

**A STRATEGY FOR MANAGING
THE RECREATIONAL CATCH OF
DEMERSAL SCALEFISH IN THE
WEST COAST BIOREGION**

FISHERIES MANAGEMENT PAPER NO. 228

Published by
Department of Fisheries
168 St. Georges Terrace
Perth WA 6000

March 2008
ISSN 0819-4327



Department of
Fisheries

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SECTION 1 INTRODUCTION

Current research shows both dhufish and pink snapper are being overfished throughout their natural distribution and baldchin groper is being overfished at the Abrolhos Islands.

The overall level of catch for dhufish and pink snapper in the West Coast Bioregion (north of Kalbarri to east of Augusta) needs to be reduced by at least 50 per cent as soon as possible.

It is important to recognise that each fishing sector (commercial and recreational) is capable of putting considerable pressure on demersal scalefish stocks (fish which live on the ocean floor in deeper water). So, in order to reduce the current level of fishing, comprehensive and effective management of the commercial, recreational and charter sectors is necessary to aid in the recovery of breeding stocks (proportion of fish that are old enough to reproduce).

The recreational management proposals that follow have been developed to deliver the required reduction in catches, while still allowing an enjoyable fishing experience for the majority of West Australians. If only a single management tool was used (e.g. a boat limit or closed season) the impact on recreational fishing would be huge. Therefore, the proposed management package has been carefully developed so that each management measure adds to the reduction required, while minimising the social and economic impacts as much as possible.

There is a high risk of these fish stocks collapsing if we fail to take corrective action now. If breeding stocks continue to decline, they may be reduced to the point that there are not enough mature fish available to take advantage of favourable environmental conditions for spawning and recruitment when they occur. If good recruitment does not occur, further management changes may be required.

In the case of dhufish, it is important to recognise that a significant reduction in effort and catch may not result in the recovery of this species in the short term. This is because successful breeding and growth of dhufish to a mature size has been shown to be highly sporadic and is likely linked to favourable environmental conditions (Ref: Fisheries Research Report No.163, 2007). Even a total closure of the fishery may not see recovery until such a time that favourable environmental conditions result in large numbers of fish being able to grow and contribute to the breeding stock.

Additional funds (\$5.2 million over four years) approved by the WA Government will be used to continue to monitor stocks and observe if the recreational management 'package' eventually approved by the Minister for Fisheries (in conjunction with the new commercial arrangements) is adequate to allow these fish stocks to rebuild.

Therefore, it will be necessary to adopt a flexible management approach where, by monitoring the responses to management, we can learn how the fishery reacts to the new management package.

The health of these demersal stocks is likely to be indicative of other similar demersal species. Due to the multi-species nature of the fishery, the low survival rates associated with the release of some of these species, and the need to ensure that fishing effort (people taking or attempting to take fish) is not merely transferred to other similar demersal fish, the management arrangements should ideally cover all key demersal species.

Significant management measures have already been introduced for the commercial sector, with a new Management Plan (the West Coast Demersal Scalefish Fishery) commencing on 1 January 2008. This plan will limit the number of operators in the fishery and ensure commercial catches are contained to sustainable levels.

A closure to commercial line and net fishing in the Perth metropolitan area (between Lancelin and south of Mandurah) was also introduced on 15 November 2007, to provide immediate catch savings to vulnerable demersal fish stocks. However, it is important that the recreational sector is also managed and catches reduced to sustainable levels.

Catches by recreational fishers are particularly significant in the Perth metropolitan area and exceeded the commercial catch for some species. For example, 60 per cent of the dhufish catch in the metropolitan area was estimated to be taken by recreational fishers.

To provide a focused discussion the Minister for Fisheries, the Hon Jon Ford MLC has released a Ministerial Position Paper which outlines a 'package' of preferred options to best achieve the necessary 50 per cent reduction in recreational catches of demersal scalefish on the West Coast while still maintaining an enjoyable fishing experience.

The Ministerial Position Paper can be found at: www.fish.wa.gov.au

Your written comments must be submitted **by 5pm, Wednesday 30 April 2008**, and should be addressed as follows:

Minister for Fisheries
C/- Department of Fisheries
3rd Floor, The Atrium
168 St George's Terrace
PERTH WA 6000

Alternatively you can enter your submission online by visiting the Department of Fisheries' website address at: www.fish.wa.gov.au

SECTION 2 REVIEW PROCESS AND OVERVIEW OF PUBLIC SUBMISSIONS

2.1 Review Process

Fisheries Management Paper 225 – *Managing the Recreational Catch of Demersal Scalefish on the West Coast* (FMP 225) was released for an eight-week public comment period, in September 2007.

During the public comment period, the Department of Fisheries held six public meetings at regional centres including Geraldton, Hillarys, Fremantle, Mandurah, Bunbury and Busselton, to promote awareness of the review process and the challenges facing the future management of recreational fishing. The public meetings were well attended, by approximately 450 people in total.

Valuable feedback and comments were received at these public meetings. Comments were recorded and taken into consideration when developing the proposals contained within this paper.

2.2 Overview of Public Submissions

The Department of Fisheries received a total of 138 written submissions for FMP 225. The comments and suggestions put forward in submissions provided valuable feedback. Consideration was given to the frequency with which issues were raised and the validity of the different comments.

The Department would like to thank everyone who took the time to attend the public meetings and make submissions. A list of all people and organisations that made submissions is attached at Appendix A.

Submissions clearly indicated that people agreed that there is a sustainability problem with key demersal finfish on the West Coast and that a new management approach will be required to reduce the recreational catch.

Some concerns were raised at public meetings about the nature of the research data itself, in particular, how it was derived and analysed. Most people, however, believed that better information is required, both on stock status and data on recreational catch and effort, to reduce future levels of uncertainty and improve management decision-making.

At public meetings and through submissions received, there was a high level of support for seasonal restrictions to protect spawning aggregations and to reduce catches. This approach was preferred to other tools such as tag systems or permanent area restrictions for this multi-species fishery.

Support was also received for a registration system for boat fishing for ‘at risk’ demersal species. Some respondents suggested that a compulsory logbook program should be linked to any registration system.

Key comments and suggestions made at the public meetings and in submissions have been highlighted in break-out boxes under the relevant section in this paper.

SECTION 3 ISSUES AND RECOMMENDATIONS

3.1 Managing the Recreational Catch of Demersal Scalefish

The following section outlines the proposed management arrangements for reducing recreational catches to sustainable levels to maintain breeding stocks and allow for good recruitment (successful breeding resulting in good numbers of juvenile fish) when environmental conditions allow.

When fish stocks (populations of fish) are depleted, the needs of the fish resource must take precedence, however, the social/economic impacts are also important considerations when comparing alternative management strategies. Any management arrangements will need to be supported by effective education, compliance, and monitoring programs.

3.1.1 Bag limits in the West Coast Bioregion

Key issues raised in submissions and at public meetings

- Support to apply the charter bag limit (four Category 1 “high risk” fish) to the whole recreational sector.
- Concern that bag limits will be reduced to a level that will not make it worthwhile going for a day’s demersal fishing.
- Need to recognise the multi-species nature of the fishery, and that species can’t be managed individually.
- Baldchin groper is very susceptible to barotrauma (effects from being caught in deeper water) – reducing the bag limit will not necessarily reduce the catch if people have to put back large numbers of baldchin which will more than likely die.

