

- land use planning and development control, within the framework of state and territory planning legislation
- maintenance and development of physical infrastructure, such as drainage and roads
- waste management, including household and industrial wastes and sewerage treatment and disposal
- provision of local community educational infrastructure (e.g. libraries) and community awareness programs
- management of open space for recreation and conservation
- pollution control.

Table 66: Northern Territory Parks and Wildlife Commission expenditure by activity

Activity	Expenditure (\$000)
Alice Springs Desert Park	3 290
Bushfire Protection	3 645
Community Service Obligation	2 825
Corporate Management	2 823
Park Management	15 111
Scientific Services	8 002
Total	35 696

Source: PWC (1999).

These and other functions are highly relevant to the local and regional management of biodiversity, which is a relatively new responsibility for local government. Over recent decades, the number and complexity of local government functions have increased, but support in terms of policy, legislation, information and human and financial resource has very often not kept pace. Full discussion of the implications of this situation with respect to native vegetation management can be found in Binning et al. (1999), Cripps et al. (1999) and Binning and Young (1999).

The importance of local government in biodiversity conservation is recognised in the NSCABD. Over recent years, considerable policy development has occurred through revised planning schemes, local conservation strategies and the Local Agenda 21 initiative that flowed from the 1992 United Nations (UN) Conference on Environment and Development. More recently, a national policy for local government biodiversity management has been developed (ALGA 2000). Two examples of how local governments are responding to these challenges are given in the *Vegetation and koala protection in Redland Shire* box below and the *Manningham City—Greenprint and LEAF* box on page 166.

Local government provisions for biodiversity [BD Indicator 23.1]

In November 1998, the National General Assembly of Local Government unanimously voted to endorse a National Local Government Biodiversity Strategy (NLGBS). This important development establishes a common policy direction for all local government bodies across Australia, recognising the importance of biodiversity and the need for integrated local

Vegetation and koala protection in Redland Shire, Queensland

Redland Shire, to the south-east of the main Brisbane city area, contains a mixture of urban and non-urban land uses and has the range of environmental and biodiversity issues typical of such an area. It is a high-population growth area with many pressures for development and significant remnant native vegetation areas. Among other specific issues, some vegetation in the Shire is habitat for the Koala (*Phascolarctos cinereus*) and is subject to the Queensland Government's State Planning Policy (SPP) 1/97 *Conservation of koalas in the Koala Coast*. Redland Shire Council's gazetted Strategic Plan of 1998 incorporates detailed provisions for environmental protection and ESD, including habitat protection and the implementation of SPP 1/97 (Strategic plan S3.1.1c).

Redland reflects a wider trend in local government to extend traditional 'tree preservation orders', that concentrated on urban trees and their visual amenity, toward more broadly based vegetation protection

policies including a range of biodiversity values. In Redland Shire *Local Law No. 6: Protection of Vegetation* (No. 1 of 1998), the Shire sets out the process for permission to remove or damage vegetation, assessment procedures, possibilities for removing protection orders, and so on. The definition of 'significant vegetation' in the Law covers a wide range of values, including Indigenous cultural significance, role as wildlife habitat or wildlife corridor, rare or threatened species status, educational or recreational use, aesthetic appeal, and importance to 'maintaining life-supporting capacities of ecological systems for present and future generations'. While, as with all recent policies and laws, implementation of this measure cannot be assessed as yet, this is an example of some of the key definitions and intents of the Convention for Biodiversity being translated into practical local contexts in a relatively short time.

Manningham City—Greenprint and LEAF

Manningham City covers 113 square kilometres, 12 km north-east of the Melbourne central business district, with a population of 110 500. The council area comprises suburban, rural and natural areas, with significant scenic and biodiversity values attached to some riparian zones and to remnant forest areas. Manningham City's overall Greenprint and specific biodiversity programs are characteristic of evolving trends in environmental management in local government. The former City of Doncaster and Templestowe produced a conservation strategy in 1991 and following the 1992 Earth Summit was active in Local Agenda 21. Review of these experiences led to the development of the broader Greenprint, which is a council-wide strategy. Greenprint includes the Council's EMS, staff training programs, and public awareness initiatives. Core to the strategy are five 'stretch goals' to be pursued in the longer term:

- zero climate damage
- zero extinction
- zero pollution
- zero soil degradation
- zero waste.

For each, there is a defined range of targets, indicators for each target, and evolving action plans and time lines. The proposed actions for zero extinction include

maintenance of a database of flora and fauna, various strategies for pest and weed control, promotion of the use of native plants in gardens and development of incentives for conservation on private land. Targets relevant to biodiversity conservation include:

- number of nurseries in Manningham City stocking more than five environmental weeds or potential weed species; currently ten, target zero by the end of 2004.
- number per area of properties in Manningham registered under the Victorian governments 'Land for Wildlife' program; currently 37 properties, target 70 by the end of 2004
- area of land per number of properties under conservation covenant; currently one property per 119 ha, target 10 properties by end of 2005.

To encourage conservation on private land, in 1999 the council made \$40 000 available through the Local Environment Assistance Fund (LEAF). Under this program, landholders can gain assistance for conservation in the form of Land Protection Works grant (dollar-for-dollar up to \$800), a Property Management Planning Course, and through Melbourne Water's Rural Stream Frontage Program.

Source: Manningham City Council (1998).

government approaches and actions. It complements the national biodiversity strategy. The Strategy defines the following objectives and suggested actions to address five key issues (ALGA/BDAC 1999).

- 1 *Awareness, training and education.* to develop a national awareness, training and education program. *Suggested actions include.* establishing a local biodiversity support network, promotion of success stories and establishment of an award system, and provision of specific support to rural councils to develop and implement local planning regulations to assist biodiversity conservation.
- 2 *Local government resourcing.* Local government resourcing is needed to ensure adequate resource for all interested Councils or regional organisations in order to have a greater role in biodiversity conservation. This includes addressing the specific requirements of Indigenous communities. *Suggested actions include.* auditing of existing programs to ensure cost effective delivery, supporting environmental officers in Councils or regional groups to develop and implement local biodiversity conservation strategies, and introducing rate rebate schemes for biodiversity conservation (see Binning & Young (1999) for a discussion and examples).
- 3 *Regional partnerships and planning.* To encourage regional partnerships and planning, preferably along existing regional boundaries. *Suggested actions include.* directing resources to regional planning and implementation and, where appropriate, providing statutory support for regional authorities to have a coordinating role, integrate biodiversity concerns with existing processes and programs (e.g. catchment planning, NHT); and support regionally administered incentive schemes (e.g. Greening Australia's fencing incentives program).
- 4 *Legislative frameworks* to encourage state governments to review, and possibly amend legislation relating to the role of local government in managing biodiversity (e.g. planning, local government and environment Acts). *Suggested actions include.* developing all catchment and regional plans in cooperation with local government and incorporating them into Council planning schemes; allowing local government to raise special purpose levies, if they wish to have a greater role in biodiversity conservation (as is done in

Brisbane City and elsewhere); and encouraging consistency between states and state Acts that relate to biodiversity.

- 5 *Information and monitoring* to establish a nationally coordinated information and monitoring system which is integrated with existing databases, to provide Councils with basic information on biodiversity in their area. *Suggested actions include:* ensuring local government has access to existing state and national data systems, preferably on GIS; establishing data standards and protocols, and ensuring data are delivered at a relevant scale; and providing training, tools and technology transfers to local managers.

These objectives serve to focus efforts, and provide a basis for monitoring and evaluation of local government needs and achievements in biodiversity conservation.

Environment Resource Officers

The Commonwealth, through Environment Australia, funds environment resource officers (EROs) at state level to serve as a focus and a resource for local government in environmental management, operating at the strategic level of state local government associations. EROs report quarterly to EA and their reports serve as a valuable interjurisdictional information flow. Much of their work is directly relevant to biodiversity. Examples include fauna road-kill education programs in Tasmania, assistance to local councils in accessing NHT funding in Queensland, representation of a local government perspective into SoE reporting in New South Wales, and development of urban biodiversity programs (e.g. Bush Forever) in the Perth region in Western Australia.

Local government spending

Recent surveys have begun to build a picture of the financial and human resources committed to biodiversity and other environmental issues by Australian local authorities. On the basis of resources committed, the ABS (ABS 2000) established that local government has a significant part in managing Australia's environment.

In 1998 to 1999, it is estimated that local governments spent \$2.1 billion in environmental expenditure, or an average of \$114 per capita. Of the total, 90% was sourced from council's household and business rates rather than from intergovernmental transfers (the states provided \$118 million and the Commonwealth \$20 million to total revenue in this area). Tasmania spent more than other states on a per capita basis, and Western Australia the least. Of the total, most was spent in traditional areas such as waste water treatment and waste management. But \$106 million was spent on measures directly relevant to biodiversity, such as tree planting, preventing land degradation, weed control and protecting streams. Relative to other areas of local government environmental expenditure, biodiversity programs were more reliant on grants and subsidies from other levels of government.

