

Forestry and Fishing

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FORESTRY

Forests are an important sustainable national resource providing a wide range of indispensable products and benefits to the community.

The cover of forest vegetation protects the soil from water and wind erosion, reduces flooding and siltation of water storages and maintains the quality of water. Forests provide habitat for a variety of native animals and plants.

Native and plantation forests contribute substantially to Australia's economic performance especially to employment in rural areas. Forests also represent valuable ecosystems providing a gene pool of great diversity for scientific investigation; a source of honey, oils, gums, resins and medicines; and a resource base for education, tourism and recreation and other purposes. Not all forests are necessarily suitable for all types of uses at the same time, yet careful management will ensure that the forests provide multiple

benefits in the long term for the Australian community.

Existing forest estate

Native forest

Native forest is defined as land dominated by trees with an existing or potential mature height of twenty metres or more, including native stands of cypress pine in commercial use regardless of height. The total area of native forest was estimated at 41 million hectares as at 30 June 1990.

Of the 41 million hectares, 6.2 million hectares (15%) are in national parks or on the World Heritage List, 10.9 million hectares (27%) of native forest are on private land, and 30 million hectares (73%) are publicly owned, of which 11.9 million hectares are managed by State forest authorities for various uses, including wood production. A small but increasing area is covered by plantations — 950,000 hectares of mostly radiata pine and 91,000 hectares of hardwood plantations.

NATIVE FOREST AREAS: BY FOREST TYPE AND OWNERSHIP, AT 30 JUNE 1990
(*000 hectares)

Item	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Total
CLASSIFIED BY FOREST TYPE GROUP									
Rainforest	265	16	1,237	—	—	605	38	—	2,161
Eucalypt productivity									
Class I(a)	1,163	521	205	—	181	459	—	—	2,529
Eucalypt productivity									
Class II(a)	3,661	4,427	1,290	—	2,503	1,868	—	—	13,749
Eucalypt productivity									
Class III(a)	7,937	397	3,300	—	—	—	—	51	11,685
Tropical eucalypt and paperbark(b)	—	—	4,078	—	—	—	2,450	—	6,528
Cypress pine	1,696	7	1,686	—	—	—	778	—	4,167
Total	14,722	5,368	11,796	—	2,684	2,932	3,266	51	40,819
CLASSIFIED BY OWNERSHIP									
Public ownership	9,529	4,763	10,304	—	2,187	2,073	839	51	29,746
Category 1	3,238	3,132	3,182	—	1,792	1,042	—	—	12,386
Category 2	(c)3,800	—	6,412	—	51	461	524	—	11,248
Category 3	(c)2,491	1,631	(d)710	—	344	570	315	51	6,112
Private ownership	5,193	605	1,492	—	497	859	2,427	—	11,073
Total	14,722	5,368	11,796	—	2,684	2,932	3,266	51	40,819

(a) Eucalypt forests are grouped into productivity classes in descending order of productivity. No specific indexes of productivity have been developed for these classes and there can be some overlap, especially between States, in the relative productivity levels used to assign particular forest types to productivity classes. (b) Includes tropical eucalypt and paperbark species not in commercial use. (c) Water supply reserves previously recorded in Category 2 are now included in Category 3 (220,000 ha). (d) Includes 101,500 ha in World Heritage Area previously in Category 1.

NOTE: Public category 1: Forest land managed for multiple use including wood production. Public 2: Crown land either vacant or occupied under lease on which wood harvesting is carried out under government control but is not reserved and managed for that purpose. Public 3: Land on which wood production is excluded (National Parks etc.).

Source: State and Territory Forest Authorities.

Plantations

Commonwealth Government programs have supported the expansion of Australia's plantation resource base for many years. \$15 million has recently been provided through the National Afforestation Program to stimulate investment by the States and the private sector in broadacre planting of hardwood trees, as well as substantial support for applied research into species selection and management techniques. This program has led to the establishment of more than 13,500 hectares of hardwoods over the last three years, a doubling of the establishment rate prior to the program's implementation.

The Commonwealth Government established the National Plantations Advisory Committee to report on strategies designed to foster the development of Australia's plantations resource base and promote commercially viable plantation development. The Committee is a broadly based group including representatives of industry, the conservation movement, unions, the National Farmers Federation and State and local governments.