Mixed bag limit for Category 1 “high risk” fish

To reduce the overall number of demersal fish a person can catch on a single trip, it is proposed that the current mixed bag limit for Category 1 “high risk” fish be reduced from seven to four. The 2005/06 creel survey (Sumner *in press*) indicates that this measure will help reduce catches in the Midwest and Southwest zones. In the case of the Metropolitan Zone, it will help protect the ‘savings’ gained from the removal of commercial fishing effort.

The new limit of four for “high risk” species still represents a good catch that would meet the expectations of the majority of recreational fishers.

Species bag limits

Further reducing the individual daily bag limit for species such as dhufish would have a limited capacity to further constrain the catch, due to mortality factors generated by catch and release fishing – particularly in deep water.

Proposal A

That the current mixed daily bag limit for Category 1 “high risk” fish is reduced from seven to four.

Note: A list of all Category 1 “high risk” fish in the West Coast Bioregion is contained in Appendix B

3.1.2 Boat limits in the West Coast Bioregion

Key issues raised in submissions and at public meetings

- Support was expressed in both submissions and at public meetings for using a boat limit to help reduce catches.
- Concerns were expressed by the charter industry over the impact of a boat limit on charter clients.

Most recreational fishers act responsibly and limit their catch to what they can eat fresh. However, there have been reports of some boat fishers targeting spawning aggregations (schooling fish) and capturing excessive quantities of fish. This type of concentrated fishing activity has the potential to further seriously deplete the breeding stock of certain vulnerable demersal scalefish species such as dhufish and pink snapper.

To reduce the targeting and capture of excessive quantities of fish, two options for a boat limit are proposed. The first option is a sliding scale limit, depending on the number of people on the boat. The second option is a boat limit of two daily bag limits for Category 1 fish (i.e. eight Category 1 fish per boat).

The boat limit will be effective in limiting catches in the Midwest and Southwest zones. However, it will have little impact in the Perth metropolitan area where catches per boat are lower. In conjunction with a seasonal restriction, the boat limit will become the primary tool to reduce recreational catches to sustainable levels.

A lower boat limit could reduce catches more significantly (e.g. boat limit of four). However, it was felt this would have a significant impact on the social amenity values of recreational fishing and that, on balance, the proposed limit, used in conjunction with a seasonal restriction, is considered a more appropriate way forward.

The impact of a boat limit in terms of achieving reductions in recreational catches will be greater in the Kalbarri (17 per cent), Midwest (13 per cent) and South Zone (nine per cent). While the boat limit will have less impact on catches in the Metropolitan Zone (two per cent), the boat limit will help protect the 'savings' made from the removal of commercial fishing effort and ensure these fish are not then captured by recreational fishers in the Metropolitan Zone.

In recognition of the larger number of people on charter boats, it is also proposed that a daily bag limit of two Category 1 fish per client should apply on charter boats in the West Coast Bioregion.

The illustrations below indicate the impact of a boat limit on recreational fishers other than charter fishers in each zone. It should be noted the potential reduction in catches is calculated by deducting the proposed boat limit of eight from the catch landed, i.e. where nine fish were landed the saving is one fish ($9 - 8 = 1$).

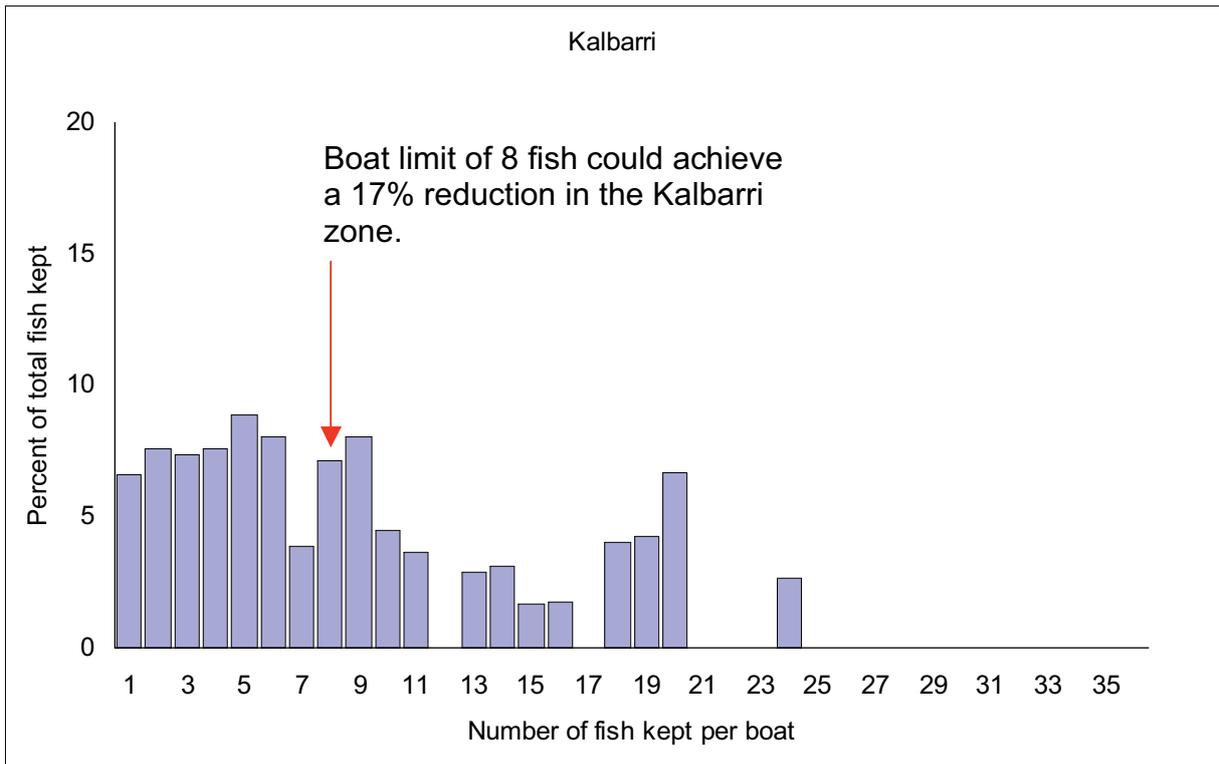


Figure 1 Percentage of the total number of key demersal scalefish kept per boat in the Kalbarri zone on trips where one or more fish was kept (2005/06).

