

Proposals for community discussion

**A QUALITY FUTURE FOR
RECREATIONAL FISHING
IN THE
SOUTH COAST**

A FIVE-YEAR STRATEGY FOR MANAGING
THE RECREATIONAL COMPONENT OF THE CATCH

by the South Coast Recreational Fishing Working Group

FISHERIES MANAGEMENT PAPER NO. 182

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FOREWORD

The South Coast Region between Black Point and the South Australian/Western Australian border offers a wide range of recreational fishing opportunities that expand over 1,200 km of near pristine coastline. River and estuarine systems, beaches and an offshore environment that hosts an array of popular cooler-temperate water recreational species make the South Coast Region different to any other region in WA.

With a growing population and advances in technology, fishing pressure will continue to grow and anglers will become more efficient at targeting fish, particularly offshore demersal species such as blue groper, dhufish, red snapper, breaksea cod and queen snapper.

There is also a clear need for recreational fisheries management to complement the existing management arrangements for the charter industry, and provide the necessary framework for recreational fishing to be incorporated into an integrated management framework with other fishing sectors.

Before catch allocations can be managed under an integrated management framework, it is first necessary to ensure that effective sectoral management arrangements are in place. Some fisheries are not highly managed (e.g. finfish) and a move to a higher level of management is essential for both the commercial and recreational sectors.

Complementing the regional recreational fishing strategies, a corresponding review of the unmanaged components of the commercial finfish sector (wetline) is also planned to ensure the effective management of the commercial catch.

To manage the recreational component of the catch and help protect the future quality of recreational fishing in the South Coast, representatives from the Department of Fisheries, Recreational Fishing Advisory Committee (RFAC), Regional RFACs, Recfishwest, and Volunteer Fisheries Liaison Officers met to develop the basis of a fishing strategy for the region. This strategy was then further developed through consultation with regional RFACs and stakeholder groups.

Community comment is now being sought on the draft management proposals. All submissions will be carefully considered before final recommendations are submitted to the Minister for Fisheries for his consideration.

I would encourage anyone who has an interest in the future of recreational fishing in the South Coast Region to carefully consider these proposals, which are aimed at maintaining or improving the quality and diversity of the region's recreational fisheries.

Your comments, ideas and support for this essential step forward in improving the management of recreational fisheries on the South Coast is needed - the future depends on you.

DOUG BATHGATE
CHAIRMAN
RECREATIONAL FISHING ADVISORY COMMITTEE

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SUMMARY OF PROPOSALS

Proposal 1 - Key principles for management

It is proposed that recreational fisheries management in the region be based on the following key principles which were endorsed during the West Coast and Gascoyne planning processes:

Government should ensure adequate funding is available for comprehensive research and management necessary for the effective management of recreational fishing.

Western Australia's recreational fishing resources are a highly valued community asset. To protect the future quality of recreational fishing, it is essential that the Government ensure adequate funding is allocated for effective management.

A key aim should be to ensure that the biodiversity of fish communities and their habitats and sustainability of fish stocks are preserved.

Management arrangements should take into account the biological characteristics of different species, their abundance, and the level of fishing pressure being exerted upon them. Fisheries management should therefore encourage fishing across a range of species, permitting a higher take of more robust species, and limit the take of more vulnerable species. Management arrangements must also be revised to account for increasing recreational fishing pressure.

Fisheries management should incorporate controls and measures that cover and anticipate increasing numbers of recreational fishers and their impact on fish stocks.

In the past, management has tended to react to problems as they arise. Management arrangements must recognise projected increases in fishing pressure, as well as impacts of planned developments in the region which may increase the number of visitors or focus fishing pressure in certain areas.

As new information from research becomes available on biology or stock status, management arrangements should be modified accordingly.

Management should be based on the best available information, and where critical information is unavailable, a precautionary approach that seeks to minimise risk to fish stocks should be adopted.

The concept of precaution requires management authorities to take pre-emptive action where there is a risk of severe and irreversible damage to fish resources and the environment. In a situation of high potential risk, and a lack or inadequacy of information, the concept of precaution requires the onus of scientific proof to be on those who intend to draw benefits from the resource and contend that there is no risk.

This contrasts with the existing situation where the Department of Fisheries may be subject to intense scrutiny to justify conservative management decisions which are based on limited available research.

Fishing rules should acknowledge that equitable access to fishing opportunities across recreational user groups is important.

