PROPOSALS FOR COMMUNITY DISCUSSION ON THE FUTURE MANAGEMENT OF PINK SNAPPER FISHING IN COCKBURN SOUND AND SURROUNDING WATERS

FISHERIES MANAGEMENT PAPER NO. 187

Department of Fisheries 168 St Georges Terrace Perth WA 6000

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Proposals For Community Discussion On The Future Management Of Pink Snapper Fishing In Cockburn Sound And Surrounding Waters

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SECTION 1 INTRODUCTION

In the West Coast Region pink snapper aggregate in spawning schools when water temperatures start to increase in late spring/early summer. Due to variations in water temperature, these aggregations and spawning events probably occur in series, with aggregations occurring in the more northerly areas first.

Pink snapper were recorded in Cockburn Sound by Captain James Stirling in 1829 and to some extent have been "rediscovered" over the last two decades by an increasing number of recreational fishers.

As more research is conducted on pink snapper populations it has become clear that recruitment is highly variable from year to year. When combined with significant fishing pressure on aggregating spawning fish, this makes snapper populations highly vulnerable to over fishing.

As a precautionary measure to protect spawning pink snapper a closure was first established in Cockburn Sound in 2000. The spawning closure was established as a prohibition on fishing for pink snapper in the waters of Cockburn Sound from 15 September to 31 October.

Subsequent to this closure, during the Regional Review of Recreational Fishing on the West Coast, a proposal was put forward to extend the closure over November and expand the closed area to include the metropolitan area from Cape Bouvard to Ocean Reef. It was also proposed that the closure should apply to the take, landing and possession of pink snapper rather than just prohibiting the fishing for pink snapper. This was due to the fact that the existing closure was largely unenforceable as anglers landing fish could claim the fish were caught outside the Sound.

In considering this proposal the Minister indicated that additional consultation should be undertaken with the commercial fishing sector on the extension of the closure. However, in to make the existing closure enforceable, in the interim, the Minister approved that the current closure in Cockburn Sound would be a prohibition on the take, landing and possession of pink snapper.

Since the West Coast Recreational Fishing Review was completed additional research information has come to light, which has led to a re-evaluation of the appropriateness of the proposed pink snapper spawning closure in Cockburn Sound and the Metropolitan area.

This discussion paper outlines the current issues associated with the management of the metropolitan pink snapper fishery along with some options for future management.

Recreational fishers who have an interest in the future management of the Cockburn Sound snapper fishery are urged to consider the draft proposals and provide their views to the Department of Fisheries.

SECTION 2 MAKING A SUBMISSION

The release of this discussion paper for public comment provides an opportunity for you to express an opinion on how the Metropolitan pink snapper fishery should be managed. It is equally important that you respond whether you agree or disagree with the various proposals.

Points to consider for submissions

To ensure your comments are as effective as possible, please:

- clearly and briefly describe each separate subject you wish to address;
- refer to the different proposals in the discussion paper;
- tell us whether you agree/disagree with any or all of the proposals;
- suggest alternative ways to resolve the issues raised in this paper;
- raise any additional matters you believe need consideration;

Where to send your submission

The closing date for submissions is 31 January 2005. Please send your submission along with your full name and address and association details (if applicable) to:

Recreational Fisheries Program Department of Fisheries Locked bag 39 Cloisters Square Post Office PERTH WA 6850

Or

e-mail: nharrison@fish.wa.gov.au

SECTION 3 BACKGROUND INFORMATION

3.1 Current pink snapper spawning closure in Cockburn Sound

A pink snapper spawning closure exists in Cockburn Sound from 15 September to 31 October. During this period people cannot take, land or be in possession of pink snapper on the waters of Cockburn Sound. The area of the current closure is defined in the map below:



Figure 1: Current Cockburn Sound pink snapper spawning closure

3.2 The importance of Cockburn Sound as a pink snapper spawning area

Each spring when the water temperature starts to increase pink snapper aggregate in the waters of Cockburn Sound to spawn. The size and time of the aggregation will vary with environmental conditions.

Pink snapper are taken throughout the West Coast Region which runs from Black Point near Augusta to the Zydorp Cliffs north of Kalbarri. Within the zone the commercial catch is significantly higher in the north of the fishery around Kalbarri where the average catch rate for pink snapper is about 300kg/per day. For commercial boats off Fremantle the catch rate for pink snapper is between 15-32kg/per day.