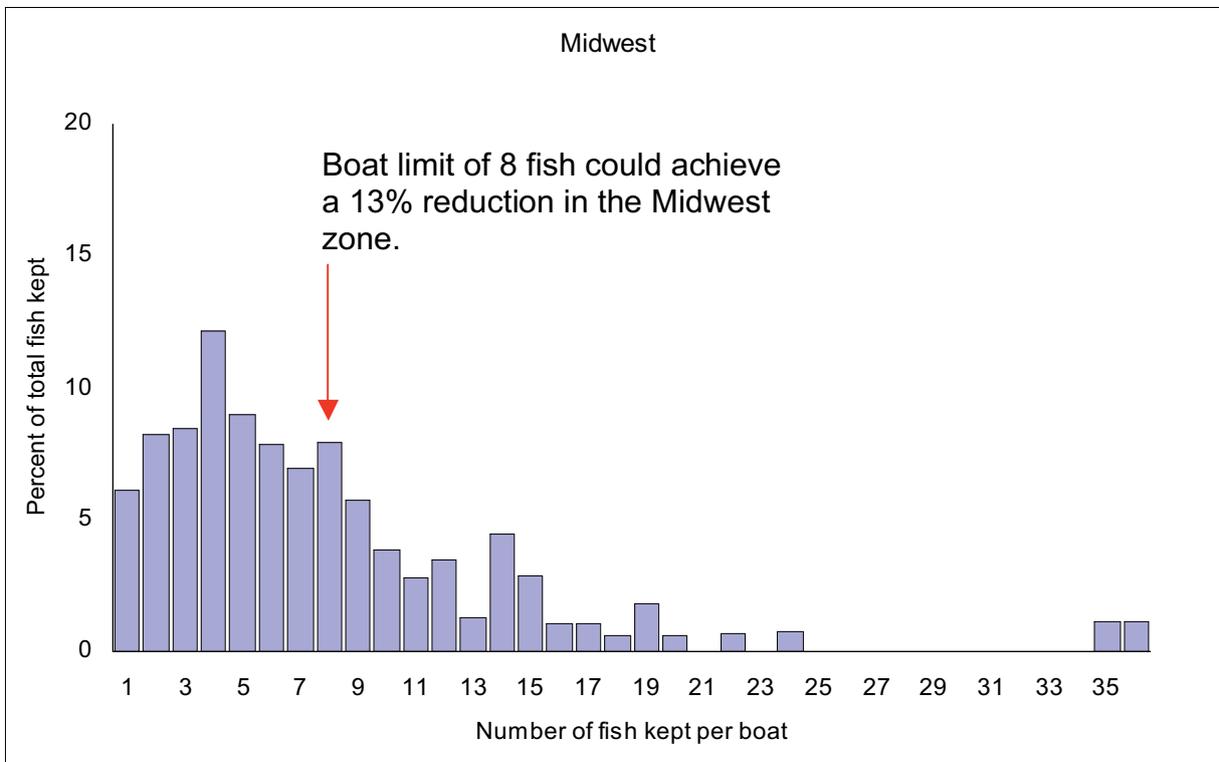


Figure 2 Percentage of the total number of key demersal scalefish kept per boat in the Midwest zone on trips where one or more fish was kept (2005/06).

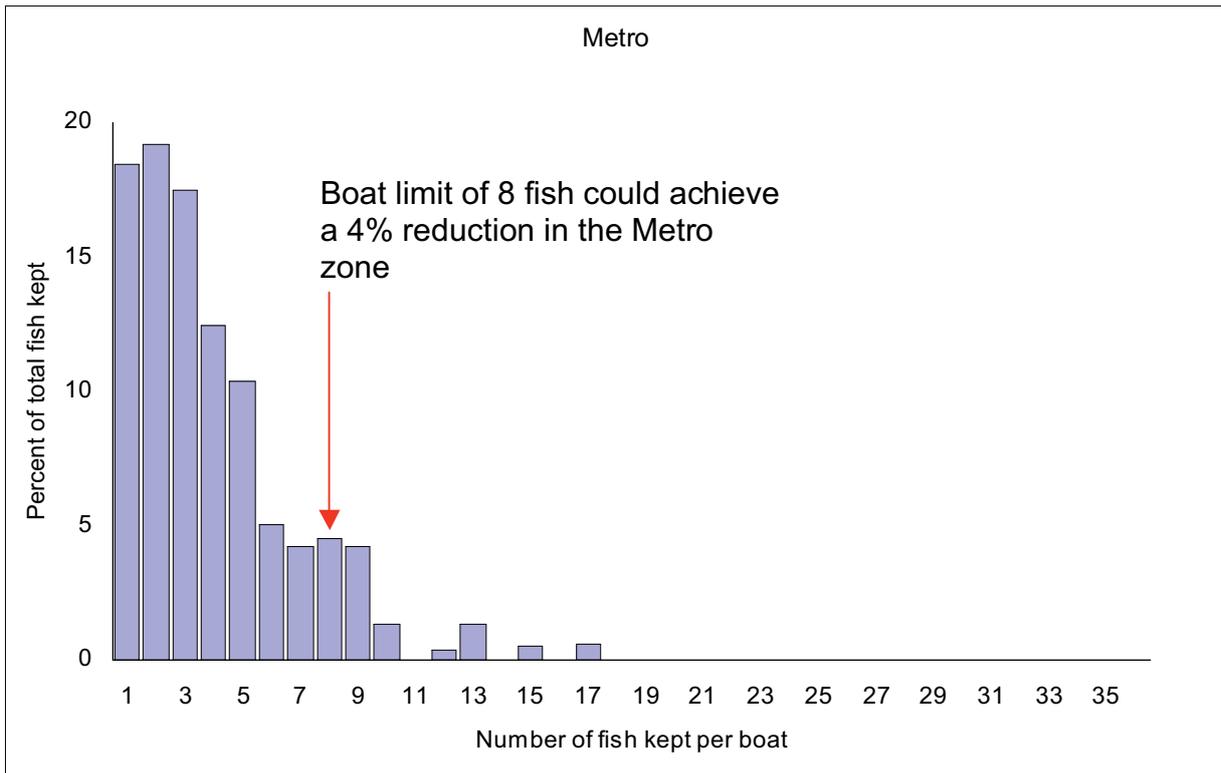


Figure 3 Percentage of the total number of key demersal scalefish kept per boat in the Metropolitan zone on trips where one or more fish was kept (2005/06).

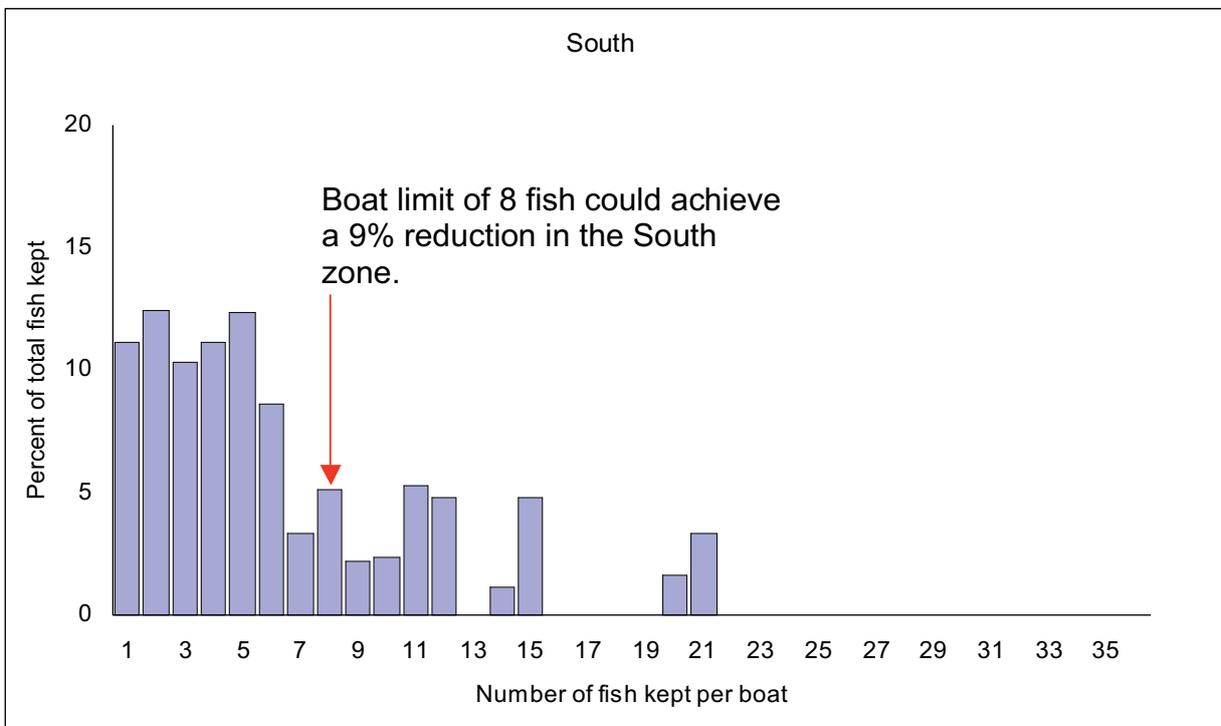


Figure 4 Percentage of the total number of key demersal scalefish kept per boat in the South zone on trips where one or more fish was kept (2005/06).