An increased interest in the establishment of eucalypt plantations is evident, particularly in Tasmania. The following table shows total plantation areas in Australia classified by species.

PLANTATION AREAS CLASSIFIED BY SPECIES, 31 MARCH 1990
(hectares)

Species group	NSW(a)	Vic.	Qld	SA	WA	Tas.	NT(b)	ACT	Aust.
PUBLIC AND PRIVATE OWNERSHIP									
Coniferous									
Pinus radiata	253,670	205,685	3,241	94,545	55,954	71,786	—	14,052	698,933
Pinus elliottii	5,263	8	(c)82,385	—	(d)289	—	—	—	87,945
Pinus pinaster	—	1,361	—	3,119	28,579	—	—	—	33,059
Pinus caribaea	2,786	3	51,144	—	—	—	2,386	—	56,319
Araucaria species	1,641	—	45,254	—	—	—	—	—	46,895
Other	6,313	2,547	8,120	383	675	334	1,801	514	20,687
Total	269,673	209,604	190,144	98,047	85,497	72,120	4,187	14,566	943,838
Broadleaved									
Eucalyptus species	26,331	17,326	1,559	1,381	18,979	25,919	—	—	91,495
Populus species	1,751	222	—	—	—	—	—	—	1,973
Other	38	43	220	—	—	2,700	—	—	3,001
Total	28,120	17,591	1,779	1,381	18,979	28,619	—	—	96,469
Total	297,793	227,195	191,923	99,428	104,476	100,739	4,187	14,566	1,040,307

(a) Other conifers on private lands include *P. caribaea*. An area of 13,101 ha of *P. radiata* plantation was transferred from private ownership by land purchase by the NSW Forestry Commission. (b) Since 31 March 1986, plantations on aboriginal land have been transferred to private ownership and publicly owned plantations are no longer managed for wood production. (c) Includes APM resource, which is being liquidated. (d) Includes *P. caribaea*.

Source: State and Territory Forest Authorities.

Timber and timber products

The woodchip export industry uses timber which is unsuitable for sawmilling and not required by the Australian pulp, paper and reconstituted board industries. Before the advent of the woodchip export industry much of this material was left standing in the forest after logging. Considerable quantities of

sawmill waste material, which would otherwise be burnt, are also chipped for local pulpwood-using industries and for export. Until recently, at least 95 per cent of woodchips exported from Australia have been eucalypt but increasing quantities of softwood woodchips are now becoming available from pine plantations.

MANUFACTURING ESTABLISHMENTS(a): SUMMARY OF OPERATIONS, 1988-89

1983 ASIC(b) code	Industry description	Establish- ments at 30 June	Employment at 30 June(c)	Wages and salaries(d)	Turnover
		no.	'000	\$m	\$m
2531	Log sawmilling	588	12.1	236.7	1,124.8
2533	Veneers and manufactured boards of wood	74	5.4	136.2	811.9
2537	Hardwood wood chips	9	0.8	27.4	365.6

(a) All manufacturing establishments owned by multi-establishment enterprises and single establishment enterprises with four or more persons employed. (b) Australian Standard Industrial Classification. (c) Includes working proprietors. (d) Excludes the drawings of working proprietors.

Source: *Manufacturing Industry: Summary of Operations, Australia (8202.0)*.

PRODUCTION OF TIMBER AND SELECTED TIMBER PRODUCTS(a)

Item		1987-88	1988-89	1989-90	1990-91
Sawn Australian grown timber(b)	'000 cu m	3,083	3,225	3,172	n.y.a.
Woodchips (green weight)					
Hardwood (broad leaved)	'000 tonnes	n.a.	n.a.	5,113	4,926
Softwood	'000 tonnes	n.a.	n.a.	718	770
Particle board(c)	'000 cu m	n.a.	n.a.	768	625
Wood pulp					
Mechanical	'000 cu m	414,297	438,775	430,665	428,464
Other	'000 cu m	580,192	597,160	599,711	593,374
Paper and paperboard					
Newsprint	tonne	401,066	401,269	383,657	394,990
Tissue and sanitary papers	tonne	n.p.	n.p.	163,072	137,478
Graphic	tonne	n.a.	n.a.	648,293	n.y.a.
Other paper and paperboard	tonne	n.a.	n.a.	793,116	n.y.a.