The large difference in annual catch rates between the two areas suggests that the population of pink snapper in Fremantle is probably not influenced directly by recruitment events in the Geraldton region.

Cockburn Sound is the major known aggregation area in the lower west coast region. Research has shown that 92% of pink snapper that aggregate in Cockburn Sound are 7 years or older (Wakefield, unpubl.). This contrasts to the breeding stock in the Metropolitan waters outside Cockburn Sound where the majority of fish are 3 to 7 year olds (Wakefield, unpubl.). The average size of fish and the size of the spawning aggregation indicates Cockburn Sound is an important breeding ground for pink snapper in the lower west coast zone of the fishery.

Research on pink snapper in Western Australia has shown that recruitment is highly variable and that the fishery can hang off periodic 'spikes' or large 'pulses' in recruitment which may occur every few years. This means there can be lengthy periods of low recruitment. This makes snapper populations highly vulnerable to overexploitation as large "holes" can appear in the fishery where fishing is based on a strong adult year class with only low numbers of juveniles or sub-adults in the population. This is compounded by the aggregating nature of pink snapper that can give the impression of stocks being healthy as fishers experience good catches. However, as the adult stocks become depleted, the fishery can decline dramatically, despite the lack of any early warning in the form of dramatically reduced catch rates.

Providing additional protection for Cockburn Sound spawning aggregation raises the question of the relationship to the stocks in the adjacent oceanic areas. This issue is being investigated as part of a PhD project (Wakefield) under supervision by Department of Fisheries Research Division, which should generate better information over the next two years.

3.3 Recreational fishing – catch and effort

Data on the boat-based recreational catch and fishing effort for Cockburn Sound and Owen Anchorage were first collected in a 12-month survey of coastal waters from Augusta to Kalbarri during 1996/97. The 1996/97 survey estimated the recreational catch at 20 tonnes for the region, of which the majority was recorded as being taken outside Cockburn Sound. This survey was conducted during daylight hours and may have missed a significant proportion of the pink snapper catch in Cockburn Sound, as much of the targeted snapper fishing is undertaken at night. At the same time this survey was conducted, a separate survey was conducted by VFLOs to estimate pink snapper catches in Cockburn Sound. Unfortunately, during the spring of 1996 only low numbers of pink snapper were caught in the Sound and the estimated catch was less than one tonne.

The Fisheries Research and Development Corporation (FRDC) and Cockburn Cement Limited funded a second survey of Cockburn Sound and Owen Anchorage, primarily focused on blue swimmer crabs, during 2001/02. As data was collected after dark, information on pink snapper catches was also collected during this survey.

During 2001/02 the boat-based recreational fishing effort for Cockburn Sound and Owen Anchorage was estimated to be 104,000 fisher days per year (85,000 angling and 19,000 crabbing). This later survey was more extensive including early morning and evening fishing. The 2001/02 survey estimated the recreational pink snapper catch in Cockburn Sound at four tonnes. Given the survey time did not extend beyond 9.00pm the estimated catch is still likely to be an underestimate.

Table 1: Recreational catch of pink snapper from Cockburn Sound and Owen Anchorage

Species	Boat-based catch 1996/97 (tonnes)	Boat-based catch 2001/02 (tonnes)	t-based catch Shore-based Catch 2001/02		catch
			(tonnes)	(tonnes)	
Pink Snapper	<1	4	0	4	

3.4 Commercial catch data

Members of the Cockburn Sound Line and Pot Managed Fishery catch pink snapper in Cockburn Sound. In total there are 25 licensed operator in the fishery however, not all licensees exercise their line fishing entitlement. Pink snapper are predominantly caught on longline, which one fisher in the fishery is endorsed to use.

Historically, the bulk of commercial catch of pink snapper in Cockburn Sound has occurred over the spring and early summer with November being the peak month.

The long-term average monthly commercial catch of pink snapper in Cockburn Sound is represented below.

