

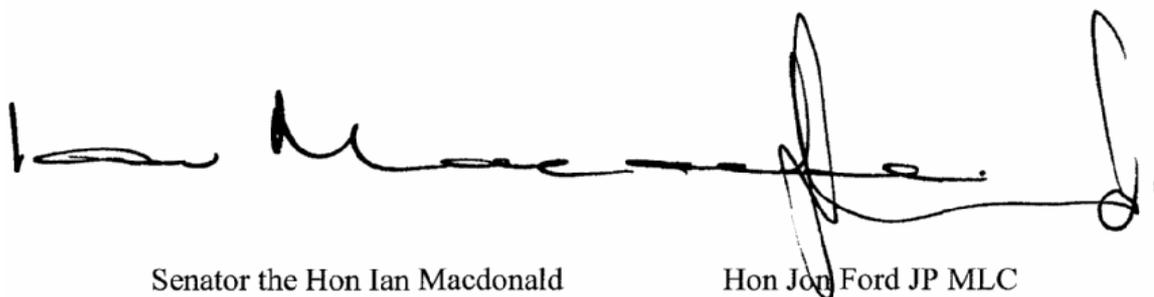
FISHERIES MANAGEMENT ACT 1991

FISH RESOURCES MANAGEMENT ACT 1994

**ANNUAL REPORT FROM THE WESTERN
AUSTRALIAN
FISHERIES JOINT AUTHORITY
1 JULY 2002 TO 30 JUNE 2003**

Presented to the Commonwealth Parliament pursuant to section 70 of the *Fisheries Management Act 1991*.

Presented to the Western Australian Parliament pursuant to section 21 of the *Fish Resources Management Act 1994*.

A large, stylized handwritten signature in black ink, spanning across the two columns of text below. The signature appears to be a combination of the names of the two individuals listed below it.

Senator the Hon Ian Macdonald
COMMONWEALTH
MINISTER FOR FISHERIES,
FORESTRY AND
CONSERVATION

Hon Jon Ford JP MLC
MINISTER FOR FISHERIES;
the KIMBERLEY, PILBARA AND
GASCOYNE

1. INTRODUCTION

This is the sixteenth report of the Western Australian Fisheries Joint Authority (WAFJA).

The WAFJA was established under provisions of the Commonwealth *Fisheries Act 1952* (now replaced by the *Fisheries Management Act 1991*) and the Western Australian *Fisheries Act 1905* (now replaced by the *Fish Resources Management Act 1994*).

In accordance with Offshore Constitutional Settlement arrangements (OCS) of 1988, the WAFJA has been responsible for the management of the Joint Authority Southern Demersal Gillnet and Demersal Longline Managed Fishery (JASDGDLMF) in waters south of 33° south latitude to the South Australian border since 14 April 1988 (see Appendix 1).

Following the 1995 OCS agreement, the WAFJA was also given responsibility for the management of the Joint Authority Northern Shark Fishery (JANSF), which includes waters of the Australian Fishing Zone north of 17° south latitude, between 123°45' east longitude and the Northern Territory border (129° east longitude) (Appendix 2).

Routine administration of fisheries under WAFJA jurisdiction is carried out by the Department of Fisheries (WA) and the Australian Fisheries Management Authority (AFMA) under Western Australian fisheries law.

This report details the activities of the WAFJA in managing the above two fisheries and the condition of the fisheries under WAFJA jurisdiction during the period 1 July 2002 to 30 June 2003.

The contact officer for enquiries about this report is Mr Peter Millington, Director Fisheries Management Services, Department of Fisheries, 3rd Floor, The Atrium, 168 St Georges Tce, Perth, WA, 6000.

2. MEMBERSHIP OF THE WAFJA

The members of the WAFJA during the reporting period were: -

For the period 1 July 2002 to 30 June 2003
Senator the Hon Ian Macdonald
Commonwealth Minister for Fisheries, Forestry and Conservation

For the period 1 July 2002 to 30 June 2003
Hon Kim Chance MLC
Western Australian Minister for Agriculture, Forestry and Fisheries

3. RELEVANT LEGISLATION OF THE JOINT AUTHORITY

Sections 61-70 of the *Fisheries Management Act 1991* set out the establishment, functions, administration and reporting requirements of the Joint Authority.

Sections 15-21 and sections 24-28 of the Western Australian *Fish Resources Management Act 1994* sets out complementary State legislation relating to the establishment, functions, administration and reporting requirements of the Joint Authority.

4. GENERAL STATE LEGISLATION RELEVANT TO FISHERIES UNDER WAFJA JURISDICTION

A prohibition on the use of hooks attached to rock lobster pots and float lines, boat mooring lines and anchor lines was introduced in November 2002 and applies to all persons fishing in Western Australian waters. This was introduced to restrict some rock lobster fishers and wetliners from what is essentially droplining for large whalers for their fins.

In an attempt to prevent increased targeting of sharks purely for the value of their fins and due to the widespread public opposition to the practice, at sea finning and discarding of trunks was prohibited in all Western Australian waters in October 2000. All Western Australian licensed fishers are now obliged under the *Fish Resources Management Regulations 1995* to land either whole sharks, with fins attached or to land an equal number of shark trunks and sets of fins.

The *Net Hauling Restriction Notice 1991* was gazetted by Western Australia in April 1991. This Notice prevents those persons not endorsed from using any powered device for hauling a fishing net in the waters of the Indian Ocean, Southern Ocean and the Timor Sea.

Specific subsidiary legislation relating to the JASDGLMF and the JANSF are detailed in parts 8(f) and 9(f) of this report respectively.

5. MEETINGS AND ACTIVITIES

The WAFJA usually convenes one meeting per year, which coincides with the Northern Australia Fisheries Management Workshop. During 2002-03 one meeting of the WAFJA took place on 18 September 2002. At this meeting matters relevant to the current and future management of the JANSF was discussed. While no specific resolutions were reached at the meeting, the Department of Fisheries (WA) advised the WAFJA that it was progressing development of draft management arrangements for the JANSF. Other issues discussed included illegal finning, stock status of sandbar and dusky sharks and outstanding WAFJA reports.

6. STAFFING

The Department of Fisheries (WA) provides management, research and compliance staff to service the needs of the WAFJA and the fisheries for which it is responsible.

7. ADVISORY COMMITTEES

The State Minister for Fisheries appoints members to the Management Advisory Committee (the MAC) on behalf of the WAFJA to advise on issues relating to the management. On 1 January 2002 the Western Australian Demersal Gillnet and Demersal Longline Fisheries Management Advisory Committee was replaced by the Western Australian Demersal Net and Hook Fishery Management Advisory Committee. Membership of this committee as at 30 June 2003 is presented in Appendix 3.