There is a wide range of recreational user groups who may have different values or requirements. These include local residents, visitors, boat fishers, shore-based fishers, charter boat clients, spearfishers, netters, gamefishers seeking 'trophy' fish or fishers seeking a wilderness type experience to which a pristine environment may be as important as fishing quality.

A growing number of recreational fishers focus on quality and enjoyment of fishing and retaining a fish or two as a fresh feed, rather than accumulating large quantities of fish. The values of non-consumptive users of this resource, such as recreational divers, and passive users should also be recognised.

Fishing rules must endeavour to address the relative impacts of users on an equitable basis and that equity should be based on principles of ensuring 'fair and reasonable' access to the resource.

The value of recreational fishing should be clearly recognised and given proper weight in all government and community planning processes, for example, Marine Parks, industrial developments and any other future development which may impact on the environment on the South Coast.

The value of recreational fisheries must be recognised by the community in terms of both social and economic benefits. It is important that recreational fishing is documented as a legitimate use of fish resources and given due consideration in marine planning and catchment planning processes. Any development must be considered in terms of its potential impact on the aquatic environment and on the quality of recreational fishing.

Fishing rules should be kept simple, and where possible and practical, made uniform across the region.

Management strategies must be simple enough to be understood by the large numbers of occasional fishers and visitors to the region, while providing for effective conservation of the resource. Where possible, management arrangements should be consistent throughout the region.

Recreational fishing rules should be designed to protect the sustainability of stocks and manage the total recreational catch, as well as protect fish at vulnerable stages in their life cycle, for example, spawning aggregations.

Existing management arrangements do not currently place a ceiling on the total recreational catch. In the face of increasing recreational effort, it will become necessary for the total catch to be managed to ensure sustainability of stocks and preserve fishing quality. It is essential that recreational fishing is managed in a spirit of cooperation with the community, and the development of new management for the recreational fishery must take into account

community attitudes and values. This also needs to be reflected in commercial fisheries management.

The benefits from management of the total recreational catch should flow back to the recreational sector and be reflected in maintained or improved fishing quality and sustainability.

Management arrangements must be put in place to ensure that benefits in recreational fishing quality accruing from controls on the recreational take do not simply flow to the commercial sector. Currently, in all Western Australian fisheries, there is no mechanism to manage to total take of all sectors of the fishery.

Clear processes should exist to resolve resource sharing issues which support the integrated management of fish stocks.

It is outside the scope of this review to adequately resolve resource sharing and allocation issues. A clear process should be developed by Government as a matter of priority to resolve issues of this nature. This will assist in protecting the future quality of recreational fishing and ensure equity in catch as determined by Government policy.

Proposal 2 – Major catch survey

A major recreational catch survey be undertaken every three years to provide detailed information about the spatial and temporal distribution of recreational activity and catches on which to base management decisions.

As a subset, on an annual basis, information should be collected on indicator species and areas to monitor recreational fishing quality.

Proposal 3 – Structured logbook program

The Department of Fisheries introduce a structured angler logbook program in the South Coast Region for key species in specific regional areas. The logbook program needs to be tightly coordinated by the Department of Fisheries with regular feedback provided to logbook participants.

Department of Fisheries' Research Division advice

- The collection of ongoing catch data is of concern, particularly as commercial participation in coastal fisheries is in decline. The development of a structured logbook program run in conjunction with creel surveys may assist in providing useful catch and effort data. The structured logbook program would need to be accompanied by a species identification guide to ensure proper identification of key species, such as the different whiting and trevally species. Other forms of data collection, such as telephone surveys, may also need to be considered.

Proposal 4 – Priority species for research

Research should be undertaken on the following key recreational species in the South Coast (in order of priority) to provide information on species biology and stock structure. Predictive fisheries stock assessment models and, where practical, indices of recruitment are to be developed for these key species:

Species	<i>Research status</i>			
	Biology	Stock assessment	Exploitation status	Breeding stock level
Black bream	Wellstead and Walpole/ Nornalup Inlets only.	Yes – Commercial catch only.	Fully exploited.	Considered adequate.
King George whiting	Yes	Yes – Commercial catch only.	Fully exploited.	Considered adequate.
Silver trevally	Yes	N/A	N/A	N/A
Queen snapper	Limited.	N/A	N/A	N/A
Red snapper	Yes	N/A	N/A	N/A
Breaksea cod	Yes	N/A	N/A	N/A
Pink snapper (South Coast)	Limited – research project currently being undertaken.	N/A	N/A	N/A

Department of Fisheries’ Research Division advice

- Research into the biology of King George whiting has recently been completed.
- Research on silver trevally indicates the possibility of separate onshore and offshore stocks.
- There is a good understanding of the biology of red snapper (courtesy of an AFMA/FRDC project).
- Preliminary research into the biology of breaksea cod is complete. An additional study is planned to complement current knowledge.
- Research on West Coast and South Coast pink snapper stocks is currently being undertaken.