A progress report [BD Indicator 25.1]

The Australian Local Government Association (ALGA) completed a recent study (ALGA 2000) that explored the situation and progress with implementing the NLGBS. This survey provides a very important baseline data set, with some two-thirds of local authorities responding. At the broadest level, 40% of responding councils have incorporated biodiversity considerations into their corporate planning exercises, indicating a significant level of 'mainstreaming' of biodiversity at this level of government. More specifically, 46% of councils own or manage natural or constructed wetlands and 58% have planning provisions aimed at wetland conservation. One-quarter of councils have or are drafting recovery plans for threatened species, and 43% have policies for the management of native vegetation occurring on roadsides. About 34% have developed a Local Agenda 21 or ESD plan.

The work of many staff in local government involves them in biodiversity issues, but the clearest indication of commitment is the provision of a dedicated environmental officer. The ALGA survey (ALGA 2000) provides the percentage of councils (that responded to the survey) that have environmental officer (Table 67).

The ALGA survey also sought to determine the number of councils with an environmental conservation strategy (Table 68).

The Australian private sector and biodiversity

The private sector is crucial to the protection of biodiversity, but the importance of including firms and industries in biodiversity policy formulation and implementation has only been fully recognised in recent years. Traditionally, simple regulatory approaches have been relied

Table 67: The percentage of local councils with an environmental officer
The figures are based on those that responded to the ALGA (2000) survey.

State	Percentage (%)
NSW	28.2
NT	40.0
Qld	30.0
SA	33.9
Tas.	37.0
Vic.	60.7
WA	27.7

Table 68: The proportion of local councils with an environmental conservation strategy
The figures are based on those that responded to the ALGA (2000) survey.

State	Percentage (%)
NSW	13.7
NT	20.0
Qld	16.0
SA	11.9
Tas.	22.2
Vic.	47.5
WA	14.5

on, with little proactive involvement by the private sector. Now, consistent with evolving policy and management approaches – use of non-regulatory approaches, participation, self-regulation, development of green markets, etc.—the position of the private sector in environmental management has changed.

Proposed and emerging market-based approaches, such as biodiversity, carbon credits, ecosystem service credits or tradeable water rights and fisheries quotas, have significant implications for biodiversity. Some attention has recently been given to ecological aspects of water market reform (Cullen et al. 2000).

Plans to minimise impact of development: Corporations [BD Indicator 23.2]

This information was unavailable for this report.

Environmental management guidelines

Broad guidelines for environmental management for corporations have become available in recent years. The development of these by standards organisations is an indicator of how mainstream environmental management is in the corporate world. However, the guidelines tend to be non-specific in terms of biodiversity. Of potentially high significance to biodiversity management, as a management area pervaded by uncertainty and poorly understood causal relationships, is the development of an Australian Standard for Risk Management (Standards Australia 1999), and the production of a handbook for the implementation of the Standard in the environment arena (Standards Australia 2000).

Codes of practice and similar mechanisms have increasingly been developed as self-regulatory approaches within sectors, although the inclusion of biodiversity issues is rarely specific or detailed. Some examples include the following:

- The Responsible Care Program of the chemical industry
- The Environment Institute of Australia's Code of Ethics and its (under development) Policy Statement on EMSs
- Electricity Supply Association of Australia Code of Environmental Management
- Minerals Council of Australia's Code for Environmental Management (see *The mining sector*)
- Development of standards and accreditation schemes in the ecotourism sector (see the *Certification and accreditation in the Ecotourism industry* box on page 169).

Certification and accreditation in the ecotourism industry

Australia's biodiversity and natural landscapes are crucial to the economically and socially important tourism industry. Nature-based tourism can be a strong justification and source of resources for preservation, but also, if inappropriately managed or poorly informed, a threat to biodiversity in some locations. The capability and competence of tourist operators and guides can, therefore, determine the potential to assist with protection of biodiversity, both by allowing recognition of its economic importance, and in an educational sense, by exposing the public to quality experiences and information. With the great bulk of the industry comprising domestic tourism, the educational dimension is particularly important.

Rapid growth of nature-based tourism in Australia in the 1990s has led to concerns over the quality, information base, competency and effect of tourism service providers with respect to natural history, biodiversity, Indigenous culture and other issues. The need for standards of practice and competence has been increasingly recognised.

The need for proper accreditation, skills and training has been the subject of a new initiative by the Ecotourism Association of Australia (EAA 2000), which is supported by funding from the Office of National Tourism, and works together with industry, government and other stakeholder interests. Building on the existing Nature and Ecotourism Accreditation Program (NEAP II, released in 2000), this collaboration has led to the development of a national Nature and Ecotour Guide Certification Program (NEGCP).

The NEGCP, launched in late 2000, is a voluntary, industry-based initiative aimed at promoting, recognising and rewarding best practice by nature and ecotour guides. It has been designed to suit both experienced operators with existing skills, as well as people entering the industry. Certification is based on benchmarks defined around:

- core tour guide competencies for the tourism sector generally
- specific competencies developed for ecotourism, including minimal impact procedures, ecological knowledge, cultural sensitivity and interpretation skills
- experience
- commitment to professional development
- adherence to a code of ethics.

A flexible scheme of certification both assesses competencies of guides and contributes to further professional development by identifying training needs. A nationwide cadre of trained assessors is being developed to implement the Program.

This Program reflects the growing acceptance of biodiversity issues and the environment more generally as matters of accepted industry concern and practice, and deserving of high and consistent professional standards. In the case of the NEGCP, it will assist in ensuring that nature-based tourism will be better managed, and that people's experience of Australia's biodiversity will be based on quality information and high levels of professional practice.

Source: Ecotourism Association of Australia 2000, *Nature and Ecotour Guide Certification Program: Progress report June 2000*. Unpublished report.

Environmental reporting

Many corporations and industry sectors are now participating in 'green' labelling and accreditation systems. The fisheries and forestry sectors have developed initiatives to encourage and deliver market-driven incentives for sustainable production: the Forest Stewardship Council (FSC) (1993) and the Marine Stewardship Council (MSC) (1996). The Councils combine industry, environmental, community and Indigenous interests, and display of the FSC or MSC logos requires that products are harvested and processed in line with stated principles and criteria. The Western Rock Lobster fishery gained MSC certification in 2000.

Public environmental reporting by Australian corporations is an area of increasing activity and can be regarded as a major, recent development. Potentially, environmental reports can be a key mechanism for public disclosure of a corporation's effect on the environment (including biodiversity) and for continual monitoring and improvement in performance. However, the apparent relevance of available reports to biodiversity is generally compromised by lack of detail or specificity.

The mining sector

A major NGO concerned with biodiversity issues, World Wildlife Fund (WWF) Australia, independently assesses environmental reporting in the mining sector undertaken in line with the Australian Minerals Council's (AMC) Code for Environmental Management (WWF Australia 2000). This review does not deal with actual environmental performance, but rather the adequacy of reports. The assessment considered 32 reports out of 45 total signatories to the AMC's Code. The reports themselves do not contain consistent or detailed information

on biodiversity. However, given that the mining industry has been a leader in environmental reporting, the sector's reports can be viewed as a benchmark against which future reporting across sectors can be assessed. Some key findings of the WWF review include that:

- reporting standards have improved in some regards between the first (1999) and second (2000) surveys, but that considerable room for improvement exists
- larger firms and those who have a specific environmental report (rather than including it in a general annual report) produce better reports
- lack of stated performance standards and targets continues to be a problem
- external verification and review of reports is a consistent weakness in reporting processes, a problem the WWF believes can be addressed through the inclusion of external stakeholders in the reporting process; however, external verification of reports is subject to considerable debate (e.g. Solomon 2000).

With respect to external verification and participation in corporate environmental management, an example has been set by BHP Cannington's invitation to the North Queensland Conservation Council (NQCC) to appraise the environmental performance of its operation (BHP/NQCC 2000). Utilising its own resources as well as engaging independent expertise, the Council assessed performance against legislative standards, stated corporate goals, and ESD principles as defined by the Council. The process and resulting evaluation are viewed by both the firm and the Council as improving transparency, establishing better understanding between the corporation and community, and supporting ongoing improvement of environmental performance. This collaboration sets an important precedent.

Other sectors

Environmental reporting is less common in sectors other than mining, and very often the relevance to biodiversity is less clear. Jeyaretnam et al. (1999) noted that the frequency and quality of Australian reporting are both lower than in Europe or North America, but that both are increasing.

Number of lending institutions considering biodiversity [BD Indicator 18.3]

Australia's biodiversity is used every day to support economic activity. The agricultural, pharmaceutical and forestry industries are just a few sectors of the Australian economy that benefit and profit from the use of biodiversity. Since virtually every industry relies on using, or having access to, biological resources, it is in the best interests of industry to ensure that the supply of those resources is not diminished or destroyed.

In Australia, several institutions and businesses now provide environmentally responsible investment advice and investment funds that support a diverse range of activities including regional reforestation programs, land rehabilitation, native vegetation protection and regional ecotourism. As a result of concerns regarding the environmental damage done in Papua New Guinea to the Ok Tedi and Fly Rivers by BHP's Ok Tedi copper mine, shareholders in BHP have formed a group known as 'BHP Shareholders for Social Responsibility' to encourage socially and environmentally responsible codes of corporate practice. BHP Iron Ore has developed its EMS in accordance with the international standard ISO 14001.