Proposal B

B (i) That a boat limit of two daily bag limits for Category 1 “high risk” fish is introduced (i.e. eight Category 1 “high risk” fish) for the West Coast Bioregion. Where five or more fishers are onboard a recreational boat, an additional two Category 1 “high risk” fish per person (over and above the boat limit) should be permitted for the fifth and additional fishers.

OR

B (ii) That a boat limit of two daily bag limits for Category 1 “high risk” fish be introduced (i.e. eight Category 1 “high risk” fish) for the West Coast Bioregion. Charter boats will be allowed to have a boat limit of two fish per customer.

3.1.3 Size limits

Key issues raised in submissions and at public meetings

- Increase size limit for pink snapper.
- Remove size limits for species that have a high mortality due to barotrauma.
- If size limits were removed, people would not be happy with only two 25cm dhufish.
- High grading (returning a dead fish to the water if a larger fish is captured) is an issue if size limits are removed.

Minimum legal size limits generally apply equally to both the recreational and commercial sectors, particularly when they have a biological basis.

Some species (e.g. dhufish and baldchin groper) are susceptible to barotrauma (effects of being caught in deepwater) and require more careful management consideration. A frequent suggestion received in submissions is that removing size limits for these species will reduce overall mortality because fewer fish will be released before a bag limit is achieved.

The removal of the minimum size limit for dhufish is not supported for several reasons;

1. Most juvenile dhufish are caught in shallow waters where there is a greater chance of post release survival.
2. There is potential for increased effort targeting dhufish in shallower waters (< 20m) that are accessible to a larger number of boats and anglers over more days.
3. Small dhufish can be found in small ‘schools’ in shallow waters; allowing these fish to be targeted could negate any benefit from reducing barotrauma-related mortality.
4. The incidence of high grading will increase, due to the large number of small deceased fish discarded as a result of the overall tight bag and boat limits.
5. It sends a message to the community that it is okay to catch fish that have not been able to spawn successfully, which is contrary to education and extension advice.

Pink snapper have been shown to be more ‘resilient’ to deepwater capture and are not as susceptible to the effects of barotrauma when compared to species such as dhufish and baldchin groper.

Research undertaken by the Department of Fisheries also indicates pink snapper mature at approximately 50cm on the lower west coast (south of Kalbarri) compared to around 41cm in the Gascoyne Region. Due to a higher size at maturity and survival rate of released fish, it is proposed to increase the minimum legal size limit for pink snapper from 41cm to 50cm from the Midwest Zone (just north of Port Gregory) south to Augusta.

Proposal C

The size limit for pink snapper is increased from 41cm to 50cm in the West Coast Region from the Midwest zone – 28 degrees South (just north of Port Gregory) to Black Point near Augusta.

3.1.4 Seasonal restrictions

Key issues raised in submissions and at public meetings

- Support to protect fish when they are spawning.
- A restriction on fishing for certain species during their spawning season should apply to both commercial and recreational fishers.
- Support for the extended Cockburn Sound pink snapper spawning closure.
- Dhufish appear to aggregate to spawn off the “Cape to Cape” area over summer.
- There was stronger support for the use of seasonal restrictions as the main management tool over the use of other tools such as permanent restrictions and a tag system.

The proposed new bag, boat and size limits will not achieve the required reduction in fishing catches that are currently necessary to protect breeding stocks. Therefore, other additional measures such as the use of seasonal restrictions or tags are required.

In submissions received on FMP 225 there was general support for the use of seasonal restrictions to assist in managing the recreational catch, as opposed to issuing a limited number of tags or licences.

Given that species such as dhufish are part of a multi-species demersal scalefish fishery, management action needs to be considered in the context of a seasonal restriction prohibiting the take of those species which are typically taken in the fishery, e.g. dhufish, pink snapper, baldchin groper, breaksea cod or red snapper.

The duration of any seasonal restriction needs to take into account the catch and effort at different times of the year and possible increases in the ease of catching fish – such as when they group up to spawn. The highest catch and effort levels by recreational fishers occur over the period Spring to early Autumn.

Dhufish are believed to spawn in the period December to March, while pink snapper outside Cockburn Sound and baldchin groper are also spawning over Spring to Summer.

Based on 2005/06 creel survey results, a seasonal restriction for demersal fishing in the West Coast Bioregion from 1 November to 28 February would provide significant protection for spawning demersal scalefish and could reduce catches, noting 47 per cent of dhufish and 41 per cent of pink snapper are caught over this period.

It cannot be assumed that the catch reduction will be as high as the current catch taken during this period, as experience in other fisheries, such as the Shark Bay inner gulf snapper fishery, has shown some effort is transferred to the open months of fishing. This highlights the importance of an ongoing monitoring program of recreational catch and effort.

While a seasonal restriction over this period will have a high social impact (restriction over the summer school holiday period), it may deliver substantial catch reductions and protect fish during the spawning season. For these reasons, it is seen as having a lower risk than the other options and is the preferred strategy.

A second option would be a seasonal restriction from 15 October to 20 December. This would have less social impact and provide only limited protection for spawning dhufish, pink snapper and baldchin groper. The potential reduction in catches is also greatly reduced, as only 14 per cent of dhufish and 16 per cent of pink snapper are caught over this period. For these reasons this is seen as a medium-to-high risk option, as it may not provide significant reductions in catch or protect spawning fish.

An alternative to restricting fishing over part of the spawning season would be to apply a winter restriction from 1 July to 30 September (noting lower recreational catches over winter). While this option may have less social impact, it is the least preferred option and would be considered high risk, as it affords no protection to spawning fish and will not provide the required reductions in catches.

Due to the multi-species nature of the fishery, any spatial and temporal restrictions would need to include the take, landing and possession of all demersal species during the seasonal restriction. Fishing for other species such as whiting, squid, tailor, herring and trolling for pelagics would be allowed during the seasonal restriction period.

It should be noted that under all these seasonal restriction options, it is recommended that the current seasonal restriction to protect spawning pink snapper in Cockburn Sound will remain in place.

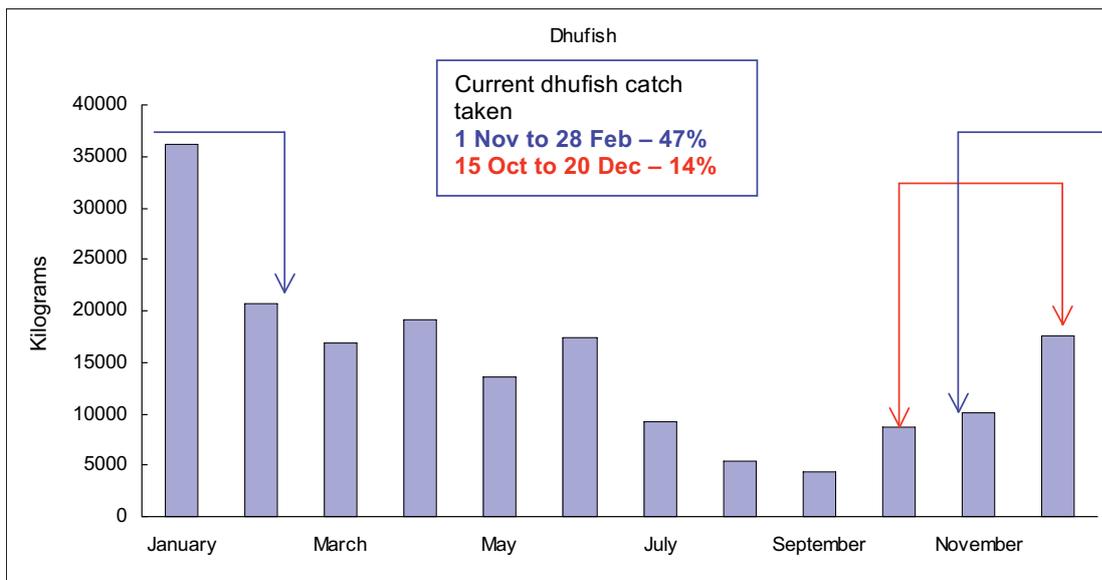


Figure 5 Catch of dhufish by month across the West Coast Bioregion 2005/06.