(a) Excludes production of small single establishment enterprises with fewer than four persons employed and establishments engaged in non-manufacturing activities but which may carry on, in a minor way, some manufacturing. (b) Source: Australian Bureau of Agricultural and Resource Economics. (c) Particle boards and similar boards of wood or other ligneous material. Excludes laminated.

Source: *Manufacturing Production, Australia: Building Materials and Fittings (8361.0)* and *Manufacturing Production, Australia: Wood and Wood Products (8369.0)*.

Government administration

Land management is primarily the responsibility of State and Territory Governments. Each State has a forest authority responsible for the management and control of publicly-owned forests, in accordance with the Forestry Acts and Regulations of the State or Territory concerned.

The Department of Primary Industries and Energy is responsible for forest matters at the national level. Its main responsibilities are the development of a national approach to forest management; providing advice to the Commonwealth Minister responsible for forest matters; administration of export licensing responsibilities in relation to unprocessed timber; liaison with State, national and international organisations concerned with

forestry; provision of a Secretariat for the Australian Forestry Council; and management of policy and program initiatives.

The Australian Forestry Council (AFC) consists of State, Territory and Commonwealth and New Zealand Ministers responsible for forestry. The Commonwealth Minister for Resources is the chairman of the Council. Since its formation in 1964, the Council has worked to provide leadership and facilitated cooperation at the national level.

Initiatives fostered by the AFC are aimed at promoting the enhanced management of the nation's forest resource in the general interest of the community. Most recently it has made submissions to the Resource Assessment Commission; assisted in the development of the National Forest Inventory and in reviews

of natural resource management policies and programs and of the national forest strategy; the development of national principles of forest practices, and preparation of policy papers on the use of herbicides and chemicals in forestry.

Commonwealth government initiatives

The Government has indicated a commitment to securing the future of both the forests and the forests industry and is developing a policy which will bring together:

- the findings of the Resource Assessment Commission (RAC) inquiry and the Ecologically Sustainable Development (ESD) Working Group on Forest Use;
- the outcomes of the National Plantations Advisory Committee and the forest conservation and development process; and
- the other initiatives described below.

The policy will be developed in consultation with the States, industry, unions and community interest groups, including the conservation movement. The key objectives of a National Forests Policy will be to:

- maximise the long-term community benefits from all forest values;
- protect forest ecological and cultural values;
- provide stability in resource access;
- facilitate the highest value added processing of forest products;
- remove any impediments to plantation development as a basis for long-term industry development and expansion;
- achieve ecologically sustainable forest management; and
- encourage increased research and development in the forests sector.

This national policy will establish a strategy which will assist governments to resolve competing claims for the allocation of forest resources among various forest uses.

One billion trees

By the year 2000 the Government hopes to have a billion more trees planted and growing. This will entail:

- a Community Tree Planting Program to plant over 400 million trees; and

- a Natural Regeneration and Direct Seeding Program to establish over 600 million trees in open areas of Australia.

Greening Australia, a non-profit community organisation, administers the National Tree Program.

National forests inventory

In many of the debates over forest management, the information base on forest attributes, such as timber, fauna and flora, has been found to be incomplete. Accordingly the Government has initiated a National Forest Inventory (NFI). During its current three year term, the NFI is establishing a sound working basis for the exchange and sharing of forest resource information nationally, a national forest cover information system and priority regional databases.

A comprehensive information base will lead to more informed discussion and decision making about the future of our forests by identifying and describing forest communities and their current conservation status, and providing the basic wood production resource information to enable the planning of efficient sustainable forest utilisation.

Forest conservation and development process

A Forest Conservation and Development Process was announced by the Prime Minister in the Government's Industry Statement on 12 March 1991 and endorsed by the Special Premiers Conference on 30 July 1991. The objectives of the process are to:

- ensure that the environmental and heritage values of Australia's forests are adequately protected;
- facilitate investment in the manufacture of pulp and paper, and other value added products for domestic use and export by providing legislative resource security for wood processing projects involving an investment of at least \$100 million; and
- generate employment.

The legislation will enable the Commonwealth to apply its existing powers once and for all in a joint Commonwealth-State assessment of the environmental, heritage, and economic impacts of each proposed project.

The assessment process will identify in advance of a project proceeding, forest areas

which should be reserved for conservation and those which should remain available for multiple uses, including wood production. In this way, forest areas of high conservation value will be identified and protected while industry is provided with secure access to forest resources. This will enable industry to invest in value adding projects with confidence that governments will not act to remove resource from a project at a later date.