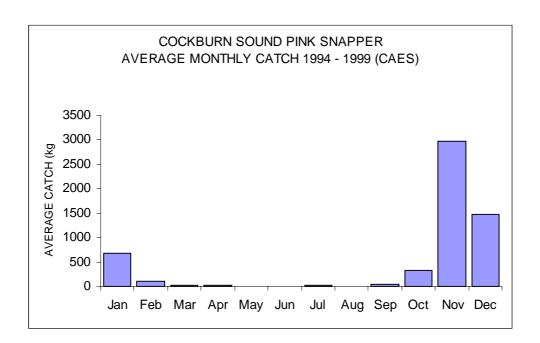


Figure 2: Cockburn Sound Pink Snapper Average Monthly Catch 1994 -1999

Catch data after 1999 has not been used in the Figure 2, due to the fact that the data would be biased by the current spawning closure which has been in place since 2000. However, it can be said that commercial catch trends in 2000 - 2003 have been very similar with peak catches continuing to occur in November and December.

SECTION 4 ISSUES AND PROPOSALS

To determine the appropriateness of a wider pink snapper spawning closure across the Metropolitan area the following issues have been addressed:

- Is a spawning closure necessary?
- Boundaries for the closure.
- Starting date for a spawning closure.
- Closing date for the spawning closure.
- Transportation and landing of pink snapper through Cockburn Sound during the closed season.

4.1 Is a spawning closure necessary

Experiences with managing pink snapper stocks in Shark Bay have shown the management tools such as bag and size limits alone can't provide adequate protection. Prohibiting fishing on pink snapper spawning aggregations has proved to be the most effective way of protecting stocks.

Within Cockburn Sound pink snapper aggregations are primarily targeted during the evening and after dark, however, aggregations do occur during the day.

As previously indicated research is underway to determine the relationship of the Cockburn Sound fishery to the stocks in the adjacent oceanic areas. In the interim, given the fact that Cockburn Sound is the major known spawning ground on the lower west coast, a precautionary approach to management is required to ensure adequate protection is afforded to aggregating spawning pink snapper. Spawning closures are an important management tool to protect aggregating breeding fish particularly as other tools may not be effective due to the fact that the recreational fishing effort is not capped. The following management objective is proposed for a pink snapper spawning closure in Cockburn Sound.

Management objective

• Protect pink snapper breeding stocks to assist in maintaining sustainable fishing in the long-term.

4.2 Boundaries for the spawning closure

A proposal was put forward during the recent West Coast Recreational Fishing Review that the Cockburn Sound spawning closure should be extended to cover the area from Mandurah to Two Rocks. This proposal was put forward by the community based working group for discussion in response to concerns that commercial and recreational fishers may also target aggregations outside Cockburn Sound.

If large aggregations were occurring outside Cockburn Sound this may present in larger commercial catches in specific areas and times of the year. A review of catch data submitted by commercial fishers (CAES) does not indicate significantly higher catch rates in the oceanic waters adjacent to Cockburn Sound that would indicate the targeting of spawning

aggregations. Similarly, the recreational creel survey in 1996/97 (Sumner and Williamson 1999) did not indicate catch levels which would indicate large spawning aggregations being fished.

Commercial catches for the area between Two Rocks and Mandurah (not including Cockburn Sound) are represented in the figure below.

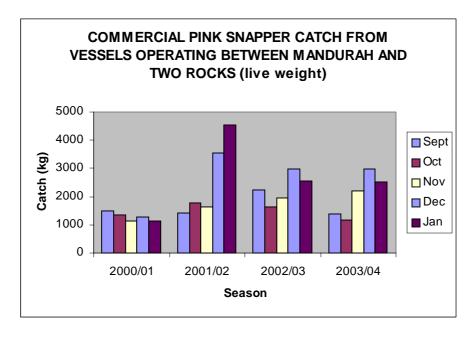


Figure 3: Commercial Pink Snapper Catch from Vessels Operating Between Mandurah and Two Rocks.

Research on the distribution of pink snapper eggs has indicated that pink snapper spawning does occur in the shallow waters of Warnbro Sound adjacent to Cockburn Sound (Wakefield, unpubl.). The current information suggests the level of spawning is not as significant as Cockburn Sound however, a number of spawning sites have been detected which may play an important role in providing recruitment into the fishery. Due to the potential importance of these sites, consideration should be given to including the waters in the spawning closure.

With regard to the proposal to extend the closure to cover the Metropolitan area a key consideration which needs to be taken into account is post-release mortality of pink snapper in depths greater than 50m. Research into post release mortality for pink snapper is underway and preliminary results indicate that release mortality rates for pink snapper increases in depths greater than 50m (St John, unpubl.)