The MAC met on two occasions during the 2002-03 period. Advice and recommendations arising from those meetings was provided to the Western Australian Minister for Fisheries (in his capacity as a member of the WAFJA) by the Chairman of the MAC. The meetings were convened specifically for the MAC to discuss and develop a response to the *National Plan of Action for the Conservation and Management of Sharks* (NPOA-Sharks) July 2002 public

consultation draft. The MAC gave its in-principle support for the NPOA-Sharks with additional comments.

AFMA provides a permanent observer to the MAC and the person filling that position receives all MAC minutes and recommendations. The Joint Authority must agree to any proposed management policy that may result in changes to State subsidiary legislation and that decision must be recorded by the Joint Authority prior to the management policy being enacted in State law.

No changes to the subsidiary legislation used in the management of the JASDGDLMF and the JANSF occurred during this reporting period.

8. INTERNATIONAL / NATIONAL PLAN OF ACTION - SHARKS

Growing concerns regarding the vulnerability of sharks to overfishing led member nations of the Food and Agricultural Organization of the United Nations to develop an International Plan of Action for the Conservation and Management of Sharks (IPOA) (FAO 1999). The IPOA suggests that member nations (of which Australia is one) should voluntarily develop a shark action plan. In response, a Shark Advisory Group (SAG) was formed by the Australian Government Department of Agriculture, Fisheries and Forestry to facilitate responses to the actions generated in the IPOA. In 2002 the SAG developed a Shark Assessment Report and is currently working to establish a National Plan Of Action to clearly define Australia's role in ensuring the success of the IPOA.

A draft *National Plan of Action for the Conservation and Management of Sharks* was developed by the SAG and provided for public comment in August 2002.

9. JOINT AUTHORITY SOUTHERN DEMERSAL GILLNET AND DEMERSAL LONGLINE MANAGED FISHERY

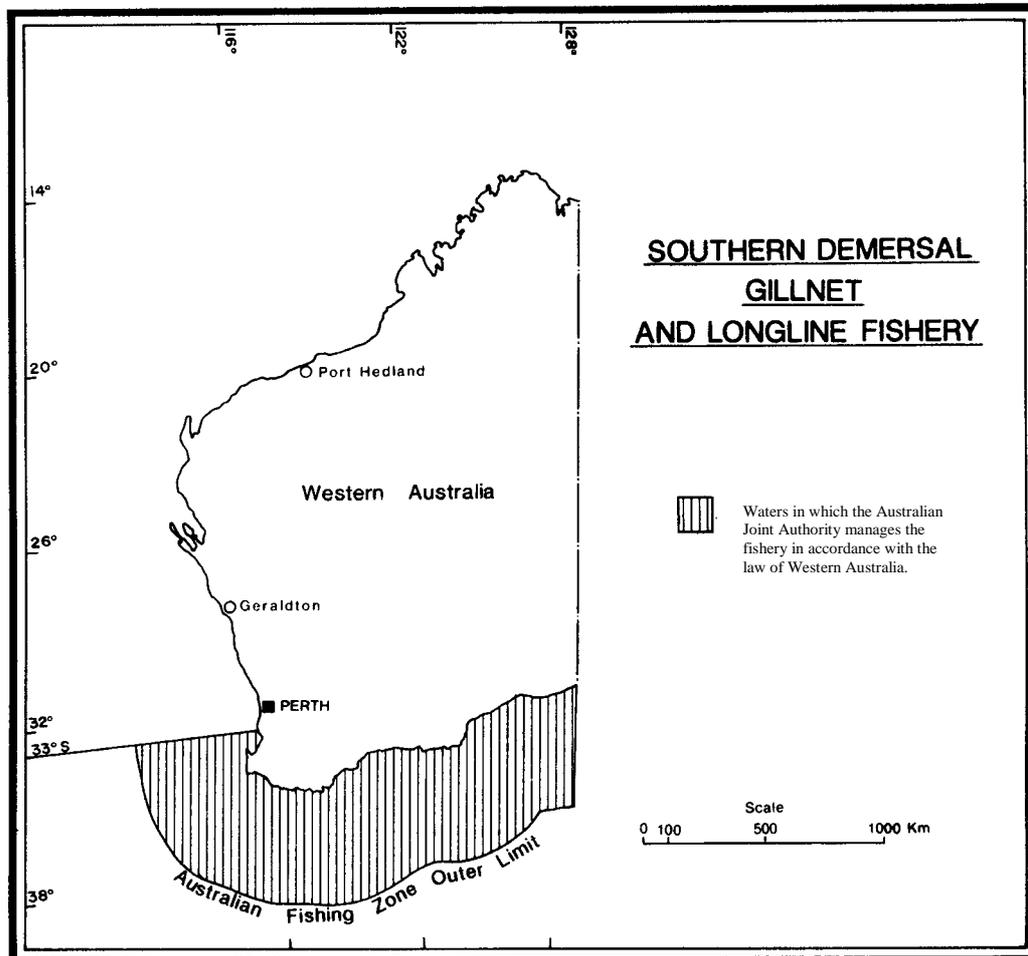
(a) BACKGROUND

Licensees using demersal gillnets and demersal longlines in the JASDGDLMF mainly target three species of shark, although other sharks and a variety of scalefish species are also taken. The current management plan for the JASDGDLMF is referred to as the *Joint Authority Southern Demersal Gillnet and Demersal Longline Management Plan 1992*.

The OCS arrangements for the JASDGDLMF cover the take of sharks, rays and bony fish by "demersal gillnets and all other lines" (demersal longlines) from 33° south latitude to the Western Australian/South Australian border and to the limit of the Australian Fishing Zone.

FIGURE 1

**JOINT AUTHORITY SOUTHERN DEMERSAL GILLNET AND DEMERSAL
LONGLINE MANAGED FISHERY**



There are two main management zones within the JASDGLMF:

- Zone 1 western zone - south of 33° south latitude to 116° 30' east longitude; and
- Zone 2 eastern zone - east of 116° 30' east longitude to the WA/SA border.

The fishing season runs from 1 June to 31 May.

(b) ECOLOGICALLY SUSTAINABLE DEVELOPMENT OBJECTIVES

As the relevant OCS arrangement provides for the JASDGLMF to be managed under State law, it is managed in accordance with the objectives of the *Fish Resources Management Act 1994*:

“The objects of this act are to conserve, develop and share the fish resources of the State for the benefit of present and future generations.”