If governments and business are to be 'part of the solution' rather than 'part of the problem' in the push for sustainable development and biodiversity conservation, then their governance and day-to-day activities need to reflect this role. Progressive businesses, for example, would be expected to adopt and implement environmental codes of practice, and to ensure that their investments were environmentally sound and consistent with sustaining biodiversity (Gasser & Cocker 2000).

Since investors increasingly try to objectively assess the environmental performance of companies when making investment decisions, Westpac and Monash University have introduced the Eco Index. This is Australia's first index of share price performance for leading eco-rated listed companies and is intended to identify better environmental performers on a relative basis. As at 31 July 2001, the index contained 82 companies from 24 sectors (Westpac 2001). Analysis of the performance of these companies suggests that good environmental performance need not hinder economic performance, even under the current legal and policy framework.

Lending institutions such as banks and superannuation funds provide much of the investment capital for business in Australia. The way these funds are used can benefit

biodiversity and support its conservation, or degrade and destroy it. Hence, lending institutions can contribute to good environmental and biodiversity outcomes in Australia if the principles by which they are prepared to loan money strongly reflect these needs.

Ethical investments

As yet, few lending institutions have adopted biodiversity conservation as a primary principle or criterion for lending. Instead, several lending institutions and the companies in which they invest have adopted principles for socially responsible investment (SRI). SRI may be driven by perceived financial advantages to companies that invest in this manner, by ethical reasons or by the so-called 'triple bottom line' (i.e. good financial, environmental and social outcomes). Some entities such as Australian Ethical Investments (AEI) Limited, which commenced in 1986, and Australian Ethical Superannuation have been operating using a SRI framework for over 10 years. AEI is owned by around 100 shareholders who share the aims and aspirations of the Australian Ethical Charter (Table 69) which guides the investment of funds. The Charter supports outcomes such as the preservation of endangered ecosystems and the development of sustainable land use and food production, and avoids investments that may unnecessarily pollute the land, air and water.

Table 69: Ethical investment charter

The Australian Ethical Charter seek out investments which provide for and support the:
development of worker participation in the ownership and control of their work organisations and places
production of high quality and presented products and services
development of locally based ventures
development of appropriate technological systems
amelioration of wasteful or polluting practices
development of sustainable land use and food production
preservation of endangered ecosystems
activities which contribute to human happiness, dignity and education
dignity and well-being of non-human animals
efficient use of human waste
alleviation of poverty in all its forms
development and preservation of appropriate human buildings and landscapes.
Avoid any investment which is considered to unnecessarily:
pollute land, air or waters
destroy or waste non-recurring resources
extract, create, produce, manufacture, or market materials, products, goods or services which have a harmful effect on humans, non-human animals or the environment
market, promote or advertise, products or services in a misleading or deceitful manner
create markets by the promotion or advertising of unwanted products or services
acquire land or commodities primarily for the purpose of speculative gain
create, encourage or perpetuate militarism or engage in the manufacture of armaments
entice people into financial overcommitment
exploit people through the payment of low wages or the provision of poor or unsafe working conditions
discriminate by way of race, religion or sex in employment, marketing, or advertising practices
contribute to the inhibition of human rights generally.

Source: after Australian Ethical Investment (2000).

Since the mid-1990s, many more lending institutions have begun to give attention to environmentally responsible investments including those consistent with biodiversity conservation. For example, the Hunter Hall Trust is the largest ethical fund in Australia. Its investment policy restricts investment in companies that derive profits from alcohol, tobacco, armaments, gambling, destruction of the environment or cruelty to animals. The Trust also

donates 10% of performance fees to charities that support good environmental and biodiversity conservation outcomes. The HESTA Superfund has developed an 'ecopool', allowing members to invest a portion of their superannuation into cash and shares of companies listed on the Australian Stock Exchange that have been screened for environmental performance. AEI Ltd supports a number of trusts, including the Australian Ethical Equities Trust, which provides a service that has been taken up as an investment choice by the Credit Union Superannuation Fund. Quadrant Superannuation Fund offers an ethical investment strategy in a choice of five options, which commenced in July 1997, while the Health Employees Superannuation Trust of Australia offers an environmental screened investment strategy in a choice of options that commenced 1 February 2000.

The Bendigo Bank recently commenced an alliance called The Ethical Investment Trust, which is a Community Aid Abroad initiative. The fund is offered exclusively through and managed by the Bank. Investments are required to be beneficial both socially and environmentally, and all proceeds are distributed to Community Aid Abroad. Earth Sanctuaries Limited offers investors the opportunity to directly and principally support biodiversity conservation goals. This publicly traded company establishes safe areas or sanctuaries for the introduction of rare and endangered Australian wildlife that have declined or become regionally extinct as a result of European activities on the Australian continent. UniSuper, the major superannuation fund for Australian universities, has recently tested the interest of members in an ethical investment option.

Estimates of the total amount of ethical investment funds in Australia vary greatly, but may approach \$1 billion. This range compares to an estimate of US\$350 billion for similar investments in the United States economy (Gasser & Cocker 2000). Whatever the true amount, investments of this kind in Australia are modest in the context of the billions of dollars managed by national lending institutions. Even so, this situation has the potential to change rapidly as commercial and ethical concerns and policy changes give enhanced prominence to environmental sustainability and biodiversity conservation.

Philanthropic funding

In addition to the investment funds managed by these lending institutions, many philanthropic groups and trusts regularly donate and provide very important funds and significant support for biodiversity conservation and research. For example, the Westfield Trust allocates \$2 million per year in six key areas of community development including heritage conservation. The Myer Foundation provides vital funding such as the recent \$1 million donation to CSIRO for research on the role of essential ecosystem services for humanity.

The Australian Bush Heritage Fund has, as a result of a generous bequest, acquired a 59 000 ha property (Carnarvon Station adjacent to the Carnarvon National Park) in southern Queensland that encompasses seven regionally endangered ecosystems, while Birds Australia have recently acquired 'Newhaven', a large and biologically rich pastoral property in central Australia. The Victorian Trust for Nature has supported biodiversity conservation across a range of ecosystems in Victoria and provides funds for research on rare and endangered species across this region. In Western Australia, the Lotteries Commission, through the Gordon Reid Foundation, makes available a portion of its tax revenue for investment in good environmental outcomes at the community level. It is able to do so because conservation is deemed a 'charity'.

Involving the community in conservation

Community involvement in biodiversity conservation [BD Indicators 13.3 and 25.2]

In recent years, there has been a strong trend towards community-based or participatory approaches to biodiversity policy and planning. As attention shifted from reservation and the management of the reserve estate to off-reserve areas and management of biodiversity across tenures and landscapes, the broader involvement of groups and individuals is necessary. Broadly, the justifications for increased community participation are: a democratic ideal that people should be involved in policy and management that affects them, the greater likelihood of lasting and more effective management strategies when these are subject to wider support in the community, and that managing biodiversity involves public and private sector and community decisions.

Against this, there is a tension perceived by some commentators that community-based programs may replace, rather than build on or complement, government's own efforts, with the latter declining through cost shifting or reduction in traditional public sector activities at state and territory level.

By far the greatest emphasis has been on community-based groups such as Landcare and Waterwatch, and these are discussed below. However, organised community groups and individuals may participate in biodiversity policy, management and practice in a much wider variety of ways, including:

- as voters at three levels of government
- as members of, for example, interest or advocacy groups and industry associations
- through legal standing and access to information in planning law
- through representatives on statutory boards or advisory committees, informal advisory bodies, reserve management boards and similar organisations
- through involvement in particular policy processes
- as members of or through representatives on regional or catchments organisations
- as members of community-based management or monitoring groups
- as consumers making choices based on biodiversity considerations
- in workplaces subject to environmental codes of practice
- as individuals engaging in biodiversity-related activities on private land.

Since the mid-1990s, representatives of major interest groups have been closely involved in development of major policies, such as the NSCABD, Oceans Policy and National Principles and Guidelines for Rangelands Management. Public participation in the RFA process varied widely across jurisdictions. In some jurisdictions, standing and rights to object to development proposals have been curtailed. Development of a clearer mutual understanding of expectations of and roles in policy development processes between interest groups and governments may be desirable as part of the ongoing evolution of partnership arrangements.

Most jurisdictions have created arrangements whereby interest groups have ongoing input into biodiversity policy, whether this is ad hoc or through statutory arrangements. The EPBC Act enables broader input through continuation of BDAC and through a Threatened Species Scientific Committee and Indigenous Advisory Committee. This participation is, however, largely expertise based rather than representative.

The Commonwealth undertakes community education programs through Environment Australia, and supports the community biodiversity network (CBN) (see the *Community Biodiversity Network* box on page 173).

Community-based programs [\[BD Indicator 25.2\]](#)

In Australia, involvement in the protection of biodiversity by individuals and community groups is encouraged by both federal and state governments. The number and size of these programs, and even more so of the activities and groups funded through them, render consistent reporting of activities impossible in the absence of large-scale surveys of all groups across all jurisdictions. Very often, particular groups or landholders will access support from more than one program over time to achieve different goals (see the *On-farm biodiversity conservation* box on page 175). Table 63 identifies a selection of recent state and territory government activities and programs encouraging or funding community participation.