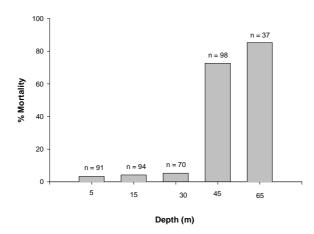


Figure 4: Mortality of snapper caught at five different depths of capture 5m, 15m, 30m, 45m and 65m (St John, unpublish).

Given that the commercial wetline fleet, charter industry and general recreational sector often target demersal species in water deeper than 100m, it could be expected that significant fishing mortality could occur if fishing for pink snapper was closed. Regardless if the pink snapper fishery was closed fishers targeting other demersal species would still catch pink snapper. In summary, single demersal species closures in deep water may be ineffective in reducing fishing mortality. A closure extending across the Metropolitan area is therefore not recommended at this time however, should a significant reduction in fishing be justified in future, a closure to all demersal deepwater fishing would need to be considered.

Proposal 1 - Boundaries for the spawning closure

That the boundaries for the metropolitan pink snapper spawning closure be defined as those waters of Cockburn Sound and Warnbro Sound (see figure 5).

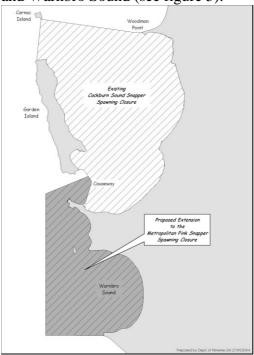


Figure 5: Boundaries for the Metropolitan pink snapper closure

4.3 Starting date for spawning closure

Anecdotal evidence from recreational fishers indicate that pink snapper aggregations start to form in Cockburn Sound in late July to early August however, research data collected as part of a PhD project (Wakefield, unpubl.) indicates that spawning (egg production) does not commence until September. However, commercial catch data indicates that September is not a period when significant catches are taken. Based on this historical catch data significant aggregations do not start occurring in Cockburn Sound until the beginning of October. Adequate protection could still be provided to the main spawning aggregation if the closed season commenced on 1 October rather than 15 September.

Proposal 2 – Starting date for spawning closure

That the spawning closure should commence on 1 October.

4.4 Closing date for a spawning closure

Recent data collected (Wakefield, unpubl.) indicates that November is the peak period of spawning activity. The average monthly commercial catch rates for November is over 3 tonnes, whilst December is approx. 1.5 tonnes and January and October are less than 0.7 tonnes. In the absence of any additional recreational data, it has been assumed that this monthly pattern is reflected in recreational catch rates. An extension to the closure through November should be considered as a precautionary measure to reduce fishing mortality on the metropolitan pink snapper spawning stock. This has the potential to provide additional protection to pink snapper while they are breeding and enhance the overall catch in out years by allowing for greater recruitment into the fishery.

Proposal 3 - Closing date for a spawning closure

That the spawning closure end on 30 November

4.5 Transportation and landing of pink snapper through Cockburn Sound during the closed season

To ensure spawning pink snapper in Cockburn Sound are provided with the most effective protection, the current closure is on the basis of a prohibition on the take, landing and possession of pink snapper.

Some anglers have raised concern that this closure effectively stops them catching pink snapper outside Cockburn Sound and returning to land their fish at ramps in the closed area. This issue primarily impacts on anglers launching their boats from the Cockburn Power Boat Club and Woodman Point.

To allow people to land pink snapper in Cockburn Sound would require the removal of the prohibition on the landing of pink snapper during the closed period, as well as the prohibition on possession – as people would have to transport fish through the closed area in order to land them.

A prohibition on only the take of pink snapper would reduce the effectiveness of the closure as people who may have fished illegally in the Sound could claim the fish being landed were caught outside Cockburn Sound. This could only be addressed by an extensive at sea compliance program that would be expensive and involve resources, which are currently not available.

If the prohibition on landing and possession is to be removed the appropriateness of other management controls must be considered to ensure the effective protection of the spawning pink snapper.

Research data on the length frequency of pink snapper in Cockburn Sound and the oceanic fishery has been collected over the last three years as part of a PhD project (Wakefield).