Provided the integrated assessment meets the requirements of the respective governments, agreements will then be made between the Commonwealth and the relevant State Government, and between the State Government and the enterprise.

Ecologically Sustainable Development

Ecologically Sustainable Development (ESD) means using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.

The ESD Group on Forest Use released its report on a strategy for sustainable forest use in December 1991.

Forests need to be managed to ensure that all forest uses continue to be available for current and future generations. This will involve optimising the environmental, social and economic benefits which forests can provide to the community.

The report addresses a broad range of issues which influence how our forests are used and managed, including:

- how the forests should be managed for all their values;
- how to optimise community benefits from access to our forests; and
- whether new institutional arrangements need to be introduced (e.g., the arrangements for access to Australia's forests).

Resource Assessment Commission Inquiry

The Resource Assessment Commission (RAC) was established by the Commonwealth Government in 1989 to inquire into and to make recommendations to the Government on, contentious land use issues. The RAC has been conducting a public inquiry into the use of Australia's forest and timber resources and

was required to present its report to the Government by 30 November 1991.

As well as investigating the full range of forest uses, including timber production and the maintenance of environmental and biological values, the RAC is examining broad issues which affect the way in which forests are used and managed. These include:

- the arrangements governing the administration and management of forests;
- the taxation treatment of forest-based industries;
- the pricing of forest resources; and
- the returns to the community from the use of forests.

Tropical forests

Over half of the world's known plant and animal species are found in rainforests. Rainforests are the traditional home of many tribal peoples and also play an important role in contributing to global climatic stability. However, destruction of tropical forests in developing countries is occurring because of activities largely associated with population pressures and poverty. The clearing of land for agricultural purposes and inadequate or inappropriate forestry management practices are major concerns.

As a developed country which has already taken measures to conserve its own remaining tropical forests, Australia can make a positive contribution to the improvement of forest management practices in developing countries, by providing education, training and technical expertise.

Australia has been actively involved in contributing funds and technical expertise on the management of the remaining tropical forest projects in Sarawak and Papua New Guinea and is also involved in promoting better forestry management practices in the Asia-Pacific region.

Pulp mill guidelines

The Commonwealth has established environmental guidelines for the development of new bleached eucalypt kraft pulp mills. Together with the Forest Conservation and Development Process the guidelines will improve the climate for investment in pulp mills in Australia. These guidelines are probably the most stringent in the world. The proponent of a new pulp mill will be required to:

- prepare an environmental impact statement (EIS) for joint assessment by Commonwealth and State authorities;
- undertake comprehensive baseline environmental studies of the project site and surrounding areas of potential impact;
- monitor compliance with minimum emission standards determined by government authorities as a result of assessment of the EIS and baseline studies; and
- provide public reports on environmental performance.

Agreements with the States will integrate Commonwealth and State environmental assessment processes and ensure the application of stringent Commonwealth environmental standards.

Research

A Forest and Forest Industries Research and Development Corporation has been proposed to coordinate national industry research and development programs to assist our forest and forest products industries to retain and enhance their international competitiveness; improve their potential to produce high value timber-based products; and implement new, more environmentally acceptable processes.

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

CSIRO forestry research is conducted primarily within the Division of Forestry and the Division of Forest Products. The emphasis is on strategic research concerned with the commercial production and processing of wood from both native eucalypt forests and plantations of eucalypts and softwoods.

The Division of Forestry is centred in Canberra with stations in Hobart, Mount Gambier and Perth. The Cooperative Research Centre for Temperate Hardwood Forestry is co-located with the Division in Hobart. The Division of Forest Products is based at Clayton, Melbourne.

Research is conducted in programs which are closely aligned to major forest resources and industry sectors: Softwood Plantations, Hardwood Plantations, Regrowth Forest Management, Australian Tree Resources, Fibres and Chemicals and Wood Science and Technology. Prominent academic disciplines are tree physiology, nutrition, genetics, chemistry and engineering.

Australia's trade deficit in forest products is \$1.8 billion per year; reducing this deficit is a major target of governments, industry and research. Sustained high production has long been a major goal of forestry research and eucalypt plantations and regrowth of better native eucalypt forests are a focus of attention. Both types of forest will be important to meet national needs for pulp and paper. CSIRO scientists have contributed to the formulation of guidelines for new bleached kraft eucalypt pulp mills.