Proposal 5 – Fishing quality indicators

A range of ‘fishing quality indicators’ based on angler surveys should be developed to identify trends in fishing quality in the region and assist in the review of the effectiveness of this strategy.

These indicators should cover fishing quality, diversity and the value associated with the fishing experience.

It is proposed that the following species be used as key indicator species:

Indicator species	<i>Environment where species is most often found</i>		
	Estuarine	Inshore	Offshore demersal
	Black bream King George whiting Flathead	King George whiting Australian salmon Pink snapper Flathead Blue groper Silver trevally	Pink snapper Breaksea cod Samson fish Red snapper Queen snapper Harlequin fish

Department of Fisheries’ Research Division advice

- Catch and effort information has been gathered on the major estuarine species.
- Catch and effort information is currently not available for demersal offshore species for the South Coast Region, other than charter boat logbook data.
- Charter boat logbook data indicates that dhufish and blue groper are not key offshore demersal species on the South Coast.

Proposal 6 – Bag limits

Category 1 Fish – total mixed daily bag limit of 7			
<p>Category 1 Fish are considered to have the highest risk of overexploitation. Many fish in this category have low catch rates and levels of abundance, while others may be highly valued for their fishing and eating qualities. Many Category 1 Fish are slow growing and mature at four years plus. For these reasons, Category 1 Fish require a high degree of protection.</p> <p>(Note: *denotes proposed change to current management)</p>			
Species	Species bag limit	Size limit	Other controls
Billfish – including sailfish, swordfish, marlins (combined)	1*		Max 30kg or 1.2m
Boarfish	4*		
Cobbler	4*	430mm	
Cods – including breaksea and harlequin (combined)	4	300mm*	
Dhufish	2*	500mm	
Groper, western blue	1	600mm* [#]	
Hapuka and trevalla (combined)	2*		
Mahi mahi	2*		
Mulloway	2*	700mm*	
Pink snapper	4*	410mm*	
Queen snapper (blue morwong)	4*	410mm	
Red snapper (Bight redfish/nannygai)	4*	300mm*	
Samson fish/amberjack/yellowtail kingfish (combined)	2*	600mm	
Sharks and rays (combined)	2*		
Trout, brown and rainbow (combined)	4	300mm	
Tuna – southern bluefin, yellowfin, bigeye (combined)	2*		

Category 2 Fish – total mixed daily bag limit of 16				
<p>Category 2 Fish have a moderate risk of overexploitation. Many fish in this category have moderate catch rates and levels of abundance. Category 2 Fish are mostly found in inshore and estuarine areas, are highly sought after by recreational fishers and mature at three to four years.</p> <p>(Note: *denotes proposed change to current management)</p>				
Species	Species bag limit	Size limit	Other controls	
Bream – black	8*	250mm	2 fish over 350mm [#]	
Dory, John and mirror (combined)	8*			
Flathead and flounder (combined)	8*	300/250mm		
Goatfish	8*			
Leatherjacket	8*	250mm		
Salmon, Australian	4	300mm		
Snook and pike (combined)	8*	300mm		
Swallowtail	8*	280mm*		
Sweep	8*	250mm*		
Tailor	8	300mm		2 fish over 600mm [#]
Tarwhine	8*	230mm		
Trevally, silver (skippy) etc.	8*	250mm		
Tunas - Other including bonito (combined)	8*			
Whiting, King George	12*	280mm		
Whiting, yellowfin	16*			
Wrasse	8*			

[#] Refer to Proposal 8

Category 3 Fish – total mixed daily bag limit of 40

Category 3 Fish have a lower risk of overexploitation. Fish in this category generally have higher catch rates and levels of abundance and are mainly found inshore. These fish have a widespread distribution and mature at two-plus years. Category 3 Fish include all fish not listed in other categories except baitfish of the sardine, anchovy and hardyhead families (*Clupeidae*, *Engraulididae* and *Atherinidae*), redfin perch, gold fish, carp and tilapia.