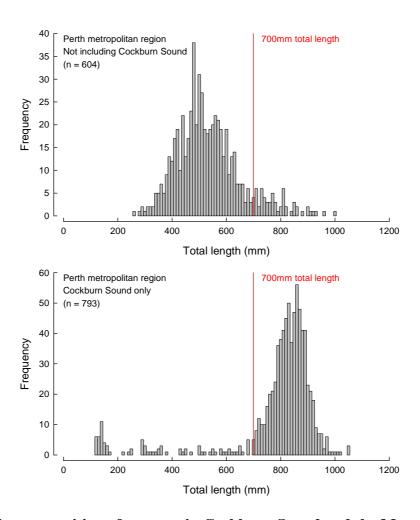


Figure 6: Size composition of snapper in Cockburn Sound and the Metropolitan region for 2002 and 2003 combined (Wakefield, unpubl.)

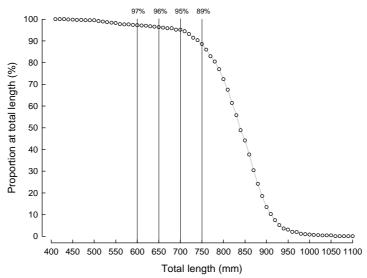


Figure 7: Percentage of snapper in Cockburn Sound that are larger than certain total lengths (Wakefield, unpubl.)

This research indicates that around 95% of the pink snapper aggregating in Cockburn Sound are over 70cm in total length. This compares to the approximately 90% of snapper taken outside Cockburn Sound being under 70cm in total length.

Given the large average size of spawning pink snapper in Cockburn Sound, the available data indicates that the majority of these fish could be protected by introducing a maximum size limit of 70cm during the peak spawning season.

Due to compliance concerns where anglers in the past cut the ends off pink snapper tails to avoid maximum legal size limits, it is proposed that a fork length be used to measure the maximum size. A 70cm (total length) pink snapper has a fork length of around 60cm. A pink snapper of this size weighs approximately 4.1kg.

A maximum size during the closed season for the metropolitan area would also reduce the opportunity for unscrupulous anglers to launch from outside the closed area, fish inside the area of the spawning closure and then land pink snapper back at the point of launching.

Proposal 4 – Maximum size limit

That a maximum size limit of 60cm (fork length) apply to pink snapper between Two Rocks and Mandurah during spawning season of 1 October to 30 November.

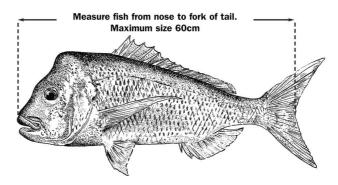


Diagram 1: Fork length measurement for a pink snapper

In addition to the proposed maximum legal size, a spawning closure would still be required to stop fishers trying to catch smaller snapper in the spawning aggregation and avoid incidental mortality issues where large numbers of spawning snapper are caught and released. To be effective it is proposed that the spawning closure apply to the take of pink snapper as well as prohibiting the possession of pink snapper for people "actively" fishing in Cockburn Sound during the spawning closure. This would allow people to transport pink snapper under 70cm through the closed area however, they would not be able to stop and fish in Cockburn Sound if they had pink snapper in their possession. This is essential to assist with the enforcement of the closure.

Having a maximum size in addition to a spawning closure on the take of pink snapper in Cockburn and Warnbro Sounds may provide adequate protection for spawning pink snapper, while still allowing people to land pink snapper under 70cm which have come from the oceanic area outside Cockburn and Warnbro Sounds.

Proposal 5 – Closure to the take of pink snapper

A closed season to the take of pink snapper in Cockburn and Warnbro Sounds apply from 1 October to 30 November.

Proposal 6 - Restrictions on the possession of pink snapper in Cockburn Sound

During the spawning closure a prohibition exist on the possession of pink snapper while fishing in Cockburn Sound. (This will allow fish to be transported snapper through the closed area however, anglers with snapper in their possession will not be allowed to stop and fish in Cockburn Sound on the way back in).

SECTION 5 SUMMARY OF PROPOSED MANAGEMENT ARRANGEMENTS

- That the waters of Cockburn Sound and Warnbro Sound be closed to the take of pink snapper from 1 October until 30 November.
- That a maximum size of 60cm (fork length) applies to any pink snapper landed in Metropolitan area (Two Rocks to Mandurah) between 1 October and 30 November.
- That a prohibition on the possession of pink snapper applies when fishing in Cockburn Sound during the closed season (this will allow fish to be transported through the closed area however, anglers with snapper in their possession will not be allowed to stop and fish in Cockburn Sound on the way back in).
- Outside the closed area the existing management arrangements of a daily bag limit of 4 and a minimum size of 41cm continue to apply.