FISHING

Fisheries resources

Australia's fisheries stocks are extremely diverse but, by world standards, its marine ecosystem is relatively unproductive. The Australian Fishing Zone covers an area 16 per cent larger than the Australian land mass and is the third largest fishing zone in the world. However, Australia's fish production is insignificant by world standards. This reflects low productivity of the oceans rather than under-exploitation of the resource.

Over 3,000 species of marine and freshwater fish occur in and around Australia and at least an equal number of crustacean and mollusc species. Despite this, less than 100 of these are commercially exploited. Australia's major commercially exploited species are prawns, rock lobster, abalone, tuna, other fin fish, scallops, oysters and pearls. Australian fishing operators concentrate their efforts on estuarine, coastal, pelagic (surface) species and demersal (bottom living) species that occur on the continental shelf.

Australia has enjoyed a relatively long history of success in the farming of the Sydney rock oyster. Pearl culture operations and goldfish farming are well established. The production of juveniles of several species of fin fish, molluscs and crustaceans has been undertaken for some years, initially for restocking wild populations and subsequently for grow-out operations. As in many other developed countries, there has been a surge of interest and investment in many types of aquatic farms over the last decade. Notable successes are the salmonid industry in Tasmania, consisting of about 25 farms, and commercial cultivation of the Pacific oyster, blue mussel and rainbow trout.

Developmental work is active in a number of areas such as barramundi, freshwater crayfish (yabbies and marron), prawns, mussels and algae. Research is continuing into the hatchery rearing of species such as abalone, scallops, giant clams, flat and pearl oysters.

Whales are a protected species in the Australian Fishing Zone.

Production, processing and exports and imports of fisheries products

Value of fisheries production

The following table shows the gross value of the Australian commercial fishing industry. As

the value of materials used in the course of production is not available, it is not possible to show net values. Gross value of production is the value placed on recorded production at the wholesale price realised in the principal markets. In general, the principal markets are the metropolitan markets in each State, although, in cases where commodities are consumed locally or where they become raw material for a secondary industry, these points are presumed to be the principal markets.

GROSS VALUE OF FISHERIES PRODUCTION (\$ million)

<i>Period</i>	<i>Value</i>	<i>Period</i>	<i>Value</i>
1973-74	109	1982-83(a)	423
1974-75	108	1983-84(a)	449
1975-76	146	1984-85(a)	522
1976-77	206	1985-86(a)	635
1977-78	233	1986-87(a)	702
1978-79	279	1987-88(a)	828
1979-80	326	1988-89(a)	1,022
1980-81(a)	330	1989-90(a)	1,089
1981-82(a)	344	1990-91(a)	1,170

(a) Estimates provided by the Australian Bureau of Agricultural and Resource Economics and the Australian Fisheries Service.

GROSS VALUE OF SELECTED MAJOR FISHERIES CATEGORIES (\$ million)

	<i>1987-88</i>	<i>1988-89</i>	<i>1989-90</i>	<i>p1990-91</i>
Prawns	246	285	239	285
Rock lobster	252	282	245	271
Tuna	19	19	66	58
Other fin fish(a)	157	197	252	254
Abalone	96	86	91	84
Scallops	22	21	27	37
Oysters	36	41	35	34
Pearls	n.a.	65	96	103
Other(b)	n.a.	26	38	44
Total	828	1,022	1,089	1,170

(a) For human consumption (excludes aquaculture). (b) Other aquaculture not elsewhere included.

Source: Australian Bureau of Agricultural and Resource Economics.

Processing of fish, crustaceans and molluscs

There is very little value added processing of fish products in Australia. Processing establishments vary in size, scope of operations and sophistication of technologies employed. The majority of establishments undertake only the most basic cleaning,

filleting, packing and freezing processes, but others have the capacity for significant product transformation.

Fish, crustaceans and molluscs intended for export are processed in establishments registered under the Export (Fish) Regulations. Edible fish for local consumption is mainly dispatched fresh-chilled to markets.