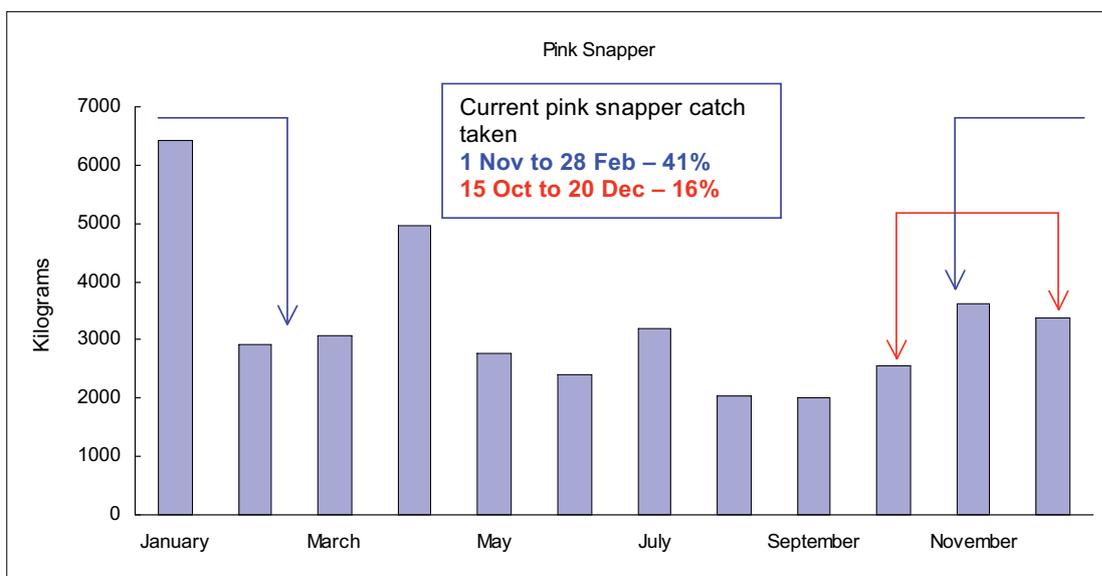


Figure 6 Catch of pink snapper by month across the West Coast Bioregion 2005/06.

Proposal D

It is proposed the following species would be protected during the seasonal restriction

Species	
Dhufish	Red snapper
Pink snapper	Blue groper
Baldchin groper	Queen snapper (blue morwong)
Tropical snappers and sea perches	Red emperor
Cods – Family Serranidae (inc. breaksea, harlequin, grey banded, Rankin and estuary)	Hapuku/bass groper/trevella

(Timing of a seasonal restriction – three options)

D (i) That the take, landing and possession of demersal scalefish species (as listed above) be prohibited in the West Coast Bioregion from 1 November – 28 February (this option could reduce catches significantly; provides significant protection for spawning dhufish, pink snapper and baldchin groper; and is seen as the lowest risk option).

OR

D (ii) That the take, landing and possession of demersal scalefish species be prohibited in the West Coast Bioregion from 15 October – 20 December (this option could have some impact on catches, provides a lower level of protection for spawning demersal fish and is considered a medium/high risk option).

OR

D (iii) That the take, landing and possession of demersal scalefish species be prohibited in the West Coast Bioregion from 1 June – 30 September (lower impact on catches and does not provide any significant protection for spawning fish – this is the highest risk option).

3.1.5 Fishing competitions

Key issues raised in submissions and at public meetings

- The potential impact of large-scale fishing competitions on stocks, and the risk of localised serial or seasonal depletion of key demersal species.
- The commercial nature of some competitions, with revenue raised from entry fees and sponsorship used to benefit clubs.
- The growing interest in commercial-scale competitions which attract hundreds of entrants and offer significant prizes.
- Potential for competitions to encourage high grading and catch and release to achieve the best chance of winning. This is not conducive to the objective of minimising released fish and fish mortality.

A number of large public fishing competitions are held each year along the West Coast Bioregion targeting demersal fish species. These competitions are usually hosted by an angling club and many offer significant prizes for the heaviest fish of particular species. Submissions to FMP 225 raised concerns about the targeting of ‘at risk’ demersal fish at public fishing competitions, with calls for those competitions to be banned.

Large-scale fishing competitions have the potential to impact on stocks, by increasing the risk of localised depletion of key demersal species. Given the significantly depleted state of demersal

stocks, the Department of Fisheries does not believe it is appropriate for large-scale fishing competitions to target demersal fish stocks in the West Coast Bioregion.

Rather than legislate a prohibition on targeting demersal species, it is more appropriate in the first instance to enter into dialogue with clubs, to discourage targeting high risk demersal species during public competitions.

Proposal E

That liaison with fishing clubs is undertaken to discourage public fishing competitions in the West Coast Bioregion from targeting Category 1 “high risk” demersal fish in prize categories.

3.1.6 ‘Wilderness’ fishing areas

Key issues raised in submissions and at public meeting

- Concern expressed over the decision to prohibit the take of baldchin groper at the Abrolhos Islands. Consideration should be given to alternative management arrangements, including:
 - Reducing bag limits (as per interim management arrangement for charter fishing).
 - Introducing a ‘mixed’ bag limit for demersal fish.
 - Including the take of all demersal fish in the current seasonal restriction.
 - To make the Abrolhos Islands a ‘no-take-away’ or ‘limited-take-away’ area.

To manage the Abrolhos Islands as a wilderness or “low-take” fishing area and recognise the high conservation value of the offshore island group, it is proposed that a reduced possession limit apply at the islands for the next two years, prior to the area being managed as a ‘no-take-away’ area. Under a ‘no-take-away’ scenario, people will be able to enjoy fishing around the islands, with a focus on catching fresh fish to eat while at the islands. However, no fish will be permitted to be transported back to the mainland.

Phasing in this strategy will allow time for charter operators who focus on fishing tours to restructure their businesses and move their activities to providing more eco-based tour experiences.

Proposal F

F (i) That the finfish possession limit at the Abrolhos Islands and within the Fish Habitat Protection Area be reduced to 10kg of fillets or one day’s bag limit of whole fish – this possession limit can be transported back to the mainland.

F (ii) The reduced finfish possession limit outlined in F (i) should remain in place for two years after which time the Abrolhos Islands will be managed as a ‘no-take-away’ area – no transportation of fish back to the mainland.

Note: The above package would provide adequate protection for baldchin groper at the Abrolhos. In the event the package of arrangements was supported, the current interim ban (1 February – 31 October) on the take of baldchin at the Abrolhos could be lifted.