'HOW TO HAVE YOUR SAY' - detach this section

The release of this discussion paper for public comment provides an opportunity for you to express your opinion on how the pink snapper fishery in Cockburn Sound should be managed. It is equally important to respond whether you agree, or disagree, with the various management proposals.

management proposals.					
Comment on proposals					
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Proposal 1	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
That the boundaries for the	J				
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Proposal 2 and 3	Strongly	A grace	Don't	Disagree	Strongly
Floposal 2 and 3	Agree	Agree	Know	Disagree	Strongly Disagree
That the spawning closure should	9-00				B-
commence on 1 October and end					
on 30 November.					
		•		•	
Comments:					

Proposal 4	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
That a maximum size limit of	S				
60cm (fork length) apply to pink					
snapper between Two Rocks and					
Mandurah during spawning season					
of 1 October to 30 November.					
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Proposal 5	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
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snapper in Cockburn and Warnbro					
Sounds apply from 1 October to 30					
November					
Comments:					
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Proposal 6	Strongly	Agree	Don't	Disagree	Strongly
Troposaro	Agree	115100	Know	Disagree	Disagree
During the spawning closure a					
prohibition exist on the possession					
of pink snapper while fishing in					
Cockburn Sound.					
Comments:					

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- No. 1 The Report of the Southern Western Australian Shark Working Group. Chairman P. Millington (1986)
- No. 2 The Report of the Fish Farming Legislative Review Committee. Chairman P.Rogers (1986)
- No. 3 Management Measures for the Shark Bay Snapper 1987 Season. P. Millington (1986)
- No. 4 The Esperance Rock Lobster Working Group. Chairman A. Pallot (1986).
- No. 5 The Windy Harbour Augusta Rock Lobster Working Group. Interim Report by the Chairman A. Pallot (1986)
- No. 6 The King George Sound Purse Seine Fishery Working Group. Chairman R. Brown (1986)
- No. 7 Management Measures for the Cockburn Sound Mussel Fishery. H. Brayford (1986)
- No. 8 Report of the Rock Lobster Industry Advisory meeting of 27 January 1987. Chairman B. Bowen (1987)
- No. 9 Western Rock Lobster Industry Compensation Study. Arthur Young Services (1987)
- No. 10 Further Options for Management of the Shark Bay Snapper Fishery. P. Millington (1987)
- No. 11 The Shark Bay Scallop Fishery. L. Joll (1987)
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- No. 13 A Development Plan for the South Coast Inshore Trawl Fishery. (1987)
- No. 14 Draft Management Plan for the Perth Metropolitan Purse Seine Fishery. P. Millington (1987)
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- No. 16 The South West Trawl Fishery Draft Management Plan. P. Millington (1988).
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- No. 25 Rock Lobster Industry Advisory Committee report to the Minister for Fisheries November 1988. (1989)
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- No. 30 Foreign investment in the rock lobster industry. (1989)

- No. 31 Rock Lobster Industry Advisory Committee report to the Hon Minister for Fisheries September 1989. (1989)
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- No. 33 Guidelines for by-laws for those Abrolhos Islands set aside for fisheries purposes. N. Moore (1989)
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- No. 50 Draft management plan, South West beach seine fishery. D.A. Hall (1993)
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- No. 52 Review of bag and size limit proposals for Western Australian recreational fishers. F.B. Prokop (May 1993)
- No. 53 Rock Lobster Industry Advisory Committee, Chairman's report to the Minister for Fisheries. (May 1993)
- No. 54 Rock Lobster Industry Advisory Committee, Management proposals for 1993/94 and 1994/95 western rock lobster season (July 1993)
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- No. 57 Management arrangements for the southern demersal gillnet and demersal longline fishery 1994/95 season. (October 1993)

- No. 58 The introduction and translocation of fish, crustaceans and molluscs in Western Australia. C. Lawrence (October 1993)
- No. 59 Proceedings of the charter boat management workshop (held as part of the 1st National Fisheries Manager Conference). A. E. Magee & F. B. Prokop (November 1993)
- No. 60 Bag and size limit information from around Australia (Regulations as at September 1993) F. B. Prokop (January 1993)
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