The Natural Heritage Trust

At the Commonwealth level, the NHT is the mechanism for funding different community involvement programs that involved over 305 000 individuals in 1999 (Figure 58; see *Government spending on biodiversity* on page 160). The NHT is not in itself a community-based program, but rather a public finance mechanism through which a variety of programs are funded. The largest number of participants are involved in Landcare (33%), followed by Waterwatch (23%), Bushcare (18%) and the Murray–Darling 2001 Program (13%). These



Community-based Citizens Wildlife Corridor project, Northern Tablelands of New South Wales.

The series of 1:100 000 map sheets show native vegetation in the Armidale region and the properties that are part of the wildlife corridor scheme.

Community Biodiversity Network: Adding value to community efforts

Around Australia, thousands of community groups and organisations are working to increase community understanding of biodiversity and involvement in its conservation. The NSCABD (ANZECC 1996) recognises that these initiatives can be catalysed by integrated measures that increase awareness and involvement. In line with this, in 1995 the Humane Society International, with the support of the Commonwealth government environment department, established the CBN.

The CBN is a national network of hundreds of organisations, which aims to increase community understanding, support for, and involvement in biodiversity conservation, and to provide easier access to biodiversity conservation information.

Each year the CBN works with over 100 organisations to stage 'Earth Alive! Biodiversity Month' in September. Biodiversity month provides a national community and mass media focus to highlight the value of Australia's rich biodiversity, relate biodiversity to lifestyle and welfare, and encourage people to become more involved in conserving the habitat of local native species and ecosystems (see photo).

This includes relating biodiversity to simple household actions, such as creating a habitat garden and keeping pets indoors to keep them and native wildlife safe, as well as the major biodiversity conservation issues, such as ongoing habitat loss. Local community events include bush regeneration days, nature walks, seminars and school working bees to create habitat gardens. To highlight the positive efforts of thousands of Australians in conserving wildlife habitat, the CBN also awards EcoHero Awards during Biodiversity Month.

To help groups avoid 'reinventing the wheel' when developing community education products, and to provide 'one stop shop' information resources, the CBN has developed a range of tools including the:

- Earth Alive Directory of Biodiversity Resources, Programs and Organisations
- On-line Biodiversity Education Centre, for teachers and students
- Earth Alive Biodiversity Communicators Kit.

The CBN also produces a range of reference, news and community education products, such as its Earth Alive Home Guide, LifeLines bulletin, television and radio community service announcements, and various booklets and fact sheets. Many of these are available on the CBN website <http://www.cbn.org.au>.

Source: Andreas Glanznig, CBN.



Biodiversity Month Patron, Sir William Deane, (former) Governor-General of Australia, plants a local native plant in his backyard with help from children.

Source: Grant Ellmers, CBN.

four programs account for 87% of the total community participation under NHT funds. There are around 1500 Waterwatch groups monitoring water quality and aquatic biodiversity, and over 4000 Landcare groups.

It is difficult to ascertain precisely the relevance of thousands of different activities to biodiversity, but broad programs can be classified as more directly or indirectly targeted. Of the four largest programs, Bushcare and Waterwatch are the most clearly relevant, although the other major participatory programs may produce biodiversity benefits. Bushcare facilitators operate at state, territory and regional level to liaise with landholders and community groups. However, as Curtis (1998) suggests, the ability of some programs targeted at other issues such as Landcare and land degradation to deliver biodiversity benefits on private land should not be overestimated. The most biodiversity-specific of the NHT programs, the NRSP and ESP, involve far fewer people as they are not as clearly community based.

Commonwealth government funding for mostly community-based NHT projects is administered through the Environment and Agriculture, Fisheries, Forestry portfolios. In 1999–2000, \$299.4 million was provided

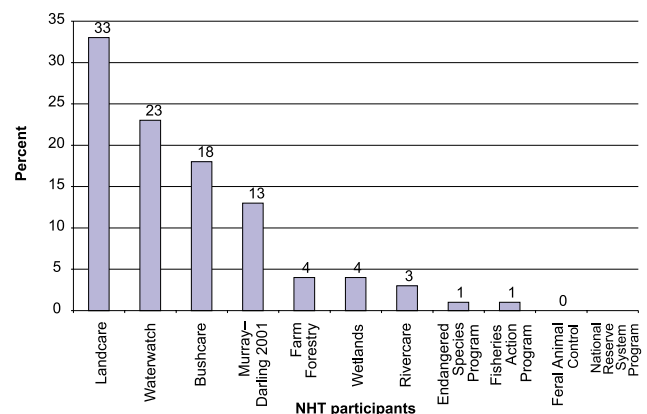


Figure 58: The percentage of participants in Natural Heritage Trust programs, 1996 to 2000.

Source: Environment Australia.

On-farm biodiversity conservation: 'Millpost'

On 31 August 2000, the Director-General of the NSW NPWS, Brian Gilligan, launched the State's new Community Assistance Program (CAP) at 'Millpost', a 1100 ha fine wool sheep property run by David Watson and Judith Turley on the southern tablelands of New South Wales. Acknowledging the results of 20 years of planning and management to combine production and conservation, Mr Gilligan said:

the property contains a wide variety of highly significant wildlife habitats, which have been maintained and enhanced while retaining a successful and viable agricultural enterprise. 'Millpost' is a significant wildlife haven hosting native animals including a truly remarkable bird life, many of which are declining elsewhere. The property is a testament to the land management abilities of the Watsons and a fine demonstration that agricultural production can and does coexist with the conservation of biodiversity.

The philosophy behind the management of 'Millpost' combines rotational grazing practices, permaculture design principles and a belief that economic viability requires maintenance of the integrity of the biological resource base.

Since 1979, tens of thousands of trees have been planted, from direct seeding and raised tube stock. The plantings have been for wildlife habitat, catchment protection and windbreaks, with most being local species such as *Eucalyptus viminalis*, *E. mannifera*, *E. pauciflora* and *E. stellulata*, and *Acacia rubida* and *A. dealbata*. Tree plantings are complemented by understorey plantings for

habitat, including *Bursaria*, *Grevillea*, *Callistemon* and *Melaleuca*. Extensive areas, including a sizeable wetland area, are excluded from grazing pressure.

'Millpost' has seen production as well as conservation benefits from planned revegetation. An increase in bird life has been the most noticeable change, especially of smaller species not previously common in the area (i.e. honeyeaters, pardalotes and whistlers). Increased shelter for stock, and a prolonged growing season from greater retention of soil moisture in spring and early summer, have benefited the grazing enterprise.

While the great bulk of the investment and work over the last 20 years has been by the owners, they acknowledge various forms of assistance, such as from Greening Australia, the National Tree Program and the National Afforestation Program. The latest assistance, in August 2000, came when workers from the Australian Trust for Conservation Volunteers, under the CAP and funded through the NSW government's Environment Trust, helped with new planting and maintenance work on existing plantings. Such partnerships between private landholders, community groups and government are seen as crucial to on-farm biodiversity enhancement.

As for the future, Mr Watson and Ms Turley acknowledge that, even after 20 years of progress, achieving a balance between production and conservation is a long-term task. Further challenges include dryland salinity, weeds such as Serrated Tussock and St John's Wort, the breakup of surrounding farmland under non-productive uses and, above all, the overall viability and decline of rural communities and economies.

(Table 63). In contrast to the number of participants involved, the largest amount of funding was provided to Bushcare (\$81.6 million), followed by Landcare (\$49.2 million), Murray-Darling Basin 2001 (\$43 million) and then the Coasts and Clean Seas Initiative (\$28.1 million).

Voluntary agreements

These programs essentially involve voluntary contributions by individuals who have an interest in environmental issues usually local to their areas. Programs also exist where private landholders can be encouraged to enter into voluntary agreements with governments to put aside land specifically for the purposes of wildlife conservation (Williams & Sutherland 2000). Such programs include Voluntary Conservation Agreements, wildlife refuges and Land for Wildlife (see *Selected government programs encouraging private landholder and community programs* box on page 176).

Legislative mechanisms

Governments also have legislative means by which landholders can contribute to biodiversity conservation, in the form of property and conservation agreements and covenants. These allow agencies of the State to make legal



The Genaren Hill Sanctuary near Peak Hill, central-western New South Wales, is a 400 ha remnant on private land.

The Genaren Hill Landcare Group installed 86 km of predator-proof fencing and have reintroduced the Brush-tailed Bettong (*Bettongia penicillata ogilbyi*) and Bridled Nalltail Wallaby (*Onychogale fraenata*), which were both regionally extinct.

Source: JE Williams.

Selected government programs encouraging private landholder and community programs, 1998 to 1999

Australian Capital Territory (1999–2000)

- Landcare groups include the Ginninderra Catchment Group, Canberra Ornithologists Group, O'Connor Ridge ParkCare Group, Sullivans Creek Catchment Group
- funding for community groups to attend International Landcare Conference, March 2000
- National Heritage Trust (NHT) funding of \$941 326 for environment projects
- support for the Murrumbidgee Catchment Coordinating Committee.

New South Wales

- nine Voluntary Conservation Agreements signed in 1998–99 bringing the total to 49 (5340 ha) with a further 90 under negotiation
- under the Wildlife Refuge program, 600 refuges have been declared since 1950
- Land for Wildlife program and Farming for the Future, which includes a module on biodiversity issues
- NPWS Discovery program, Save Our Species Program and Community Biodiversity Survey Manual
- Community Assistance Program (CAP).