(Note: *denotes proposed change to current management)

Species	Species bag limit	Other controls
Australian herring Garfish Mackerel, blue Mullet, sea and yellow-eye (combined) Whiting – (other) Unlisted species - (All species not specified except baitfish and feral freshwater species)	40 combined	

Department of Fisheries' Research Division advice

- Some concern exists in relation to the impact of current targeting of herring in the lower West Coast Region. Additional management of the herring fishery may be required in future years.

Crustaceans

(Note: *denotes proposed change to current management)

Species	Bag limit	Size limits	Other controls
Crab, blue swimmer (manna)	20*	127mm	Boat limit of 40*
Crab, mud (green and brown)	5*	150mm*	Boat limit of 10*
Marron	10	76mm	Recreational licence; closed season
Prawns, school and king (combined)	9 litres		Closed areas
Rock lobster	8	76mm – 77mm WRL 98.5mm Southern RL	Boat limit of 16 - Recreational licence. Closed season.

Molluscs and other reef animals				
(Note: *denotes proposed change to current management)				
Species	Bag limit	Boat limit	Possession limit	Other controls
Abalone, brownlip Abalone, greenlip	5 combined	10 combined	10 (20 at place of residence)	Licence & season
Abalone, Roe's and all other abalone species not specifically mentioned (combined)	20	-	20 (80 at place of residence)	Licence & season
Cockles and pipis [#] All other species of edible mollusc not specifically mentioned (combined)	2 litres			
Mussels	9 litres			
Oysters [#]	20*			
Razorfish [#]	20*			
Scallops	20*			
Sea urchins [#]	20*			
Squid, cuttlefish and octopus (combined)	15	30		

[#] Refer to Proposal 8

Department of Fisheries' Research Division advice

- There are considerable conservation issues around the ongoing harvesting of some of the cockle species, oysters, razorfish, and possibly sea urchins that need to be considered in the near future.

Protected species

These species are totally protected by Fisheries legislation throughout Western Australia and may not be taken.

Species	Scientific name
Potato cod	<i>Epinephelus takula</i>
Leafy seadragon	<i>Phycodurus eques</i>
Whale shark	<i>Rhiniodon typus</i>
Great white shark	<i>Caracharodon carcharias</i>
Humphead Maori wrasse	<i>Cheilinus undulatus</i>

Proposal 7 - Proposed changes to the current legal size limits

Note: Any changes to the size limit will apply to all sectors including commercial fishers.

Species	Old size (mm)	New size (mm)	Size when 50% of the stock reach maturity (mm)
Cods (all species)	-	300	Varies between species
Groper, Western blue	500	600	Not known
Mulloway	500	700	750
Pink snapper (Wilson Inlet)	280	410	400
Red snapper (Bight redfish/nannygai)	230	300	Not known
Swallowtail	230	280	Not known
Sweep	-	250	Not known
Mud crabs (note: occasionally caught on South Coast)	150 (green) 120 (brown)	150 for both	A size limit of 150mm will ensure they breed at least once before being taken.

Proposal 8 – Increased protection for certain species

Comment should be sought on the following options:

- 8(a)** Spearfishing exclusion zones or a total spearfishing prohibition be introduced for western blue groper (*Achoerodus gouldii*) on the South Coast due to their ease of capture and vulnerability to overfishing.
- 8(b)** A slot limit of two (2) black bream (*Acanthopagrus butcheri*) over 350 mm be introduced to provide increased protection for mature fish.
- 8(c)** A slot limit of two (2) tailor (*Pomatomus saltatrix*) over 600 mm be introduced to provide increased protection for mature fish.
- 8(d)** Identifying areas where the take of species such as cockles, oysters, razorfish, and sea urchins should be prohibited due to conservation issues around the ongoing harvesting of these species.

Proposal 9 – Recreational net fishing

Comment should be sought on two options:

- 9(a)** Recreational haul and set netting be phased out on the South Coast over a three to five year period; or
- 9(b)** Recreational netting be allowed to continue on the South Coast in a restricted capacity with a set of standardised rules applying across the region as follows:
- Haul netting be restricted to within 800 m of the shore in all oceanic waters of the South Coast region not specifically closed to netting (*currently only applies to set netting*).