DESTINATION OF AUSTRALIAN FISHERIES EXPORTS

Destination	1988-89		1989-90	
	Value of exports (\$ million)	Proportion of total	Value of exports (\$ million)	Proportion of total
Japan	339.1	60.0	272.0	43.8
USA	79.4	14.1	168.4	27.1
Taiwan	41.4	7.3	54.8	8.8
Hong Kong	49.4	8.7	48.1	7.7
Spain	16.4	2.9	29.3	4.7
Singapore	15.0	2.7	22.8	3.7
Korea, Republic of	2.1	0.4	3.7	0.6
Italy	7.1	1.3	3.5	0.6
New Zealand	2.2	0.4	2.8	0.5
France	2.0	0.4	2.8	0.5
Other	10.8	1.9	13.1	2.1
Total	564.9	100.0	621.3	100.0

Source: Unpublished ABS Foreign Trade Statistics.

Exports and imports

Exports of fisheries products comes under Commonwealth jurisdiction, while domestic market activity comes under that of the corresponding State or Territory.

Although a substantial proportion of the Australian salmon, and to a lesser extent tuna catches are canned, the greater part of Australian fish production is marketed fresh-chilled.

A high proportion of Australian seafood production is exported and domestic prices increasingly reflect the conditions on export markets. The Australian fisheries export industry depends on a limited range of products sold on a few major markets, with Japan and the United States accounting for about 70 per cent of the value of our exports for 1989-90.

SOURCE OF AUSTRALIAN IMPORTS OF FISH PRODUCTS

	1988-89		1989-90	
	Volume (tonnes)	(\$ million)	Volume (tonnes)	(\$ million)
Thailand	14,404	68.0	14,674	67.8
New Zealand	14,778	62.2	14,111	58.9
Canada	5,749	48.1	5,079	38.9
Malaysia	4,300	31.0	3,897	27.0
USA	4,775	30.3	4,875	26.7
Japan	3,708	17.3	5,235	24.4
Korea, Republic of	4,404	20.9	2,759	15.2
Chile	3,064	8.7	4,631	12.3
United Kingdom	2,009	10.5	3,075	10.2
Other	29,280	115.9	33,588	132.9
Total	86,471	412.9	91,924	414.3

Source: Unpublished ABS Foreign Trade Statistics.

Fisheries legislation and territorial arrangements

The Commonwealth Parliament has enacted a number of laws dealing with fisheries in Australian waters beyond territorial limits, and

has fishing agreements and arrangements with a number of other countries.

The fisheries laws of the States and the Northern Territory apply to all kinds of fishing within the territorial sea and inland waters. These laws require the licensing of persons and boats

in the commercial fisheries and provide a range of other regulatory powers.

The Australian Fishing Zone and foreign fishing

Establishment of a 200 nautical mile Australian Fishing Zone (AFZ) in 1979 covering a total of 8.9 million square kilometres, brought portions of oceanic tuna stocks, and demersal and pelagic fish stocks previously exploited by foreign fishing vessels, under Australian control.

Australia has an international obligation under the Law of the Sea Convention, to allow foreign nations access to resources within the AFZ that are surplus to domestic fisheries requirements and where such access does not conflict with Australian management and development objectives.

Licensed vessels from Japan, Thailand, Taiwan and Norway are currently permitted to operate in Australian waters either under bilateral agreements or joint venture arrangements with foreign governments or fishing companies/organisations.

Following the introduction of controls on the length of gillnets which can be used, foreign pelagic gillnet operations have ceased. Japan is permitted, under agreement, to long line, principally for tunas, off certain areas of Australia. Four Norwegian freezer trawlers currently operate in deeper waters of the AFZ under joint venture arrangements with Australian companies.

In February 1990 the Governments of Australia and the Soviet Union signed a fisheries cooperation agreement which provides a framework with which feasibility fishing might take place under a subsidiary agreement. The agreement also establishes principles under which port access by Soviet trawlers for repairs, revictualing, refuelling and landing of catch might be authorised.

Fisheries Act 1952

This Act applies to commercial fishing for swimming species by Australians in waters extending from 3 to 200 nautical miles seaward of the territorial sea baseline of Australia and external territories excluding the territorial sea of another country, and by foreign boats in the 200 nautical mile AFZ. The AFZ extends 200 nautical miles seaward of the territorial sea baseline of Australia and

the external Territories but does not include waters adjacent to Australia's Antarctic Territory or waters exempted from the AFZ by proclamation under section 7A of the Act.