Northern Territory

- Indigenous involvement in protected area management
- 'Friends' groups for individual parks (e.g. Friends of Alice Springs Desert Park launched in 1998–99 with over 900 members)
- Volunteers on Parks Program and a Junior Ranger Program.

Queensland

- Environment Protection Agency (EPA) grants totalling \$988 917 to coastal community organisations for 60 projects under the Coastcare Grants Program
- EPA approved 53 out of 227 applications for funding projects under the Queensland Community Heritage Grants Program (local government, Indigenous and heritage groups) totalling \$507 000
- QPWS funded 59 projects totalling \$234 300 for non-profit, non-government, community-based organisations
- QPWS re-established the NatureSearch Program with part-time coordinators and volunteers to gather records about Queensland's native species
- funding of \$7 million from the NHT for Bushcare programs for 95 projects
- Queensland extended the Land for Wildlife Program to assist landholders to integrate wildlife habitat protection principles into management of their properties
- Community Nature Conservation extension network was established to deploy extension

officers to assist landholders and community groups to pursue conservation objectives

- under the *Nature Conservation Act 1992*, the government can enter into Nature Conservation Agreements with private landholders to create protected areas
- over 120 volunteers from community groups and industry enlisted as part of the Queensland Turtle Conservation Program
- the Gladstone-based volunteer group Friends of Capricornia established to control weeds and monitor wildlife on Capricorn and Bunker Islands
- volunteers at Airlie Beach and the Whitsunday Islands coordinated to help run the visitor information centre and undertake monitoring.

South Australia

- Protected area Consultative Committees and Friends Groups have been established
- establishment of a network of NHT facilitators, Bush Management Advisers and regional state government ecologists to provide assistance to landholders
- provision of funding including: service programs for Indigenous people (\$3.4 million); Coastcare grants (\$377 000); National Estate program grants (\$209 000); NHT grants (\$1.1 million) including Heritage Agreements for private landholders; Waterwatch program (\$259 000)
- Land for Wildlife Program being developed to encompass a range of private landholder nature conservation initiatives.

Tasmania

- programs include Wildcare, Bushcare, Rivercare
- Weedplan established to educate the farming community in identifying new weed threats
- establishment a \$30 million reserve project for private land under the RFA process: 150 properties have been assessed, with two purchased so far and another 45 possible.

Victoria

- Parks Victoria granted \$5.3 million to community groups and local government to improve Victoria's extensive network of parklands. This included projects under start-up grants, 'Friends' programs, National Estate Grant Program, Coast Action/Coastcare projects and Coasts and Clean Seas projects.

Western Australia

- Minister for the Environment's Community Conservation Grants
- Land for Wildlife Scheme
- Remnant Vegetation Protection Scheme
- Gordon Reid Foundation for Conservation Grants Scheme.

agreements with private landholders or with other public sector agencies for resource management. The agreements may provide financial incentives for meeting the objective of conservation on private land (e.g. assistance for fencing) and involve a contractual arrangement and may in some cases attach to the title of the land so as to bind future owners. Some earlier legislation includes agreements more targeted at land degradation but which may also yield biodiversity benefits. Acts under which voluntary conservation or resource protection agreements and covenants can be made include:

- *Nature Conservation Act 1992* (Qld)
- *Conservation and Land Management Act 1984* (WA)
- *Conservation, Forests and Lands Act 1987* (Vic.)
- *Flora and Fauna Guarantee Act 1988* (Vic.)
- *Native Vegetation Act 1991* (SA)
- *Soil Conservation and Land Care Act 1989* (SA)
- *National Parks and Wildlife Act 1974 (1995)* (Cwlth)
- *Threatened Species Conservation Act 1995* (NSW)
- *EPBC Act 1999* (Cwlth).

In New South Wales, some 600 wildlife refuges have been declared, and over 80 Voluntary Conservation Agreements made over individual properties. In a move that links landholder and community efforts, the NSW NPWS in 2000 launched the CAP. The CAP is funded from the NSW Environment Trust, run by the NPWS and the Australian Trust for Conservation Volunteers and involves volunteers assisting with biodiversity conservation projects on properties subject to a Voluntary Conservation Agreement.

Number of interest groups involved in protected area planning [BD Indicator 13.3]

Interest group involvement is usually voluntary, may contribute to protected area planning in a consultative capacity and some may even be involved in preparation of management plans.

The basis and intent of interest group involvement in protected area planning and management varies. Interest groups identified as being 'explicitly involved' in protected area management and planning by the Victorian government illustrate this, including environmental groups (e.g. ACF and Birds Australia), recreational user groups (e.g. Australian Anglers' Association, Victorian Association of 4WD Clubs, Sporting Shooters Association of Australia) and industry associations (e.g. Tourism Council, Victorian Apiarists Association, Victorian Fishing Industry Association). This illustrates the range of interests increasingly involved in negotiating multiple values and uses of protected areas.

Community participation has become more central to the strategic planning and operations of nature conservation agencies. For example, in Queensland, the EPA (including the QPWS) describes detailed plans for consultation in its 'Agency Consultation Plan 1999–2000'. This sets out, for example, across a wide range of programs and reserves, the kind of consultation planned, time period, groups to be consulted and budget requirements. Groups identified include local residents, environmental groups, Indigenous organisations, industry interests, local government and other state agencies.

Indigenous people and biodiversity

The involvement of Australia's Indigenous peoples in understanding and managing biodiversity is crucial, for three reasons. First, there is widespread recognition of the past, present and future custodianship of Australia's biodiversity by Indigenous peoples, and of their rights and responsibilities toward it under both customary and western law. Second, traditional and ongoing Indigenous knowledge is increasingly accepted as a valid and necessary information input to biodiversity management, alongside scientific information. Third, with some 15% of the continent under Indigenous ownership and/or management in 1996, often in remote environments that represent a management challenge, achieving protection of biodiversity without strong participation by local communities would be impossible.

An important aspect of Indigenous involvement in biodiversity is the recognition, continuity and use of traditional ecological or ethnobiological knowledge. The NSCABD recognised that an important means of protecting and managing biodiversity would be the discovery, documentation and continuity of the knowledge of Australia's Indigenous peoples who have maintained this biodiversity for many thousands of years before European occupation. One of the key objectives of the Strategy was to recognise and ensure the

continuity of the contribution of the ethnobiological knowledge of Australia's Indigenous peoples to the conservation of Australia's biodiversity. A further recommendation in Action 4.1.8 (ANZECC 1996) was to:

Recognise the value of the knowledge and practices of Aboriginal and Torres Strait Islander peoples and incorporate this knowledge and those practices in biodiversity research and conservation programs by:

- (a) encourage the recording (with the approval and involvement of the Indigenous peoples concerned) of the knowledge and practices of Indigenous peoples;
- (b) assess the potential of this knowledge and these practices for nutritional and medicinal uses, wildlife and protected area management and other purposes; and
- (c) apply the knowledge and practices in ways that ensure equitable sharing of the benefits arising from their use.

However, the review of the Strategy's implementation (ANZECC 2001) found the outcome of Objective 1.8 was 'not achieved'. In particular, the authors of this review noted that:

To date, cooperative ethnobiological programs are limited and do not appear well-coordinated Australia-wide. Concerns have been raised about the lack of protection that would be given to the intellectual property rights of Indigenous peoples were they to offer information. There is a need to respect the knowledge of Indigenous peoples as an expression of a way of life and cultural identity as well as a tool for biodiversity conservation.

The Council for Aboriginal Reconciliation in its report on *Achieving economic independence* (2000, p. 6) recommended that:

(2E) State and national parks review their management and employment practices to ensure there is genuine opportunity for Indigenous participation in planning and employment which acknowledges Indigenous community obligations and uses traditional knowledge and skills.

Use of Indigenous knowledge is mostly occurring in protected areas managed either by nature conservation agencies, Indigenous organisations or in joint management arrangements. The Commonwealth in 1999 established an inquiry into use of biological resources in Commonwealth areas (Voumard 2000) and Williams (1998) provided a review of the importance of traditional knowledge, and of its status as crucial intellectual property. There is a discernible transition from treating Indigenous heritage as comprising 'sites' and 'relics' only, toward appreciation of the Indigenous legal, social and management importance of total landscapes and a wide suite of biota. English and Brown (2000) described previous approaches as involving a division between cultural and natural heritage that is only now being appreciated as inadequate and not representing Indigenous custom, knowledge or law.

Governments in Australia have increased employment of Indigenous peoples in protected area management, established Indigenous Protected Areas (IPAs), entered into joint management arrangements for protected areas and created registers of Indigenous historic and cultural sites.

Commonwealth government policies and programs [BD Indicators 13.3, 24.8 and 25.2]

Joint management

The Commonwealth government has entered into partnerships with Indigenous peoples in nature conservation through joint management arrangements with Indigenous traditional owners of Kakadu, Uluru-Kata Tjuta and Booderee National Parks. The traditional owners lease back the parks to the Commonwealth. Both Kakadu and Uluru-Kata Tjuta are World Heritage Areas. Booderee National Park contains the only Indigenous-owned botanical gardens in Australia.