Specifically, the *Fish Resources Management Act 1994* has the following objectives:

- “(a) to conserve fish and to protect their environment;*
- (b) to ensure that the exploitation of fish resources is carried out in a sustainable manner;*
- (c) to enable the management of fishing, aquaculture and associated industries and aquatic eco-tourism;*
- (d) to foster the development of commercial and recreational fishing and aquaculture;*
- (e) to achieve the optimum economic, social and other benefits from the use of fish resources;*
- (f) to enable the allocation of fish resources between users of those resources;*
- (g) to provide for the control of foreign interests in fishing, aquaculture and associated industries;*
- (h) to enable the management of fish habitat protection areas and the Abrolhos Islands reserve.”*

With respect to fishery specific objectives, current management arrangements for the JASDGLMF have been developed with a view to restoring and maintaining whiskery and gummy sharks at or above 40% of their original biomass by the year 2010 and similarly for dusky whaler sharks by the year 2040.

In an effort to ensure these biomass targets are achieved, a five-year management strategy involving gear reductions was implemented in 1997-98 and was completed in 2000-01. The package resulted in a 50% gear reduction in the JASDGLMF and the State managed West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery (WCDGLIMF). However, it must be noted that any positive outcomes arising from a management response in an elasmobranch fishery will not be realised for a number of years, due to the slow growing, long-lived nature of the target species.

The primary objectives for management are to maintain acceptable and sustainable catch levels whilst continuing to monitor effort, catch rates and the ability to meet agreed biomass targets. It is also an objective of researchers to ensure that stock assessment models are maintained and operating based on the most accurate data available.

Trigger points are used to initiate management changes. These trigger points include high effort levels associated with low catch rates and declining biomass estimates. Any large, unexplained catch variation, particularly any significant and unexpected catch reduction, may be a reflection of a lack of management effectiveness and needs to be investigated.

Performance measures include acceptable catch ranges, the probability of meeting agreed biomass targets and levels of potential effort in the fishery. In terms of fishery specific objectives, management arrangements for the current management cycle have been developed with a view to restoring and maintaining whiskery, gummy and dusky whaler sharks at or above 40% of their original biomass (by the year 2010 for the two former

species and by 2040 for the latter species). Such performance measures are used to assess management effectiveness and provide a suitable framework on which to base, if required, changes to management arrangements. The measures are considered to be reliable in measuring the effect of commercial shark fishing on WA shark stocks and are used to determine sustainable levels of effort. Any significant deviations from the performance measures should be investigated immediately and, if necessary, result in changes to management arrangements.

Further, it is an objective of the Joint Authority to ensure that adequate management processes are in place that allow for the inclusive management (i.e. including a variety of stakeholders) in the fisheries managed by the WAFJA. The processes should serve as a means of facilitating debate on management arrangements that will achieve an appropriate allocation of the shark (and to a lesser extent scalefish) resource amongst the various extractive and non-extractive stakeholders.

(c) **PRODUCTION**

There are three major species taken in the JASDGDLMF: whiskery shark (*Furgaleus macki*); the dusky whaler shark (often called 'bronze' whaler) (*Carcharhinus obscurus*); and the gummy shark (*Mustelus antarcticus*). In the northern zone of the fishery sandbar sharks (*Carcharhinus plumbeus*) are emerging as an important commercial species.

During recent seasons, there has been a continued shift in the catch composition of the fishery (see Table 1). Although there are likely to be a number of factors that have influenced this shift, the increased abundance of gummy sharks, the price obtained for dusky whaler meat and fins and the relative scarcity of whiskery sharks are likely to have been of greatest importance.

While gummy sharks are only taken in significant quantities in the JASDGDLMF, whiskery and dusky whaler sharks are also caught in the WCDGDLIMF. This fishery commences at the northern boundary of the JASDGDLMF (33° south latitude), extends northwards to Steep Point (26° 30' south latitude) and utilises very similar gear. The use of shark longlines and demersal gillnets is prohibited in waters between 26°30'S and North West Cape.

Shark species are the primary target of the JASDGDLMF, however a variety of scalefish are also taken. Other commercial operators and recreational fishers also catch these scalefish species. Although none of these species of scalefish are currently considered to be over-exploited, the relative catch between user groups continues to be a matter for debate.

The catches of shark and scalefish within the JASDGDLMF for 2000-01, 2001-02 and 2002-03 are presented in table 1 for comparison.

Table 1 – Catches of shark and scalefish within the JASDGDLMF

SPECIES	Live Weight (tonnes)		
	2000-01	2001-02	2002-03
<u>Shark</u>			
Whiskery	137	141	133
Gummy	233	343	380
Dusky whaler	234	176	182
Other shark	185	152	150
Sandbar shark*	22	30	30
Total Shark	811	842	875
<u>Scalefish</u>	147	146	130

Note - *Sandbar shark was previously not reported separately from 'other shark', but is emerging as an important commercial species on the west coast and the northwestern area of the JASDGDLMF.

A total of 875 tonnes of shark was caught in the JASDGDLMF in 2002-03, an increase in catch of 33 tonnes from the previous year. Like 2001-02, this seems largely due to the increased abundance of gummy sharks, landings of which increased a further 11% in 2002-03. Dusky whaler catches increased slightly to 181 tonnes, 1% higher than 2002-03. Effort was 5.7% higher than in 2002-03 at 160,250km gillnet/hr. Approximately 45% (by weight) of dusky whaler sharks caught in the JASDGDLMF are first year fish.

Gummy sharks are only caught in significant numbers in Zone 2 of the fishery. The selectivity of the demersal gillnets means that juvenile and larger female gummy sharks are rarely caught. Demersal gillnet gear largely excludes whiskery sharks less than five years old. Adult sandbar sharks are not as vulnerable to demersal gillnets and adults are not common in the near-shore fishing grounds.

The scalefish catch by the JASDGDLMF in 2002-03 decreased by 11% to 130 tonnes, accounting for approximately 13% of the JASDGDLMF catch. Queen snapper (*Nemadactylus valenciennesi*) remained the largest component of the scalefish catch at 33 tonnes, followed by blue groper (*Achoerodus gouldii*) at 24 tonnes, 8 tonnes of dhufish (*Glaucosoma herbraicum*) and 7 tonnes of pink snapper (*Pagrus auratus*).

In 2002-03, the estimated annual value of catch to fishers in the JASDGDLMF was \$3.3 million (shark and scalefish). The value of shark fins was conservatively estimated at \$875,000.

(d) RESEARCH

Staff at the Research Division of the Department of Fisheries carry out research on sharks. A major project to study the sustainability of Western Australia's commercially important shark species, funded in part by the Fisheries Research and Development Corporation (FRDC), was completed at the end of June 1999. The final report was completed in December 1999 (Simpfendorfer *et al.*, 1999). One important outcome of the project has been the improvement in the models used to assess the fishery's catch and effort data.

The JASDGDMF is measured by assessing trends in catches, effort and catch rates within set timeframes.

Whiskery shark populations are assessed using an age-structured population model, which incorporate biological information (reproduction, size, age and growth, etc.) and fishery data (gillnet selectivity, catch and effort, etc.) collected since 1975. A risk assessment is used to determine the probability of the stock reaching target levels under different levels of fishing effort. A model was previously developed for gummy shark but this is now too old to be of use for reliable stock assessment; trends in catch and catch rates are the measures now used to assess the gummy shark status.