3.1.7 Gear restrictions

Key issues raised in submissions and at public meetings

- Concern was expressed in some submissions over spear fishing on compressed air.
- Spear fishing is highly selective and limited to relatively shallow water for demersal species and has no barotrauma issues.
- Using electric reels in deepwater should not be allowed for recreational fishers.
- Release weights should be made compulsory for people fishing for demersal species.

Anecdotal evidence suggests that most spear fishermen that target demersal species do so by free diving. These individuals are often highly skilled and selective in the fish they take and are limited to relatively shallow water (less than 20m). There was some concern expressed in submissions that spear fishing on compressed air was not ‘sporting’ and some species such as dhufish are very vulnerable, given their tendency to live around major demersal structures.

To help protect vulnerable species such as dhufish, it is proposed that spear fishing on compressed air be prohibited.

Information provided in the 2005/06 recreational creel survey (Sumner *in press*) show the recreational fleet is fishing further offshore in deeper water. Species targeted in the deep-water environments (100m – 250m) include pink snapper, red snapper, grey-banded cod and hapuku.

Species such as hapuku and grey-banded cod are very slow-growing and low in abundance. These stocks could be quickly placed ‘at risk’ if fishing pressure increases, particularly through the use of electric reels, which allow fishers to effectively fish in waters up to 500m in depth. To provide protection for these deep-water species, it is proposed that the use of electric reels be prohibited for recreational fishers.

Proposal G

G (i) Prohibit the take of fish by spear fishing on compressed air (SCUBA).

G (ii) Prohibit the use of power-assisted fishing reels (e.g. electric fishing reels, etc) by recreational fishers in the West Coast Bioregion (exceptions for disabled fishers, etc, can be provided).

3.2 Other Management Options

3.2.1 Permanent closed areas and corridor restrictions

Key issues raised in submissions and at public meetings

- Risks transferring effort to other areas with no net benefit.
- Great deal more research required to justify and identify where permanent closures should go.
- Significant compliance cost.
- High resources requirement, education difficulties.
- Rolling or corridor closures are unlikely to deliver long-term benefits and will likely trigger ‘gold rush’ effort pulses on re-opening.

In FMP 225, closed areas were outlined as a possible tool to reduce catches and protect breeding stocks. To be meaningful, spatial restrictions would need to be located in areas where they can provide protection for large numbers of fish, or over an area which is particularly important to spawning.

Submissions to FMP 225 indicated more support for seasonal restrictions as the primary tool to reduce catches, rather than permanent spatial closures, or rolling corridor closures.

The research information currently available is inconclusive as to what areas could be considered for permanent closure and more research is required to better understand recruitment patterns of demersal fish stocks. Given the limited movement of dhufish stocks and uncertainties around larval drift (how far eggs/larvae travel), it is unclear what areas may be important for the management of dhufish stocks.

Consequently, no permanent spatial or corridor closures are recommended at this time. If however, future research indicates key areas exist which are the ‘source’ of the stock for species such as dhufish, closed areas may be considered as an appropriate tool. It should be noted that the closures proposed in Marine Park planning processes such as the Cape-to-Cape Marine Park would not provide any significant reductions to demersal scalefish catches or protection for breeding fish. Any permanent restricted area would need to be on a far larger scale than any closure proposed in a Marine Park planning process and would likely cover both State and Commonwealth waters (i.e. within three nautical miles of the coast and beyond).

3.2.2 Tag system

Key issues raised in submissions and at public meetings

- Costly, socially unacceptable.
- Encourages high grading beyond any other measure.
- Cumbersome, inequitable and expensive to police.
- Tags should be linked to a boat.

In FMP 225 a tag system was outlined as a possible tool to reduce catches and protect breeding stocks. Significant opposition was received from respondents to FMP 225 for the introduction of a tag system. The main concerns raised were related to the cost of the tags and the cost of compliance, equity of access to tags, and potential impact of high grading with a tag system.

A tag system will not be considered at this point of time for the West Coast Bioregion.

3.2.3 Restocking and stock enhancement

Key issues raised in submissions and at public meetings

- Consideration should be given to artificially breeding and stocking dhufish and snapper to restock or enhance the fish stocks.
- Consider the feasibility of pink snapper aquaculture for commercial sale to take pressure off wild stocks.
- Research stock enhancement as part of the overall solution.

The potential for restocking dhufish and other demersal species was raised as a suggestion at public meetings as a potential tool to replenish fish stocks using hatchery-reared juveniles. Technological advances have improved the ability of aquaculture to produce mass numbers of fingerlings, however, there have been limited successes using stock enhancement to aid wild stock fisheries, particularly in open ocean environments. Most restocking success has been achieved in impoundments, such as barramundi stocked in dams in Queensland, or in rivers.

In Western Australia, attempts to aquaculture dhufish within a ‘tank environment’ have met with limited success. Put simply, dhufish is a difficult species to culture. It does not possess key attributes needed for successful mass rearing and consequently the production of large

numbers of juveniles would be economically (and probably technologically) prohibitive and ecologically risky.

While restocking has a potential to ‘boost’ stocks, experiences in the USA, Canada and with freshwater species in the eastern states of Australia have shown that large-scale restocking can in fact cause the collapse of some wild fisheries.

Prior to considering restocking as an option, some of the risks that would need to be carefully evaluated include:

- inter-species competition between highly abundant hatchery-reared fish and fish with similar ecological requirements;
- displacement of wild stock (by hatchery-reared fish);
- introduction of diseases and parasites;
- loss of genetic diversity; and
- ecosystem shifts (shifts in the distributing of biomass of other species).

Re-stocking is a major cost, especially in order to maintain appropriate genetic management of the broodstock. It is for all these reasons the Department of Fisheries believes that restocking should only be considered if normal management fails.

There is a strong argument for using aquaculture to supply the increasing demand for table fish such as snapper. In collaboration with the Aquaculture Development Council, the Department of Fisheries is presently exploring the means to facilitate the commercial production of marine species such as snapper.

Where it is well located, managed and operated, marine fish aquaculture production has generally proven more economical than commercial fishing, in terms of unit production costs; so it is likely that fish produced from aquaculture may represent a sustainable future source of premium-quality table fish at a competitive retail price.

3.3 Information for Management – Research, Catch and Fishery Performance

3.3.1 Future research on demersal species

Key issues raised in submissions and at public meetings

- More research is needed to monitor stocks and assist in decision-making.
- Support from anglers to be involved in recreational fishing research programs.
- Major creel surveys should be conducted every three to four years.
- Set up collection points for samples (e.g. fish frames).
- Log books should be linked to a registration system.
- Funds from any registration system need to go back to managing recreational fishing.
- Introduce a ‘user pays’ system.
- A registration system should be considered if it helps with the collection of research information.

In order to effectively monitor recreational catch and effort, there is a need to accurately assess how many people fish, how often they fish, where they fish and how many fish they catch. This information has previously been estimated through a combination of recreational creel surveys and annual phone surveys.

In recognition of the need for additional research information, the Government has committed an additional \$5.2 million over the next four years for biological research and catch monitoring.

While these funds will be used to provide valuable data on the fishery, in the long-term there will still be a need to provide accurate and cost effective information on recreational catch and effort.

3.3.2 Voluntary registration system

To facilitate the collection of this data, a voluntary registration system for fishers targeting all ‘at risk’ demersal fish is seen as a highly desirable component of the long-term research strategy. A voluntary registration system will provide a ready-made ‘database’ to more effectively canvass recreational fishers for telephone or mail surveys to obtain catch and effort information.

Implementing such a system will require the development of appropriate processes by the Department of Fisheries, given the number of anglers involved, and may require a number of years to fully implement.