Management arrangements with these parks provide for access and equity in Indigenous employment and training. For example, Indigenous employment is 30% of the workforce for Kakadu, 33% for Uluru-Kata Tjuta and 52% for Booderee. Boards of management for these parks provide for a majority Indigenous representation and an Indigenous chairperson (e.g. The Kakadu Management Board consists of 10 Indigenous members and four non-Indigenous members). Board meetings at Uluru-Kata Tjuta National Park are translated into Pitjantjatjara. At some parks, non-Indigenous staff undertake training in local Indigenous

Table 70: IBRA Regions (version 4) and IPAP (Indigenous Protected Areas Program) projects

IBRA region	IBRA region size (ha)	% IBRA as Protected Area (1997)	Priority for National Reserve System	IPAP Project	IPAP Area (proposed or actual) (ha)	Year declared as IPA
Cape York Peninsula	11 590 399	13.72	Low	Pula and Deliverance	53	—
Central Ranges	9 706 061	0	Moderate	Central Ranges	NA ^A	—
Central Ranges	9 706 061	0	Moderate	Watarru and Walalkara	1 980 000	2000
Dampierland	8 945 678	0.84	High	Dampier Peninsula	NA	—
Furneaux	240 654	26.63	Moderate	Tasmanian LM	1 650	—
Furneaux	1 892 251	5.65	Moderate	Wilsons Promontory	NA	—
Gibson Desert	15 553 049	12	Moderate	Central Ranges	NA	—
Great Sandy Desert	39 459 921	2.33	Moderate	Great Sandy Desert	271 700	—
Great Sandy Desert	39 459 921	2.33	Moderate	Paraku	NA	—
Great Victoria Desert	42 375 084	16.44	Low	Anangu Pitjantjatjara Lands	1 000 000	—
Jarrah Forest	4 601 333	3.94	Low	Manguri	NA	—
Mount Isa Inlier	6 658 586	2.69	Moderate	Lake Moondarra	NA	—
Murray–Darling Depression	19 748 019	12.44	Moderate	Mutawintji ^B	—	1998
Nullarbor	19 500 428	18.59	Low	Yalata	456 300	1999
South East Coastal Plain	1 892 251	5.65	Moderate	Deen Maar	453	1999
Simpson-Strzelecki Dunes	27 787 605	27.87	Low	Witjira	—	—
South Eastern Queensland	6 860 424	4.03	High	Guanaba	100	—
Stony Plains	18 159 145	4.82	High	Finniss Springs	171 270	—
Stony Plains	18 159 145	4.82	High	Nantawarrina	58 000	1998
Stony Plains	18 159 145	4.82	High	Witjira	NA	—
Tanami	31 665 582	0.43	Moderate	Purta	390 000	—
Tasmanian Midlands	769 751	2.02	High	Risdon and Oyster Coves	141	1999
Top End Coast	6 931 917	15.8	Moderate	Amorrduk	—	—
Top End Coast	6 931 917	15.8	Moderate	Dhimmuru	20 000	—
Warren	1 044 781	26.16	Low	D'Entrecasteaux	—	—
West and South West	1 839 898	70.62	Low	West Coast Tasmania	—	—
Woolnorth	966 686	7.26	High	Preminghana	524	1999

^A Not available; ^B Joint Management Area.

Source: Centre for Environment Management 1999.

languages. These languages are also used for some Plans of Management (Uluru-Kata Tjuta Board of Management and Parks Australia 2000).

The Great Barrier Reef Marine Park Authority and the Aboriginal and Torres Strait Islander Commission have proposed a strategy to develop a framework for Indigenous co-management of the Southern Great Barrier Reef. Plans of management are in the process of being developed for specific issues in the Hope Vale and Mossman regions.

Other Commonwealth programs

The IPAP was initiated to encourage Indigenous involvement in the establishment and management of IPAs recognising the close links and compatibility between Indigenous culture and biodiversity (see *The Indigenous Protected Area Program* box on page 70). Table 70 provides a number of statistics about the IPAP, including the number of projects that have been supported per IBRA region:

- An Indigenous Advisory committee has been established under the EPBC Act. This committee will advise on Indigenous knowledge and practices in conservation and sustainable land management practices.

- An inquiry to examine access to biological resources was conducted in early 2000 to advise on a scheme that could be implemented to provide for the control and access to biological resources in Commonwealth areas (Voumard 2000). The inquiry focused on ensuring equitable sharing of benefits arising from the use of Indigenous knowledge and practices and also addressed issues of intellectual property rights.
- In July 2000, Environment Australia announced a newly developed Indigenous Career Development and Recruitment Strategy to build on the 65 Indigenous staff already employed.
- The Contract Employment Program for Aborigines in Natural and Cultural Resource Management and the Aboriginal Rural Resource Initiative were both wound up.

State and Territory-based policies and programs [BD Indicators 13.3, 24.8 and 25.2]

Australian Capital Territory

- The ACT does not specifically mention Indigenous involvement in biodiversity or conservation management in its latest Nature Conservation Strategy 1998 or the Annual Report of the ACT Environment Advisory Council 1999.

New South Wales

- In 1998, Mutawintji National Park and Historic Site and Coturaundee Nature Reserve were transferred to the Mutawintji Local Aboriginal Land Council and leased back to NPWS under a joint management arrangement (see the *Mutawintji National Park* box on page 181). The IPA program funded some of the activities that helped to establish this management structure under its cooperative management component.
- Lake Mungo National Park, Mount Yarrowyck Nature Reserve, Mount Grenfell Historic Site and NSW Jervis Bay National Park have also been transferred back to their traditional owners for co-management with the NPWS. As part of the Eden Regional Forest Agreement process, Biamanga National Park is also under joint management.
- In 1998–99, NPWS allocated \$350 000 to 55 discrete Indigenous heritage conservation projects.
- The NPWS employs the highest number of Indigenous people of all the Australian conservation agencies and provisions continue to be developed for employing and training Indigenous peoples as NPWS officers. The NPWS also maintains detailed and readily available statistics on Indigenous employment in the Service.

Northern Territory

- The influence of Indigenous preferences, beliefs and practices are more apparent in the Northern Territory PWC annual reporting than for any of the other conservation agencies and there is provision for the Commission Board to have not less than three Indigenous members.
- The Commission does not have other readily available statistics on such aspects as Indigenous employment in the Commission.
- The PWC works with traditional owners in the establishment of IPAs and in cooperative land management and planning, such as with the Indigenous landowners of the Amorrduk clan areas with a view to later establishment of an IPA.
- Traditional knowledge has been very important in the development and implementation of fire mitigation programs, using both traditional and other (e.g. aerial survey) methods.
- The Commission also encourages involvement from Indigenous people in the development of park information relating to Indigenous culture and history. A report on *Aboriginal Cultural Interpretation Guidelines for the Northern Territory* has been produced.
- In 1998–99, the *Aboriginal Employment and Career Development Strategy* commenced.

Queensland

- The Queensland Government is developing legislation at present under the Commonwealth's *Native Title Act 1993* that may have some bearing on the way in which Indigenous affairs are approached by government departments. This is of particular importance to the QPWS as more than 140 of Queensland's national parks are subject to claims under the *Native Title Act 1993*, as at July 1999.

Mutawintji National Park: Integrating Indigenous ownership, nature conservation and recreational use

Mutawintji National Park (formerly Mootwingee) and the nearby Coturaundee Nature Reserve in far western New South Wales are one example of evolving tenure and management approaches that seek to balance and integrate nature conservation, Indigenous peoples' land rights and management, heritage protection and recreational use. Situated 130 km north-east of Broken Hill, Mutawintji National Park has in recent years attracted increasing numbers of campers, naturalists, bushwalkers and other visitors.

Protection of the area's Indigenous art sites, among the State's most significant, dates from 1927, and the 486 ha Mootwingee Historic Site was gazetted in 1967. The Park was gazetted in 1982 and covers 69 000 ha, including 47 600 ha of wilderness. Coturaundee Nature Reserve was established in 1979. As well as the key art sites, the Park contains dramatic scenery, geological sites, European historical associations, and diverse flora and fauna attracted by permanent waterholes in steep gorges. Significantly, the Park and Reserve support the sole New South Wales population of the Yellow-footed Rock-wallaby (*Petrogale xanthopus*), an endangered species numbering fewer than 200 individuals. Evidence of Indigenous occupation, ceremonial uses and use of the

area as an important meeting place has been dated to more than 8000 years before present.

Since 1983, the significance of the area to the Malyankapa and Pandjikali people has been recognised, and mechanisms established for joint management via the Mutawintji Local Aboriginal Land Council. Traditional owners continue to use the area for meetings and cultural purposes. In September 1998, the Park was handed back to the traditional owners by the New South Wales government and a Board of Management oversees the management of the Park.

Access within the Park is zoned carefully to balance protection and use. Intensive use areas exist for camping and walking, including disabled access to some gorge and art sites. Public use of the wilderness area is allowed but constrained by limited access. The Historic Site is a restricted zone, with public access only via guided tours under the control of the traditional owners. Management issues include feral animal and weed control, user impacts, protection of cultural heritage and protection of the Yellow-footed Rock-wallaby population. As the primary purpose of the Coturaundee Nature Reserve is the preservation of this species, no public access is allowed.