Because dusky whaler sharks may take 19 years to reach sexual maturity and live for 50 years, available time series of catch and effort data is not long enough for an age-structured model. Instead, demographic analysis is used. This technique incorporates biological information (reproduction, size, age and growth etc) and age-specific exploitation rates from a tagging project in the mid 1990's. In summary, this model indicates that exploitation of dusky sharks should be restricted to few age classes. Given the fishery has traditionally targeted juveniles (neonates and 1+), only very low rates of mortality could be withstood by the stock.

(e) CONDITION OF THE FISHERY

Population modelling has provided the basis for the stock assessments for each species. It is the information obtained through the application of these models that has enabled the current management strategy to be developed. The models analyse data obtained through compulsory statutory catch and effort returns, with this information being validated by means of at-sea studies and the voluntary logbook program.

A stock assessment of whiskery sharks was conducted in 2001 and was based on 1999-00 data. The total biomass was between 2.9% and 39.9% of its unexploited level, with a best estimate of biomass of 26.0%. Since 1996-97, the rate of biomass decline has averaged 1.2%/yr and was only 0.9% in 2002-03. A best estimate of current whiskery shark biomass was higher than previously calculated at 35.1% of virgin biomass. At the 2002-03 level of effort, the risk assessment model estimated that the probability of the stock being at its target level by 2010 was 30.3% and that biomass would increase was only 24.4%, significantly less than last year's estimate of 41.9%. Even though biomass was calculated to be higher than previously determined, these results demonstrate that increased fishing efficiency, albeit within the current management constraints, is seriously undermining the chances of rebuilding the whiskery shark stock. Additional management measures are therefore required to ensure that the temperate demersal gillnet and longline fishery can demonstrate that it is harvesting this stock in a sustainable manner.

A stock assessment of gummy sharks was last conducted in 1998, based on 1996-97 data. The total biomass was between 22.6% and 60.2% of its unexploited level, with a best estimate of biomass of 42.7%. To achieve a target of 40% of original biomass by 2010 targeted effort at gummy sharks needed to be between 50% to 70% of the 1993-94 level. Demersal gillnet effort expended in the gummy shark's range has consistently been above 70% of the 1993-94 level and was 74.7% of that level in 2002-03. There has been no obvious evidence of a decline in gummy shark abundance and they are likely to have benefited the most from the net length reductions that took place in the late 1990's. The gummy shark catch remains at the upper end of the acceptable catch range.

The assessment of dusky whaler shark stocks in 1998 indicated that the stock could sustain the then current level of fishing. However, this assessment was dependent on a less than 4% annual mortality of adults over two metres. These sharks are being increasingly targeted for the value of their fins both within and outside the managed shark fisheries. There was a slight (1%) increase in dusky whaler catch in 2002-03 to 181 tonnes but nearly a 3% increase when combined with the west coast catch, which is still cause for concern. Adult dusky whaler sharks are being increasingly targeted for the value of their fins both within and outside the managed shark fisheries.

The unquantified catch of large dusky whaler sharks by other sectors has been a major concern in recent years and may be causing the stock to decline. The total elasmobranch catch by wetline methods outside the managed shark fisheries in Western Australia has increased sharply since 2001-02. Most of this catch has been taken from coastal waters in the southern half of the State, and would therefore include a large proportion of adult dusky whalers.

The catch of sandbar sharks remained stable in 2002-03 at 30 tonnes. Results from preliminary demographic analysis indicate that at current levels of exploitation the stock should continue to replace itself. Initial results also indicate that the stock can withstand an increase in exploitation of up to 61% on any age-class before the population will begin to decline. It is expected that the final demographic analysis should be available in 2004 and the final assessment regarding the condition of the stock could change.

It has become increasingly evident that further management responses may be required based on preliminary stock assessment data for whiskery and dusky sharks, as the gear reduction strategy implemented may not have had the desired effect due to the level of latent effort. The Department of Fisheries (WA) undertook a series of meetings throughout 2002 and 2003 to discuss this issue with industry. It was agreed that a management proposal should be developed and this process is currently progressing.

(f) MANAGEMENT MEASURES

At the core of the JASDGDMF management plan is the use of limited entry and a management system that regulates both time and gear use into tradable units of entitlement or Individually Transferable Effort (ITE) management. The ITE management arrangements have enabled a major industry restructure to occur, concluding in 2000-01. The fisheries are managed using effort controls in the form of time/gear units, with each unit allowing the use of one net of a particular length or set number of hooks for one month.

This system of management has enabled effort in the fishery to be reduced by decreasing the number of hooks and metres of net per time/gear unit. In 2000-01, Zone 1 and Zone 2 JASDGDMF gillnet lengths per unit were reduced to 270 metres and the number of longline hooks per unit was reduced to 90. The final year of phased net length reductions has brought the two zones of the JASDGDMF to 50% of their 1992-93 level of effort. When management was introduced in 1988, the net length per unit was 600 metres. Given the recent conclusion of the current five-year management cycle, it is essential that the status of the three key target species be re-assessed.

There were 57 managed fishery licences in the JASDGDMF during 2002-03 and fishing effort was expended by 32 vessels during this period, which was an increase of two vessels from the previous year. As the reductions in net lengths have occurred, trading of effort

entitlements has enabled some vessels to purchase additional effort units to become more cost-effective. Latent effort continues to be a significant management issue for the fishery.

Management measures for the JASDGDLMF are set out in the JASDGDLMF Management Plan. This Management Plan was gazetted as Western Australian Fisheries Notice Number 323 and Amendment Notices 360, 430, 398, 560, 670, 711 and 732 published in the Western Australian *Government Gazette*. The following amendments to the Management Plan were also published in the stated issues of the Western Australian *Government Gazette*:

- Number 27 published 23 February 1999;
- Number 86 published 28 May 1999;
- Number 184 published 21 September 1999;
- Number 246 published 24 December 1999; and
- Number 111 published 21 June 2002.

(g) FINANCIAL ARRANGEMENTS

An annual fee for access to the JASDGDLMF is levied under the *Fish Resources Management Act 1994*. The cost of access per time/gear unit for the 2002-03 fishing season was \$24.20 for Zones 1 and 3 and \$26.30 for Zones 2 and 4.

Funding for the management of the fishery and the operation of the MAC is not cost-recovered and is drawn from the annual budget of the Department of Fisheries (WA).