Australia has made maritime delimitation agreements with Indonesia, Papua New Guinea, the Solomon Islands and France. Australia has yet to make a marine delimitation with New Zealand. There are proclamations in force under section 7A of the Act for all overlappings of the AFZ with neighbours' exclusive fishing zones, whether or not Australia has made a delimitation agreement with the country concerned.

This Act requires the holding of licences and empowers the Minister to prohibit fishing activities as necessary for the conservation of resources and the management of the fisheries. The Fisheries Act authorises the publication of management plans having the force of law in relation to particular fisheries.

Refer to *Year Book Australia 1990* for a detailed account of the following Acts: *Continental Shelf (Living Natural Resources) Act 1968*; *Torres Strait Fisheries Act 1984*; *Foreign Fishing Boats Levy Act 1981*; *Fisheries Agreements (Payments) Act 1981*; and *Fisheries Levy Act 1984*.

Research

The main aim of fisheries research in Australia is to provide a background of biological, technical and economic information which will provide guidance for the efficient and sustainable utilisation of fisheries resources. To this end much of the research already undertaken has been directed at formulating recommendations for management of various fisheries. Research work, including feasibility fishing projects involving foreign fishing vessels, is also carried out and is expected to lead to the development of new fisheries, the expansion of under-exploited fisheries, greater economy in operations and the use of more efficient equipment and methods.

The Fisheries Development Trust Account (established under the *Fishing Industry Act 1956*) and the *Fishing Industry Research and Development Trust Fund* (established under the *Fishing Industry Research and Development Act 1987*) are available to support, financially, projects for the development and management of the fisheries and fishing industry which are consistent with the purposes of those Acts. The

former was established with the proceeds of the sale of the assets of the Australian Whaling Commission and is funded by annual Commonwealth appropriation. The latter is a matching fund into which is paid each year an appropriation from Commonwealth government revenue. Total Commonwealth funds are linked to amounts collected from the fishing industry by the State Fisheries Authorities and paid into appropriate State research accounts for the same purpose.

Organisations in Australia at present engaged in research into fisheries matters are:

- CSIRO Division of Fisheries Research, which has its headquarters and main laboratory at Hobart, Tasmania, and regional laboratories in Western Australia and Queensland (fisheries science);
- CSIRO Division of Oceanography, which has its headquarters and laboratory at Hobart, Tasmania;
- CSIRO Division of Food Research, conducts research into handling, storage, processing and transportation of fish at its laboratory in Hobart, Tasmania;
- The Australian Fisheries Service, Department of Primary Industries and Energy, Canberra;
- Bureau of Rural Resources, Department of Primary Industries and Energy, Canberra;
- Australian Bureau of Agricultural and Resource Economics, Department of Primary Industries and Energy, Canberra;
- State fisheries departments (research vessels are operated by all States);
- Great Barrier Reef Marine Park Authority (GBRMPA) located in Townsville and Canberra universities; and
- Private fishing companies (surveys of fisheries resources, research into handling, processing and marketing).

BIBLIOGRAPHY

ABS Publications

There are no ABS publications devoted to forestry and fishery statistics for Australia as a whole, although there are some State based publications. Forestry and fishery statistics are available in publications on broader subjects or in unpublished ABS data, which can be obtained on request.

Manufacturing Industry: Summary of Operations, Australia (8202.0)

Manufacturing Production, Australia: Building Materials and Fittings (8361.0)

Manufacturing Production, Australia: Wood and Wood Products (8369.0)

Other Publications

AUSTRALIAN BUREAU OF AGRICULTURAL AND RESOURCE ECONOMICS. *Agriculture and Resources Quarterly (various issues)*

AUSTRALIAN BUREAU OF AGRICULTURAL AND RESOURCE ECONOMICS. *Commodity Statistical Bulletin (December, 1990)*

DEPARTMENT OF PRIMARY INDUSTRIES AND ENERGY. AUSTRALIAN FISHERIES SERVICE, *Australian Fisheries*

ECOLOGICALLY SUSTAINABLE DEVELOPMENT WORKING GROUPS. *Final Report. Fisheries. (November 1991)*

FOR MORE INFORMATION

The ABS has a far wider range of information on Australia than that contained in the *Year Book*. Information is available in the form of regular publications, electronic data services, special tables and from investigations of published and unpublished data.

For further information contact ABS Information Services at one of the addresses listed on the page facing the Introduction to the *Year Book*.