A voluntary registration system could apply to individuals or boats. Under a voluntary boat registration system, a logbook could be attached to the registration, with a requirement that the skipper of the vessel complete catch returns. These returns would record details of the trips undertaken and fish caught. Under this system, there is the opportunity for the skipper to take out ‘once a year’ fishers, children, etc, without them needing to have a licence, while still providing necessary information for management.

To ensure all revenue generated through a registration system is used to directly benefit recreational fishing, any funds raised would be paid into the Recreational Fishing Fund (RFF) established under Section 239 of the *Fish Resources Management Act 1994* (FRMA). All existing recreational licence fees are already placed in the RFF and can only be expended on recreational fishing. Any unexpended balances at the end of a financial year are carried over to the following year.

Proposal H

That a voluntary registration system be implemented (within two to three years) to provide accurate and cost-effective information on recreational catch and effort for demersal scalefish in the West Coast Bioregion.

3.4 Improving Community Stewardship – Education and Compliance

3.4.1 Compliance and education

Key issues raised in submissions and at public meeting

- There is no point having new rules if they can’t be enforced.
- There is a need for more Fisheries Officers.

A compliance risk assessment has been undertaken for recreational fishing for marine scalefish from boats and the activity was rated as a high risk due to the increasing population, participation in recreational fishing and the concerns around the sustainability of demersal scalefish stocks. It is considered that the Department should be achieving a five per cent contact rate in this fishery at the very least. To achieve this, the WA Government is currently considering funding for additional Fisheries and Marine Officers for the West Coast Bioregion.

The proposed changes to the management arrangements for demersal scalefish stocks across the State is also likely to require an increase in resources to provide community education. There will be a need to develop and implement community education and interpretation programs to encourage responsible recreational fishing practices, promote and establish conservation and environmental values in recreational fishers, and to provide information and advice to assist with compliance with recreational rules.

SECTION 4 HOW WILL THE COMMERCIAL FISHERY BE MANAGED?

The West Coast Demersal Scalefish Fishery Management Plan commenced on 1 January 2008. The new management plan will regulate commercial fishing effort to ensure catches remain within total allowable commercial catch limits determined for the West Coast Bioregion. Only operators who have a permit to fish in this fishery can take demersal scalefish. The Metropolitan zone has been closed to commercial hand and dropline fishing for demersal scalefish and demersal gillnet and longline fishing.

The introduction of this plan (following a four-year process) reduced commercial access to the fishery from a potential 1,250 fishing boats to approximately 70.

Once access has been finalised, an allocation process will see each permit holder issued with a proportion of available fishing days. The introduction of 'effort days' in 2009 will result in fishing effort being capped to ensure catches are restricted to a prescribed Total Commercial Catch (TCC).

The commercial fishers permitted to operate under the new demersal scalefish management plan will be required to comply with a comprehensive set of management arrangements including, but not limited to, limits on the number of fishing days, the use of Vessel Monitoring Systems (VMS), fine-scale reporting of catch and effort, gear restrictions and restricted areas of operation.

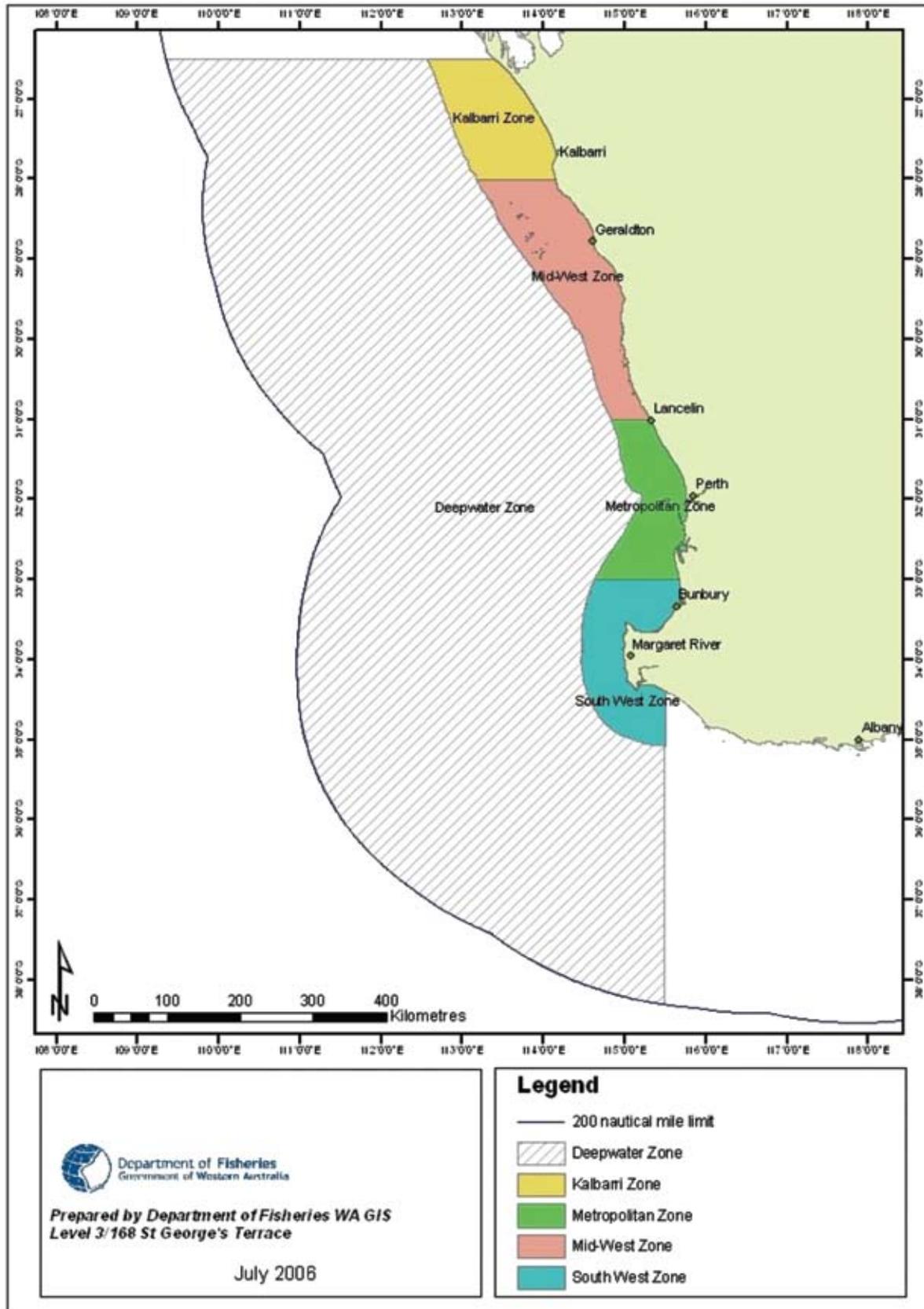


Figure 7 Zones of management for the West Coast Demersal Scalefish Fishery.