10. JOINT AUTHORITY NORTHERN SHARK FISHERY

(a) BACKGROUND

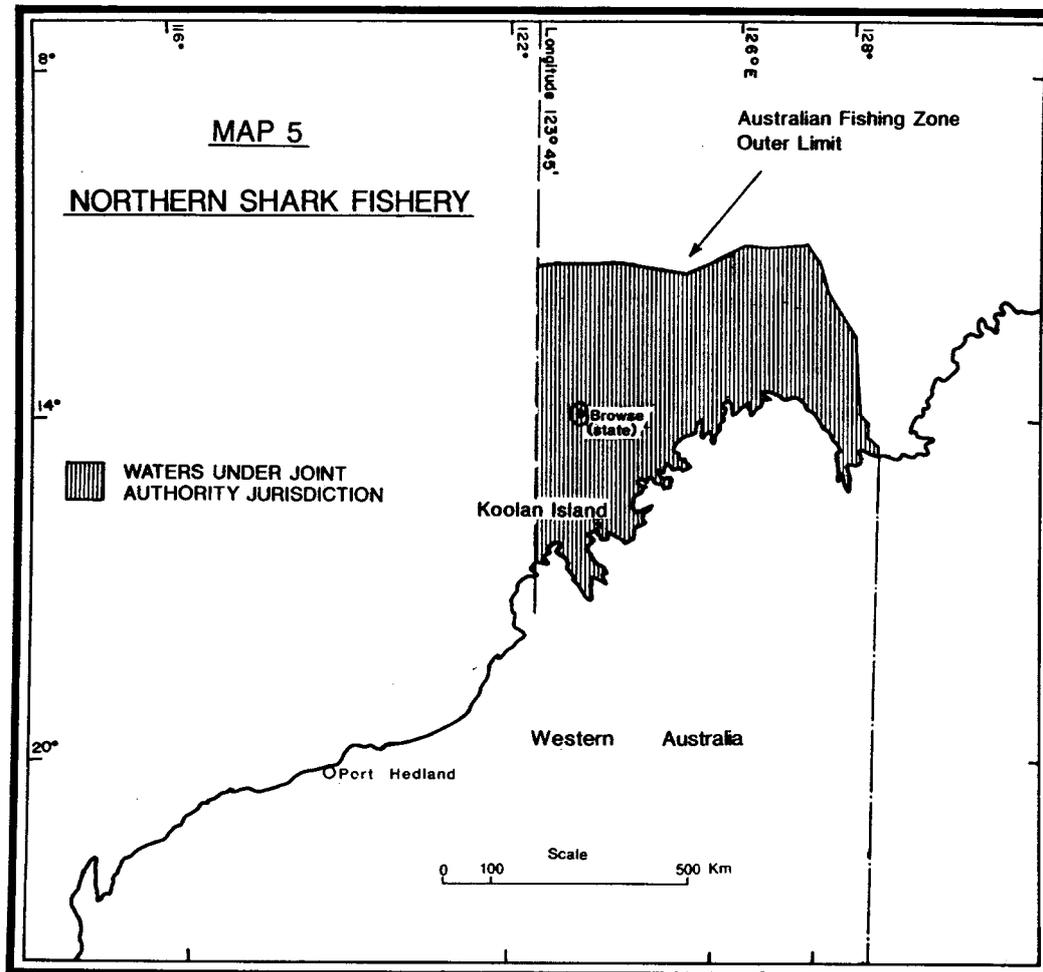
The JANSF covers waters east of Koolan Island (123° 45' east longitude) and north of 17° south latitude to the limit of the Australian Fishing Zone and the Northern Territory border (129° east longitude). The fishery includes the taking of sharks, as well as scalefish as bycatch, by pelagic and demersal gillnets and demersal longlines. Operators in the fishery most commonly use demersal longlines.

Prior to February 1995, the Commonwealth managed the take of shark using gillnets and demersal longlines seaward of three nautical miles between 120° east longitude and 129° east longitude. At the same time, the WA North Coast Shark Fishery (WANCSF) permitted the operation of shark longlines and shark droplines in State waters between North West Cape and the WA/NT border. The WA portion of the old Commonwealth Northern Shark Fishery is now known as the JANSF (and the western boundary was moved from 120° east longitude to 123° 45' east longitude).

Since the inception of the JANSF, the Joint Authority has developed no formal licensing arrangements. It is considered a priority of the Department of Fisheries (WA) to formalise access arrangements to the JANSF. It is expected that arrangements will be finalised in 2004-05.

FIGURE 2

JOINT AUTHORITY NORTHERN SHARK FISHERY



(b) ECOLOGICALLY SUSTAINABLE DEVELOPMENT OBJECTIVES

Similar to the JASDGLMF, the objectives of management for the JANSF are the same as those for the *Fish Resources Management Act 1994*. A list of these objectives has previously been presented in section 7(b), as well as general management principles underpinning ecologically sustainable development.

(c) PRODUCTION

The primary target species in the JANSF and the WANCSF combined ('the WA northern shark fisheries') are the sandbar shark (*Carcharhinus plumbeus*), the black-tip shark complex (*Carcharhinus spp.*), the tiger shark (*Galeocerdo cuvier*) and the pigeye shark (*C. amboinensis*).

For reporting and assessment purposes, the Department of Fisheries (WA) cannot release catch data for the JANSF, owing to the small number of operators, together with the Department of Fisheries' (WA) policy on confidentiality. Therefore the data combines the catches for the WANCSF and the JANSF. The WANCSF covers the waters of the Pilbara

and western Kimberley, between 114° 06' east longitude (North West Cape) and 123° 45' east longitude (Koolan Island).

The main fishing method in the northern shark fisheries is shark longline. Pelagic gillnets are used by a small number of operators in the JANSF. The catches of shark and scalefish within the WA northern shark fisheries (WANCSF and JANSF combined) for 2002-03 are presented in table 2.

Table 2: Catches of shark within the WANCSF and JANSF combined

SPECIES	Live Weight (tonnes)		
	2000-01	2001-02	2002-03
<u>Shark</u>			
Black-tip	47	185	181
Sandbar	79	72	88
Lemon	15	26	57
Hammerhead	23	43	45
Tiger	34	37	43
Pigeeye	29	25	32
Shovelnose rays	3	11	11
Grey reef	7	6	7
'Bronze whaler'	9	6	7
Other Sharks	26	45	19
Total Shark	272	456	490

Eleven of the 14 licences were active in the northern shark fisheries in 2002-03, compared to nine in the previous year. Unlike previous years, effort was evenly distributed between the two fisheries. Given the continued high value of shark fins and the increasingly full time operation of vessels, effort in these fisheries is likely to rise in coming years. The scalefish catch increased 136%, but was still relatively insignificant at 8.2 tonnes. This was mostly due to the increase in grey mackerel caught in pelagic gillnets in the JANSF.

In 2002-03, the combined value of the northern shark fisheries was approximately \$1.4 million including the value of shark fins, which maintained their price of between \$25 and \$120 per kilogram, depending on fin size and species.