- In the QPWS, officers from individual regions engage in consultation on management expectations with Indigenous groups. Management expectations were developed in consultation with Indigenous people in Mount Moffatt (Carnarvon), Currawinya, Chesterton Range, Hell Hole Gorge and Moreton Bay and Islands in the Southern Region, Gumoo Woojabuddee Marine Park, Blackdown Tableland, Simpson Desert, Diamantina, Keppel Bay and Cape Hillsborough in the Central Region and Lawn Hill, Lizard Island, Cape Melville, Flinders Island, Lakefield, Cliff Islands and Mungkan Kandju in the Northern Region.
- Discussions have been initiated in 1999 for cooperative management with Ghungalu, Iman and Wadja claimant groups for Blackdown Tableland National Park.
- The QPWS trains Indigenous people in turtle biology.
- In 1998–99, a review was carried out of Indigenous involvement in the management of the Wet Tropics World Heritage Area, with a view to fostering more effective involvement. A report on the *Review of Aboriginal Involvement in the Management of the Wet Tropics World Heritage Area* was released in 1999 with many of the review recommendations able to be implemented immediately.
- In early 2001, the Wet Tropics Management Authority was in the process of appointing the High Level Negotiator recommended in the review. Discussions are still continuing, however, over issues such as native title and World Heritage management, traditional resource use and harvesting practices.

South Australia

- The first IPA was declared at Nantawarrina in South Australia in 1998. In June 2000, this initiative received the United Nations Global 500 Award for outstanding environmental achievement. There are now a total of four IPAs in South Australia (see *The Indigenous Protected Area Program* box on page 70).
- Joint management arrangements operate in Witjira National Park.
- A report on *Sustainable Resource Management Strategy for Aboriginal Managed Lands in South Australia* was prepared in 2000 to promote the sustainable management of

Indigenous freehold and leasehold lands and to support the priorities of Indigenous people in nature management.

Tasmania

- As of early 2001, there were five IPAs declared in Tasmania at Oyster and Risdon Coves, Preminghana and Mt Chappell and Clarke Islands. These are all Indigenous owned lands declared and managed by the landowners as IPAs.
- With the exception of the IPAs, most Indigenous involvement in the Tasmanian National Parks and Public Land Management Group of the DPIWE is concerned with cultural heritage conservation rather than nature conservation.
- Indigenous sites are protected and managed in consultation with the Tasmanian Aboriginal Land Council.
- Issues in Indigenous heritage are included in ranger training programs.

Victoria

- In 1998–99, Parks Victoria established an internal Indigenous Cultural Liaison Group to provide advice on Indigenous cultural heritage matters and to help develop cross-cultural awareness and training.
- A Memorandum of Understanding was signed with the Mildura Aboriginal Corporation over the management of Lindsay Island in the Murray-Sunset National Park.
- Liaison continues with the Yorta Yorta and Goulburn Clans Group over the management of the Dharnya Centre in Barmah Forest.
- Parks Victoria trains employees in working with Indigenous communities and in protecting Indigenous cultural heritage sites. Surveys of Indigenous cultural sites are undertaken with some surveys (e.g. Gabo Island) used in the preparation of management plans. Assessments are also made of the effect of fire on major Indigenous sites.
- In 1998–99, the Dreaming Theatre in the Brambuk Aboriginal Living Cultural Centre in the Grampians National Park was opened. This provides a venue to educate visitors about links between Indigenous people and the land, among other things.

Western Australia

- In August 2000, CALM announced a Draft Policy on Aboriginal Involvement in Nature Conservation and Land Management.
- The draft policy covers topics such as liaison and consultation, cooperative management, nature conservation on Indigenous land, management planning, Indigenous representation on advisory committees, employment and training, and legislative amendments to recognise Indigenous interests in CALM managed lands.
- In addition, the Western Australian RFA addresses the introduction of amendments to the *CALM Act 1984* to permit Indigenous peoples to undertake traditional and cultural activities including hunting, gathering and ceremonies on State forests and public land.
- CALM also maintains an Aboriginal Employment and Training Plan.

Indigenous employment in conservation agencies

Table 71 gives an indication of Indigenous employment in nature conservation in jurisdictions for which data were available for this report.

Table 71: State Conservation Agency employment of Indigenous peoples

State	Indigenous people employed 1998–99 (No.)	Indigenous employment as a proportion of total agency employment (%)
New South Wales (NPWS)	157	7.5
Queensland (Environment Protection Agency and QPWS)	NA	2.7
Tasmania (DPIWE)	18	1.1

Source: NSW NPWS 1999; Queensland Environment Protection Agency and Parks and Wildlife Service 1999; Tasmanian Department of Primary Industry, Water and Environment 1999.

Intellectual property rights

The establishment of intellectual property rights for Indigenous peoples is one area which would directly contribute to continuing and preserving the knowledge of Australia's Indigenous peoples. Further research is needed, however, on securing such rights and implementing workable practices. Some progress has been made on an ad hoc basis in the area of Australian bush foods (e.g. with the establishment of the Australian Native Bushfood Industry Committee). However, the issue of property rights could become much more important in terms of pharmaceutical products, where the monetary returns are much higher.

Addressing the issue of intellectual property rights for Indigenous Australians could have benefits not only for biodiversity conservation in Australia but also for Indigenous communities when their vast knowledge of native flora and fauna is used for commercial purposes. The Commonwealth government inquiry into access to biological resources (Voumard 2000) addressed issues of intellectual property rights for Indigenous peoples. As well, the Aboriginal and Torres Strait Islander Commission has established an Indigenous Cultural and Intellectual Property Taskforce.

The international dimension

This section reports on the following environmental indicator, which is defined in Saunders et al. (1998).

Environmental Indicator	
BD 26	Australia's international role in conservation

Australia's international obligations [BD Indicator 26]

As a wealthy, scientifically literate country with unusually high biodiversity, Australia arguably has both the responsibility of protecting its own biological heritage, and the capacity to assist other countries to protect theirs. Biodiversity management has many international dimensions.

Australia traditionally has been an active participant in international fora and agreements in the environment area. In some cases, there has been legislative expression of commitments under agreements, but in most cases fulfilment is pursued under policy initiatives. Recent decades have seen an increase in international instruments concerning the environment, to which Australia is a party. Table 72 identifies the principal ones, either those most directly relevant to biodiversity or which are major, overarching environmental instruments. As with domestic policy and law, however, there is a larger range of international agreements and

Table 72: Principle international agreements relevant to biodiversity conservation in Australia

Entry into force	Title, date, place of agreement
1948	International Convention for the Regulation of Whaling, 1946, Washington
1961	Antarctic Treaty, 1959, Washington
1975	Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 1971, Ramsar
1975	Convention for the Protection of World Cultural and Natural Heritage, 1972, Paris
1975	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973, Washington
1982	Convention on the Conservation of Antarctic Living Marine Resources, 1980, Canberra
1983	Convention on the Conservation of Migratory Species of Wild Animals, 1979, Bonn
1985	International Tropical Timber Agreement, 1983, Geneva
1993	Convention on biodiversity, 1992, Rio de Janeiro
1993	United Nations Convention to Combat Desertification in those Countries experiencing Serious Drought and/or Desertification, particularly in Africa, 1994, Paris
1994	United Nations Convention on the Law of the Sea, 1982, Montego Bay
1994	United Nations Framework Convention on Climate Change, 1992, New York

processes of relevance to biodiversity, whether directly or indirectly. In this Report, discussion is limited to Australia's core and recent activities under the principal agreements, and brief reference to other, selected agreements and processes. As a comparison, SoE (1996) contained an Appendix identifying the full range of international agreements.

Convention on Biodiversity

The primary international agreement is the CBD (United Nations CBD 1992b, vol. 31, 818–841). Article 6 of the Convention requires parties to:

- 1 Develop national strategies, plans or programs for the conservation and sustainable use of biodiversity or adapt for this purpose existing strategies, plans or programs which shall reflect, *inter alia*, the measures set out in this Convention relevant to the contracting party concerned
- 2 integrate, as far as possible and as appropriate, the conservation and sustainable use of biodiversity into relevant sectoral or cross-sectoral plans, programs and policies.

The development of the NSCABD and subsidiary policies, discussed elsewhere in this report, and the existence of the EPBC Act fulfil the obligation at (1) in the general sense. As with most international instruments, the obligations agreed to through treaty ratification are not stated in clearly defined terms or in a testable manner, and must be interpreted in each national context.

The degree to which detail and implementation of the obligation is sufficient will always be a subject of debate over the detail of domestic policy, and is covered elsewhere in this report. The obligation at (2), in most analyses, would be fulfilled only partially, a situation that would apply in any country. The nature of biodiversity issues makes cross-sectoral policy integration both a necessary and difficult long-term task. Integration is required across domestic policies and the range of international agreements (ANZECC 2001).

From an international perspective, Australia is seen to be active in the CBD through its support of the Subsidiary Body on Scientific, Technical and Technological Advice and by organising international conferences to help improve the scientific basis of the Convention. It is also well regarded for its support of sustainable natural resource management in partner countries. For example, Australia helps Pacific countries to participate in the CBD and AusAid has supported efforts of developing countries to alleviate their environmental problems. Australia also promotes the development of the information clearing-house mechanism of the CBD.