**APPENDIX A NAMES OF INDIVIDUALS AND ORGANISATIONS
WHO FORWARDED SUBMISSIONS TO FMP 225**

Steve Aspland	Astrid Herlihy	W.T. Reilly
James Ayliffe	John Hogan	Peter Rooke
Mark Ayling	Matt Howard	Norm Ryan
John Baas	Ken Howell	Gerard Ryder
George C. Bass	Kevin Hughes	Mark Scandrett
Darren Beauglehole	Frank Hulsdunk	Mario Scarpuzza
Ken Bentley	Bruce James	Antony Sercombe
Jan Bowen	Marcia Johnson	A. Sharp
Ken Bowen	Marc Jurinovich	Roger Shields
Les Brookes	Toni Jurinovich	Pat Shinnick
Geoff Bury	Tony Jurinovich	I. Smith
Brien Bush	Terry Knight	Kevin Smith
Troy Buswell MLA	Brian Langley	Laurie Smith
Jamie Chester	Garry Lilly	Nola Smith
Noel Cobby	Noel Long	Phil Somerville
Bruce Cockman	Simon Longbottom	Peter Stratford
Jeff Cockman	D. G. Lukey	Eric Sullivan
Terry Cockman	Sandra Lymbery	Chris Thomas
David Coghlan	Robin Lyons	Robert J. Thompson
Jay Cox	Raymond McDonald	Phil A. Tickle
Andrew Cribb	Paul McKeown	Beverley Tillman
Richard Cross	Des McLean	Ken Treloar
Terry Cullen	Peter McMullen	Bernard Vale
Greg Dale	Ray Marsh	Paul Vos
Charles de Beer	Greg Martin	James Waite
Ted Dickinson	Rod Mell	Kelly Walsh
Neil Dixon	Mark Michela	Chris Watt
Ray Dobson	David Miller	Neil Wehlack
David Donaldson-Stiff	Barry Mitchell	Lance Wheeler
Colleen Donnelly	Colin Molloy	David White
Tim Egerton-Green	Peter Mouchemore	Neil Williams
Rusty Ellis	Shaun Murphy	Keith Willison
Raphael Ellul	Mick Murray MLA	Robert Wilson
P. Facchini	Lawley M Reilly	Tony Wilson
Brian Fearn	Karen Osborn	John Wise
David Findlay	Peter Osborn	Mark Wong
Shane Garton	Rodney Pallister	Christopher Wood
Howard George	Wally Parkin	
Antony Giele	Rick Playle	
Richard Griechen	Alan Polglaze	
Alan Guthrie	Peter Powell	
Henry Hall	Robin Randall	
Travis Hansen	Graeme Rayner	
John Harcombe	Lynley Rayner	
Bill Hartfield	Terry Redmond	
Roley Hawkins	Richard Reid	

APPENDIX A CONTINUED

Groups/Associations/Committees

- Abrolhos Islands Management Advisory Committee
- Charter Boat Owners Association
- Dongara Professional Fisherman's Association Inc.
- Midwest Regional Recreational Fishing Advisory Committee
- Peel Regional Recreational Fishing Advisory Committee
- Recfishwest
- Recreational Fishing Advisory Committee
- South West Regional Recreational Fishing Advisory Committee
- Western Australian Fishing Industry Council

APPENDIX B CATEGORY 1 FISH IN THE WEST COAST BIOREGION

CATEGORY ONE - HIGHEST RISK

Mixed daily bag limit - 7 per angler

Species are generally long-lived, slow-growing, mature at four-plus years, form semi-resident populations, are vulnerable to localised depletion due to their life history, or are of low abundance or highly targeted.

SPECIES	SCIENTIFIC NAME	MINIMUM LEGAL SIZE	BAG LIMIT
Barracuda	<i>Sphyræna barracuda</i>	N/A	2
Billfish (sailfish, swordfish, marlins)	Families Istiophoridae and Xiphiidae	N/A	1
Cobbler	<i>Cnidoglanis macrocephalus</i>	430mm	4 (Swan-Canning closed to cobbler fishing.)
Cobia	<i>Rachycentron canadus</i>	750mm	2
Coral trout and coronation trout – combined	<i>Plectropomus</i> spp. and <i>Variola louti</i>	Coral – 450mm	1
Cods – combined. (inc. breaksea and harlequin) Note: within this bag limit you may not take more than two estuary or Rankin cod combined.	Family Serranidae	<i>Ephinephelus</i> sp. over 1,000mm or 30kg are protected. Breaksea – 300mm Estuary – 400mm	4
Dhufish, Western Australian	<i>Glaucosoma hebriacum</i>	500mm	2
Emperors – combined (Nor' west snapper)	Family Lethrinidae	Spangled – 410mm Blue-lined (black snapper) – 320mm Others – 280mm	4
Groper, baldchin and tuskfish – combined	<i>Choerodon</i> spp.	Baldchin, blackspot & blue tuskfish – 400mm	4
Groper, western blue	<i>Achoerodus gouldii</i>	500mm	1
Hapuku/bass groper/trevella and grey banded rock cod – combined	<i>Polyprion</i> spp., Family Centrolophidae and <i>Ephinephelus octofasciatus</i>	<i>Ephinephelus</i> sp. over 1,000mm or 30kg are protected	2
Mackerel – shark	<i>Grammatocynus bicarinatus</i>	500mm	2
Mackerel – Spanish, narrow-barred and broad-barred (grey) – combined	<i>Scomberomorus commerson</i> and <i>S. semifasciatus</i>	Narrow-barred – 900mm Grey – 750mm	2
Mackerel – wahoo	<i>Acanthocybium solandri</i>	900mm	2
Mahi mahi (dolphinfish)	<i>Coryphaena hippurus</i>	500mm	2
Mulloway	<i>Argyrosomus hololepidotus</i>	500mm	2
Red snapper - bight redfish, nannygai and swallowtail - combined	<i>Centroberyx</i> spp.	300mm	4
Parrot fish – combined	Family Scaridae	N/A	4
Pink snapper	<i>Pagrus auratus</i>	410mm	4 (Only 1 fish over 700mm from 'metropolitan waters' – Cape Bouvard to Two Rocks.)
Queen snapper (blue morwong)	<i>Nemadactylus valenciennesi</i>	410mm	4
Red emperor	<i>Lutjanus sebae</i>	410mm	2
Salmon, Australian	<i>Arripis truttaceus</i>	300mm	4
Samson fish/amberjack/yellowtail kingfish – combined	<i>Seriola</i> spp.	600mm	2
Sharks and rays – combined	Class Chondrichthyes	Whalers over 700mm interdorsal fin length are protected	2
Trevally, giant and golden – combined	<i>Caranx ignobilis</i> , <i>Gnathanodon speciosus</i>	N/A	2
Tropical snappers and sea perch (mangrove jack, fingermark, job fish, stripey sea perch etc.) – combined	Family Lutjanidae	Fingermark, mangrove jack and stripey sea perch – 300mm	2
Trout, brown and rainbow* – combined	<i>Salmo trutta</i> and <i>Oncorhynchus mykiss</i>	300mm	4
Tuna – southern bluefin, yellowfin, bigeye – combined	<i>Thunnus maccoyii</i> , <i>T. albacares</i> and <i>T. obesus</i>	N/A	2

GLOSSARY

Aggregations – Schooling fish. A strategy evolved by certain fish species to maximize the chance of successful reproduction.

Barotrauma – the effects from being captured in deep water.

Breeding stocks - proportion of fish that have reached maturity and are able to successfully reproduce.

Demersal – fish which live on the ocean floor generally in deeper water.

Fishing effort – amount of fishing pressure on fish stocks, e.g. number of fishers, days fished etc.

Pelagic – fish that generally live near the surface of the ocean or in shallow water. These fish typically migrate long distances during their life cycle, e.g. Spanish mackerel, mahi mahi, Australia salmon and herring.

Recruitment – reproduction resulting in numbers of juvenile fish entering the population.

Scalefish – all finfish species with the exception of sharks and rays.

West Coast Bioregion – the area of Western Australia situated between the Zuytdorp Cliffs, north of Kalbarri and Black Point, east of Augusta.