(d) RESEARCH

Conclusions about the status of the JANSF are based on catch and effort data submitted by commercial operators since 1994, an understanding of the distribution and biology of northern Australian shark species from published and unpublished data and from research undertaken by the Department's Research Division, through a series of projects which began in July 2000. These are:

1. Biology and Stock Assessment of the Thickskin (Sandbar) Shark, *Carcharhinus plumbeus*, in Western Australia and Further Refinement of the Dusky Shark, *Carcharhinus obscurus*, Stock Assessment (FRDC project no. 2000/134).
2. The sustainability of Northern Australian Sharks and Rays (Department of Environment and Heritage).
3. Northern Australian sharks and rays: the sustainability of target and bycatch fisheries, Phase I (FRDC project no. 2001/077).

4. Northern Australian sharks and rays: the sustainability of target and bycatch fisheries, Phase II (FRDC project no. 2002/064).

Through collaboration with the CSIRO, Northern Territory and Queensland, these projects have enabled risk assessment of all northern Australian elasmobranch species, established data collection programs throughout the northern Australian shark fisheries and aim to resolve to what degree stocks prosecuted by the JANSF are shared between QLD, NT, WA and Indonesia.

(e) CONDITION OF THE FISHERY

The catches of shark in WA's northern shark fisheries has risen dramatically in recent years and 490 tonnes is the highest catch since records began, but is only 7% higher than in 2001-02. The increased catch was despite a 4% overall decrease in effort.

The suggested annual sustainable yield for blacktip sharks across northern Australia has been assessed as 2,000 tonnes. Assuming one third of these sharks should be taken in WA, the annual sustainable yield for blacktip sharks in the JANSF and WANCSF combined is 667 tonnes. The combined total catch of blacktip sharks in the JANSF and WANCSF in 2002-03 was 181 tonnes (27% of WA portion of the annual sustainable yield).

At this point, the reported catch by the WA northern shark fisheries is considered to be below the sustainable yield estimate for the target species. A stock assessment project is currently being carried out in relation to sandbar sharks in the WANCSF, the results of which may change the sustainability assessment of this species in the future. Further, the reported catches of sandbar, lemon, hammerhead, tiger and pigeye sharks will need to be monitored. Due to their slow growth and low fecundity, the increasing catches of some of these secondary species particularly in relation to the sandbar, pigeye and lemon sharks may be of concern in the future. Due to constraining resources, the Department of Fisheries (WA) does not carry out assessments for these species.

(f) MANAGEMENT MEASURES

Beyond limiting access to the JANSF to those who held relevant Commonwealth or State authorisations prior to the change in jurisdictional arrangements, formal management arrangements have not been adopted for the JANSF.

In July 1998, a discussion paper in relation to the future management of the JANSF was released (Fisheries Management Paper 114 – *A Strategy for the Future Management of the Joint Authority Northern Shark Fishery*) and following this, in February 1999, a meeting with key stakeholders was held to further discuss the proposed management changes outlined in the paper.

The Department of Fisheries (WA) is looking to address the future management arrangements and the lack of legislative basis of the JANSF as a priority. It is expected that the proposed management arrangements will incorporate aspects of Fisheries Management Paper 114, however it is recognised that the management strategy requires updating and that there are new management issues that have arisen since this time. The ecological sustainable development reporting process for the JANSF and WANCSF is continuing.

(g) FINANCIAL ARRANGEMENTS

Management of the JANSF is funded from the annual budget for the WA Department of Fisheries.

FURTHER READING

- Bray, T. and Kennedy, J. (1998) *A Strategy for the Future Management of the Joint Authority Northern Shark Fishery*, Fisheries Management Paper No. 114, Department of Fisheries: Perth.
- Department of Fisheries (2004) *State of the Fisheries Report 2003-04*. Department of Fisheries: Perth.
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APPENDIX 1

ARRANGEMENT BETWEEN THE COMMONWEALTH AND THE STATE OF WESTERN AUSTRALIA IN RELATION TO THE JOINT AUTHORITY DEMERSAL GILLNET AND LONGLINE FISHERY IN WATERS SOUTH OF LATITUDE 33° SOUTH

AN ARRANGEMENT entered into between the Commonwealth of Australia (the Commonwealth) of the one part and the State of Western Australia (the State) of the other part.

WHEREAS-

- (a) paragraph 4(1)(a) of the *Acts Interpretation Act 1901* of the Commonwealth provides that where an Act is enacted on or after the date of commencement of this section that is not to come into operation immediately upon its enactment, is expressed to confer power, *inter alia*, to make an instrument of a legislative or administrative character, then, unless the contrary intention appears, the power may be exercised, and anything may be done for the purpose of enabling the exercise of the power, before the Act concerned comes into operation as if it had come into operation;
- (b) subsection 2(2) of the *Fisheries Management Act 1991* of the Commonwealth (the Management Act) provides that Part 5 of the Management Act, which provides for co-operation with the States and Northern Territory in the management of fisheries, commences upon the repeal or the ceasing to have effect (as the case may be) of Part IVA of the *Fisheries Act 1952* of the Commonwealth;
- (c) by subsection 7(3) of the *Fisheries Legislation (Consequential Provisions) Act 1991* of the Commonwealth (the Consequential Provisions Act), as amended by section 24 of the *Primary Industries and Energy Legislation Amendment Act 1993* Part IVA of the *Fisheries Act 1952*, unless sooner repealed, ceases to have effect at the end of the period of 3 years beginning on 3 February 1992, the day on which section 7 of the Consequential Provisions Act commenced;
- (d) paragraph 7(4)(a) of the Consequential Provisions Act provides that upon the commencement of Part 5 of the Management Act, the Western Australian Joint Authority, established by subsection 12D(1) of the *Fisheries Act 1952* continues in existence as if it had been established under Part 5 of the Management Act;
- (e) an Arrangement was entered into under section 12H(1) of the *Fisheries Act 1952* between the Commonwealth and the State of Western Australia in relation to the:
 - (i) Demersal Gillnet Fishery in waters south of Latitude 33° South, published in the Commonwealth of Australia Gazette No. S 109 14 April 1988;
 - (ii) Demersal Longline Fishery in waters south of Latitude 33° South, published in the Commonwealth of Australia Gazette No. S109 14 April 1998;
- (f) paragraph 7(4)(b) of the Consequential Provisions Act provides that upon the commencement of Part 5 of the Management Act, any arrangement made with a State or Territory under subsection 12H(1) or (4) of the *Fisheries Act 1952* that was in force immediately before that commencement continues in force as if it had been made under Part 5 of the Management Act;