Australia participated in the development of the Cartagena Protocol on Biosafety under Article 19(3) of the CBD. As of January 2001, the Protocol has been ratified by 81 nations and signed by two. The Protocol deals with movements of 'living modified organisms' and Australia is exploring the inclusion of capacity building for corporations involved with biosafety issues.

Other obligations under the CBD include identification and monitoring of biodiversity, *in situ* and *ex situ* conservation efforts, management for sustainable use, public education and awareness, inclusion of biodiversity in impact assessment, access to genetic resources, transfer of technology, and information exchange and scientific cooperation. On international comparison, Australia has made significant progress against these requirements although, again, whether this progress is considered sufficient is contestable (see relevant issues and biodiversity indicators in this Report).

Other international conventions and agreements

The 1999 National Principles and Guidelines for Rangelands Management fulfils Australia's obligations under the Convention to Combat Desertification. However, compared to the NSCABD, this domestic policy is not detailed and does not substantially guide decision-making through either defined processes or goals.

The EPBC Act covers Australia's obligations under the Convention for the Protection of World Cultural and Natural Heritage. The Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) is expressed in Australia through the *Wildlife Protection (Regulation of Exports and Imports) Act 1982* (under review, see *Harvesting* on page 73).

The Antarctic Treaty System

Australia's international obligations with respect to the Antarctic environment are discharged primarily through the *Antarctic Treaty (Environment Protection) Act 1980* and the *Antarctic Living Marine Resources Conservation Act 1981*. Australia is an original signatory to the 1959 Antarctic Treaty and has long been influential in the Antarctic Treaty System, which provides a regime for managing activities on the Antarctic continent and in the vast surrounding Southern Ocean. The Protocol on Environmental Protection to the Antarctic Treaty was the direct result of an Australian initiative. The Protocol, which entered into force in 1998, provides comprehensive and legally binding rules to protect Antarctica's environmental values. Among other things, the Protocol requires prior assessment of the potential effects of all Antarctic activities, prohibits mining anywhere in Antarctica, regulates waste disposal and establishes a wide-ranging system of protected areas. Australia continues to provide leadership in protecting the Antarctic environment, including through the Protocol's Committee on Environmental Protection. In addition, Australia is a leading advocate within the Commission for the Conservation of Antarctic Marine Living Resources for scientifically based management and sustainable fishing in the Southern Ocean, including promotion of strong action to combat illegal, unreported and unregulated fishing for the highly valued Patagonian Toothfish.

The Ramsar Convention

Ramsar wetlands are listed under the EPBC Act as matters of 'national environmental significance'. The Ramsar Convention is an example of where international agreements may, over time, become dated or inadequate as a guide to standards of management. Although principles of 'wise use' have been developed in association with the Convention, the Convention itself may not properly reflect emerging ecological understanding and approaches to management (Farrier & Tucker 2000). This stems from the focus on wetlands rather than the total catchment, and on waterbirds rather than on the full suite of taxa dependent on wetlands. In part, such limitations are dealt with through domestic policy (e.g. catchment management and Commonwealth Wetlands Policy). But there is also need for constant evolution of approaches under international agreements and for coordination across agreements to reflect the more integrated definition and management demands of biodiversity.

The United Nations Framework Convention on Climate Change

Two international instruments and processes of apparently indirect relevance to biodiversity can be expected to assume great significance. The UNFCCC is likely to be a significant international instrument for biodiversity conservation in coming years, in two ways. First, the effects of climate change on Australia's biodiversity are expected to be significant, as discussed in the section on *Human-induced climate change* (page 96). Second, carbon sequestration and accounting, which are core to Australia's greenhouse policy response in the UNFCCC and the evolving Kyoto Protocol, have major biodiversity significance. Land clearing, as both a cause of greenhouse gas emissions and a policy response area, is a key threatening process for biodiversity.

The World Trade Organization

The WTO and related processes governing international trade are becoming more important to environment and biodiversity management. Relevant areas under WTO negotiations and emerging rules include biosafety concerns, the definition of environmental subsidies (which may conflict with free trade principles), certification of environmentally sound production methods and environmental regulation affecting trade between countries. These areas have been most explored in recent years in fisheries, especially concerning bycatch issues (Bache et al. 2000) but it may be some years before there are any positive environmental benefits from WTO discussions.

Bilateral and other non-global agreements

Australia is also party to more specific bilateral and other non-global agreements. The conservation of migratory birds is subject to the China–Australian and Japan–Australian migratory birds agreements (CAMBA and JAMBA). In the immediate region, the Convention on the Conservation of Nature in the South Pacific was made in Apia in 1976 and entered into force in 1990. The Convention for the Protection of the Natural Resources and

Environment of the South Pacific Region, which entered into force in 1990 and the Plant Protection Agreement for the Asia and Pacific Region (1956, amended 1979) also influence regional cooperation on biodiversity issues.

Australia has also been active in the 'Valdivia Group' of southern hemisphere countries who have common interests in biodiversity. This Group has addressed weed and pest species issues, and the protection of albatross under the Convention on the Conservation of Migratory Species.

Other international activities

In addition to specific agreements, Australia participates in various international processes and organisations. Recent activities in this area include:

- Australia is a member of the working group on criteria and indicators for the conservation and sustainable management of tropical and boreal forests. This is known as the Montreal Process and in 2003 Australia will contribute to a major international report on progress made in the implementation of these criteria and indicators.
- Australia is a signatory to the International Tropical Timber Agreement (ITTO) and supports activities under this, which has the primary objective of assuring that trade in tropical timbers is based on sustainable management practices.
- As a member of the International Whaling Commission and in line with Australia's policy of a permanent cessation of all commercial whaling, Australia co-sponsored with New Zealand an unsuccessful proposal for a South Pacific Whale Sanctuary at the Commission's meeting in Adelaide in 2000.
- Through Environment Australia, the Commonwealth supported regional NGO involvement in dialogues surrounding the Intergovernmental Forests Forum processes concerning underlying causes of deforestation and forest degradation in 1998 to 1999.
- AusAid is currently funding \$26 million of biodiversity-related projects in other countries, and Environment Australia and other Commonwealth agencies are supporting a range of projects under the CITES and Ramsar conventions and through the United Nations Global Environment Facility.

Overseas development aid has fallen globally in recent years and this has affected biodiversity-related aid as it has affected other areas of Australia's aid program. Agenda 21 defined a target of 0.7% of gross national product (GNP) as a target for developed countries to spend on aid, a target achieved by only four Scandinavian countries in the late 1990s. Australia's overseas aid spending had fallen below 0.3% of GNP by 1997.

The issue of the effect on biodiversity of Australian activities in other countries remains only partially resolved (ANZECC 2001). The EPBC Act places obligations on the Commonwealth in this regard. Some industry sectors have voluntary codes of practice which apply to environmental responsibilities of other countries, but generally these activities are viewed by Australian firms and governments as most appropriately the subject of the environmental regulations and practices of host countries. Industry codes and activities that influence the activities of Australian companies are discussed in *Plans to minimise impact of development: Corporations* (page 168).

State and territory involvement in international agreements

Although international agreements are an arena of Commonwealth power and responsibility, a cooperative approach has developed in recent years with the states and territories being involved in negotiation and implementation. In some cases, particular states or territories are more directly involved. For example, the Northern Territory provided the state representative for Australia to the Subsidiary Body on Scientific, Technical and Technological Advice under the CBD and the Oceania representative on the CITES Plants Committee (Darwin hosted the 1999 meeting of the Committee). The Northern Territory also has bilateral cooperative arrangements with the South African province of Kwa-Zulu Natal through a ranger exchange program, and with Indonesia in ethnobiology.

Meeting Australia's international responsibilities

As with domestic policy and law, whether or not Australia has fulfilled its stated or possible responsibilities under international agreements is a judgment that will vary according to the values and priorities of the observer. Outstanding issues that can be expected to be the subject

of public debate and, thus, are deserving of further monitoring, evaluation and future reporting include:

- Integration of biodiversity issues into other sectoral, domestic policy (e.g. regional development, trade, transport), as per Article 6(b) of the CBD.
- Coordination of activities and information relevant to different international instruments, as noted in the review of the NSCABD (ANZECC 2001).
- More explicit recognition is required of the relevance of the UNFCCC to biodiversity conservation. The UNFCCC and the evolving definition of the role that land use change will have in measuring, reporting on and controlling greenhouse gas emissions directly attends the most problematic threatening process operating in Australia: land clearing. There is a high likelihood that the UNFCCC Kyoto Protocol until 2010 will be a significant international arena of negotiation for biodiversity, rather than the CBD or other, apparently more directly relevant instruments.
- The treatment of environment and biodiversity issues in WTO negotiations and rule making. In particular, evolving clarification of issues of environmental subsidies and exemptions from free trade principles.
- Information on the activities in other countries of Australian public agencies and private firms that may affect biodiversity, and further development of guidelines and standards of practice.
- The degree to which the obligations or expectations under international agreements may be viewed as a sufficient standard against which Australia's activities should be judged, or a basic benchmark that should be exceeded.

In many cases, enhanced public discussion and a clearer definition of expectations would inform the current debate over Australia's international role and performance in conserving biodiversity.