- (g) the Arrangements referred to in paragraph (e) of this Arrangement were made under Division 3 of Part IVA of the *Fisheries Act 1952*;
- (h) subsection 75(1) of the Management Act provides that an Arrangement under Division 3 of Part 5 of the Management Act may be terminated by instrument approved by the Governor-General and the Governor or Governors of the State or States concerned;
- (i) subsection 33(3) of the *Acts Interpretation Act 1901* provides *inter alia* that where an Act confers a power to make any instrument, the power shall, unless the contrary intention appears, be construed as including a power exercisable in the like manner and subject to the like conditions (if any) to repeal any such instrument;
- (j) subsection 8H(2) of the *Fisheries Act 1905* of the State (the State Act) will on the coming into operation of the *Fisheries Amendment Act 1994* of the State empower the State to terminate an arrangement as provided for by the Management Act;
- (k) subsection 71(1) of the Management Act provide that the Commonwealth may make an arrangement with a State or States represented on a Joint Authority that the Joint Authority is to have the management of a particular fishery in waters relevant to that or any of those States;
- (l) subsection 74(1) of the Management Act provides that an arrangement under, *inter alia*, subsection 71 (1) is to be made by an instrument approved by the Governor-General and the Governor or Governors of the State or States concerned;
- (m) subsection 8H(1) of the State Act will on the coming into force of the *Fisheries Amendment Act 1994* of Western Australia, empower the State to make an arrangement referred to in, *inter alia*, subsection 71(1) of the Management Act for the management of a particular fishery;
- (n) both the Commonwealth and the State are desirous of exercising their powers to make a further Arrangement in relation to the fishery referred to in clause 2 of this Arrangement.

NOW THEREFORE, in pursuance of the Management Act and the State Act and of all other powers so enabling:

1. The Arrangements entered into between the Commonwealth and the State referred to in paragraph (e) of the recitals to this Arrangement are, pursuant to subsection 75 (1) of the Management Act, and subsection 8H(2) of the State Act terminated.
2. The Commonwealth and the State hereby arrange that the fishery in waters relevant to the State, being coastal waters and waters of the Australian fishing zone that lie within the area described in Schedule 2 to the *Petroleum (Submerged Lands) Act 1967* under the heading "Area that includes the Adjacent Area in respect of Western Australia", south of Latitude 33° South for:

(a) all fish of the Class Osteichthyes (bony fish) and Class Chondrichthyes (cartilaginous fish) when the methods of demersal gillnets and lines of all kinds are used, other than:

- (i) handlines;
- (ii) troll lines;
- (iii) drop lines; and
- (iv) pelagic longlines used in accordance with the exercise of a right conferred by a fishing concession granted by the Australian Fisheries Management Authority under the Management Act to permit the use of pelagic longlines for the taking of tuna and tuna-like species;

but excluding fish to which this paragraph otherwise would apply taken in the exercise of a right conferred in relation to another fishery by a fishing concession granted by the Australian Fisheries Management Authority under the Management Act;

(b) all other fish taken by the methods provided for in paragraph (a) in the exercise of a right conferred by a licence or other authority granted by the State on behalf of the Western Australian Fisheries Joint Authority for the fish to which paragraph (a) applies:

is to be managed by the Western Australian Fisheries Joint Authority in accordance with the law of Western Australia.

3. The Minister responsible for administering the Management Act and the Minister responsible for administering the State Act may agree in writing to the maximum quantity of other fish, the subject of paragraph 2(b), that may be taken from time to time under a licence or other authority referred to in that paragraph and on matters of mutual interest in relation to the fishery.
4. This Arrangement shall, upon being executed on behalf of the Commonwealth and of the State and upon being approved by the Governor-General of the Commonwealth and the Governor of the State, take effect on 3 February 1995.
5. Without affecting the construction which this Arrangement would have if no provision of this Arrangement or part thereof is invalid, it is the intention of this Arrangement that if any provision of this Arrangement or part thereof is invalid, the remainder of that provision and of this Arrangement shall be construed as if that provision or part thereof was not included in this Arrangement even if the result is to extend the fishery described by this Arrangement.

Dated the 19th day of December 1994

Signed for and on behalf of the
Commonwealth of Australia by the
Honourable DAVID PETER
BEDDALL, Minister for Resources

Signed for and on behalf of the
State of Western Australia by the
Honourable MONTAGUE GRANT
HOUSE, Minister for Fisheries

(DAVID PETER BEDDALL)
in the presence of

(MONTAGUE HOUSE)
in the presence of

I, THE GOVERNOR-GENERAL of the Commonwealth of Australia, acting with the advice of the Federal Executive Council, in pursuance of subsections 74(1) and 75 (1) of the *Fisheries Management Act 1991*, hereby approve this instrument.

Dated 24 January 1995.

By His Excellency's command

(BILL HAYDEN)
Governor-General

By His Excellency's command

(DAVID PETER BEDDALL)
Minister for Resources

I, Michael Jeffery, the governor of the State of Western Australia, acting by and with the advice of the Executive Council in pursuance of the provisions of the *Fisheries Act 1905*, hereby approve this instrument.

Given under my hand this 4th day of January 1995.

(MICHAEL JEFFERY)
Governor

By His Excellency's Command

(MONTAGUE HOUSE)
Minister for Fisheries

APPENDIX 2

ARRANGEMENT BETWEEN THE COMMONWEALTH AND THE STATE OF WESTERN AUSTRALIA IN RELATION TO THE NORTHERN SHARK FISHERY IN WATERS EAST OF KOOLAN ISLAND

An ARRANGEMENT entered into between the Commonwealth of Australia (the Commonwealth) of the one part and the State of Western Australia (the State) of the other part.

WHEREAS-

- (a) paragraph 4(1)(a) of the *Acts Interpretation Act 1901* of the Commonwealth provides that where an Act is enacted on or after the date of commencement of this section that is not to come into operation immediately upon its enactment, is expressed to confer power, *inter alia*, to make an instrument of a legislative or administrative character, then, unless the contrary intention appears, the power may be exercised, and anything may be done for the purpose of enabling the exercise of the power, before the Act concerned comes into operation as if it had come into operation;
- (b) subsection 2(2) of the *Fisheries Management Act 1991* of the Commonwealth (the Management Act) provides that Part 5 of the Management Act, which provides for co-operation with the States and Northern Territory in the management of fisheries, commences upon the repeal or the ceasing to have effect (as the case may be) of Part IVA of the *Fisheries Act 1952* of the Commonwealth;
- (c) by subsection 7(3) of the *Fisheries Legislation (Consequential Provisions) Act 1991* (the Consequential Provisions Act) of the Commonwealth as amended by section 24 of the *Primary Industries and Energy Legislation Amendment Act 1993* Part IVA of the *Fisheries Act 1952*, unless sooner repealed, ceases to have effect at the end of the period of 3 years beginning on 3 February 1992, the day on which section 7 of the Consequential Provisions Act commenced;
- (d) paragraph 7(4)(a) of the Consequential Provisions Act provides that upon the commencement of Part 5 of the Management Act, the Western Australian Joint Authority, established by subsection 12D(1) of the *Fisheries Act 1952* continues in existence as if it had been established under Part 5 of the Management Act;
- (e) Arrangements were entered into under section 12H(4) of the *Fisheries Act 1952* between the Commonwealth and Western Australia in relation to the:
 - (i) North West Pelagic Gillnet Fishery, published in the Commonwealth of Australia Gazette No. S109 on 14 April 1988;
 - (ii) Line Fishery East of 120° East, published in the Commonwealth of Australia Gazette No. S109 on 14 April 1988;
- (f) paragraph 7(4)(b) of the Consequential Provisions Act provides that upon the commencement of Part 5 of the Management Act, any arrangement made with a State or Territory under subsection 12H(1) or (4) of the *Fisheries Act 1952* that was in force immediately before that commencement continues in force as if it had been made under Part 5 of the Management Act;

- (g) the Arrangements referred to in paragraph (e) of this Arrangement were made under Division 3 of Part IVA of the *Fisheries Act 1952*;
- (h) subsection 75(1) of the Management Act provides that an Arrangement under Division 3 of Part 5 of the Management Act may be terminated by instrument approved by the Governor-General and the Governor or Governors of the State or States concerned;
- (i) subsection 33(3) of the *Acts Interpretation Act 1901* provides *inter alia* that where an Act confers a power to make any instrument, the power shall, unless the contrary intention appears, be construed as including a power exercisable in the like manner and subject to the like conditions (if any) to repeal any such instrument;
- j) subsection 8H(2) of the *Fisheries Act 1905* of the State (the State Act) will on the coming into operation of the *Fisheries Amendment Act 1994* of the State empower the State to terminate an arrangement as provided for by the Management Act;
- (k) subsection 71(1) of the Management Act provide that the Commonwealth may make an arrangement with a State or States represented on a Joint Authority that the Joint Authority is to have the management of a particular fishery in waters relevant to that or any of those States;
- (l) subsection 74(1) of the Management Act provides that an arrangement under, *inter alia*, subsection 71 (1) is to be made by an instrument approved by the Governor-General and the Governor or Governors of the State or States concerned;
- (m) subsection 8H(1) of the State Act will on the coming into force of the *Fisheries Amendment Act 1994* of the State empower the State to make an arrangement referred to in, *inter alia*, subsection 71(1) of the Management Act for the management of a particular fishery;
- (n) both the Commonwealth and the State are desirous of exercising their powers to make a further Arrangement in relation to the fishery referred to in clause 2 of this Arrangement.

NOW THEREFORE, in pursuance of the Management Act and the State Act and of all other powers so enabling:

1. The Arrangements entered into between the Commonwealth and the State referred to in paragraph (e) of the recitals to this Arrangement are, pursuant to subsection 75 (1) of the Management Act and subsection 8H(2) of the State Act terminated.
2. The Commonwealth and State hereby arrange that the fishery in waters relevant to Western Australia, being coastal waters and waters of the Australian fishing zone that lie within the area described in Schedule 2 to the *Petroleum (Submerged Lands) Act 1967* under the heading "Area that includes the Adjacent Area in respect of the parallel latitude 17° South for:
 - (a) all fish of the Class Chondrichthyes (cartilaginous fishes) when any methods of pelagic gillnetting, demersal gillnetting and demersal longlining are used;

but excluding fish to which this paragraph otherwise would apply taken in the exercise of a right conferred by a fishing concession granted by the Australian Fisheries Management Authority under the Management Act;

(b) all fish of the Class Osteichthyes (bony fishes) taken in the exercise of a right conferred by a licence or other authority granted by the State on behalf of the Western Australian Fisheries Joint Authority for the fish to which paragraph (a) applies;

is to be managed by the Western Australian Fisheries Joint Authority in accordance with the law of Western Australia.

3. The Minister responsible for administering the Management Act and the Minister responsible for administering the State Act may agree in writing to the maximum quantity of other fish, the subject of paragraph 2(b), that may be taken from time to time under a licence or other authority referred to in that paragraph and on matters of mutual interest in relation to the fishery.
4. This Arrangement shall, upon being executed on behalf of the Commonwealth and of the State and upon being approved by the Governor-General of the Commonwealth the Governor of the State, take effect on 3 February 1995.
5. Without affecting the construction which this Arrangement would have if no provision of this Arrangement or part thereof is invalid, it is the intention of this Arrangement that if any provision of this Arrangement or part thereof is invalid, the remainder of that provision and of this Arrangement shall be construed as if that provision or part thereof was not included in this Arrangement even if the result is to extend the fishery described by this Arrangement.

Dated the 19th day of December 1994

Signed for and on behalf of the
Commonwealth of Australia by the
Honourable DAVID PETER
BEDDALL, Minister for Resources

Signed for and on behalf of the
State of Western Australia by the
Honourable MONTAGUE GRANT
HOUSE, Minister for Fisheries

(DAVID PETER BEDDALL)
in the presence of

(MONTAGUE HOUSE)
in the presence of

I, THE GOVERNOR-GENERAL of the Commonwealth of Australia, acting with the advice of the Federal Executive Council, in pursuance of subsections 74(1) and 75 (1) of the *Fisheries Management Act 1991*, hereby approve this instrument.

Dated 24 January 1995.

By His Excellency's command

(BILL HAYDEN)
Governor-General

By His Excellency's command

(DAVID PETER BEDDALL)
Minister for Resources

I, Michael Jeffery, the governor of the State of Western Australia, acting by and with the advice of the Executive Council in pursuance of the provisions of the *Fisheries Act 1905*, hereby approve this instrument.

Given under my hand this 4th day of January 1995.

(MICHAEL JEFFERY)
Governor

By His Excellency's Command

(MONTAGUE HOUSE)
Minister for Fisheries

APPENDIX 3

MEMBERSHIP OF THE WESTERN AUSTRALIAN NET AND HOOK FISHERY MANAGEMENT ADVISORY COMMITTEE AS AT 30 JUNE 2003

Mr T McNeil	Chairman	Independent
Mr J Cooke	Member	Commercial Fisherman
Mr H Gilbert	Member	Commercial Fisherman
Mr P Hayler	Member	Commercial Fisherman
Mr N Soulos	Member	Commercial Fisherman
Mr G Campbell	Member	Commercial Fisherman
Mr J Smythe	Member	Commercial Fisherman
Mr J Baas	Member	Recreational Fisherman
Ms O Prindiville	Member	Conservation Sector
Mr R Gould	Member	Department of Fisheries (Executive Director's nominee)
Ms M Sasche	Observer	Australian Fisheries Management Authority