- Throw netting be permitted in ocean waters only on the South Coast as a means of collecting baitfish.
- Set netting be prohibited from all ocean waters of the South Coast Region.
- Set netting be prohibited in all inland waters except the Wilson, Beaufort, Wellstead, Gordon, Hamersley, Broke, Irwin and Stokes Inlets, Princess Royal Harbour and the Thomas River and the Gardiner River on Wednesday and Friday nights from 1.5 hours before sunset to 1.5 hours after sunrise.
- Set netting be prohibited in the Broke, Irwin and Stokes Inlets and the Gardiner River between 1 November and 31 April the following year.
- All recreational set nets must be attended at all times and an hourly 'check and clean' carried out.

Proposal 10 – Fishing competitions

- 10 (a)** All fishing competitions with greater than 50 participants must be formally registered in advance with the Department of Fisheries.
- 10 (b)** Competition organisers be required to keep an accurate record of the participation, catch and effort in each competition, and forward catch returns to the Department of Fisheries for inclusion in the recreational fisheries database. The Department should develop standardised catch cards and data entry software with fishing clubs which are compatible with the recreational fishing database.
- 10 (c)** To ensure fishing competitions are conducted in line with recreational fishing ethics, and meet requirements under the Animal Welfare Bill, a formal code of conduct for fishing competitions should be developed by the Department of Fisheries, in line with the Code of Practice for Recreational Fishers, in consultation with fishing clubs and organising bodies.

Proposal 11 - Recreational fishing priority areas

The importance of recreational fishing as a component of tourism and lifestyle should be recognised in the Integrated Management Planning Process and the Marine Reserves Planning Process.

Through this process, the following areas should be considered for the priority use of recreational fishing:

- All estuarine systems;
- Twilight Cove;
- Recherche Archipelago;
- Water adjacent to Fitzgerald River National Park;
- Cape Vancouver to West Cape Howe.

Proposal 12 – Code of conduct for accessing pastoral leases, nature reserves and Aboriginal land

A code of conduct should be developed for recreational fishers accessing fishing locations through pastoral leases, nature reserves and Aboriginal land. The code should be developed in consultation with landowners/leaseholders and should contain the following elements:

- No lighting of fires.
- Leave no rubbish behind.
- Any fish frames or offal should be removed.
- All gates which are found shut must be left shut.
- Under no circumstance should any fences be cut or interfered with.
- Any machinery or equipment should not be interfered with.
- Firearms or dogs should not be taken on to stations without the approval of the station owner.
- Aboriginal land should only be entered with the approval of the Aboriginal landowners.

Proposal 13 – Access to fishing locations through private land

Regional RFACs should enter into negotiations with owners/leaseholders to define access routes to fishing locations, and that these routes and the code of conduct be promoted by the Department of Fisheries in advisory material.

Proposal 14 - Position statement on restocking as a stock enhancement strategy

Management of wild fish stocks should be the primary focus for recreational fisheries management. Restocking should only be considered as a strategy to assist with the recovery of a stock where it can be identified that the stock has been significantly depleted and its recovery is endangered or will be prolonged.

To minimise any ecological impacts, all stock enhancement projects should be assessed against disease risk, biodiversity and genetic diversity criteria. Any stock enhancement project should also be adequately monitored and evaluated.

Proposal 15 - Resource sharing

As a priority, the following species should be considered for total catch management under an integrated management framework:

- Australian salmon;
- Herring;
- Black bream;
- King George whiting;
- Southern demersal species, including shark.

For each species, a forum should be held with key stakeholders, including recreational, commercial, Indigenous and conservation groups to identify key issues which need to be taken into consideration in the development of an integrated management plan for the South Coast Region.

Proposal 16 – Low impact wilderness fishing experiences

That consideration be given to managing Twilight Cove as a remote wilderness fishing area on a trial basis.

The following guiding principles should be used for the management of the wilderness area:

- Low take.
- Low environmental impact.
- A code of practice should be developed for recreational fishing in the area.

Proposal 17 – South Coast Region community education plan

A recreational fisheries community education plan should be developed for the South Coast Region which focuses on the most important issues and species in the region. Such a plan should seek to keep the recreational fishing community informed of management decisions, give a clear lead on the values and attitudes which will assist in sustaining fish stocks, and develop a broad community recognition of the value of recreational fishing.

As a minimum, the plan should contain the following elements:

17(a) Regional fishing guide

A comprehensive regional guide to recreational fishing in the South Coast Region be produced to inform and educate fishers about recreational fishing management arrangements, fishing ethics, research, conservation issues and promoting stewardship for fish stocks and the environment.

17(b) Educational resource materials

Adequate quantities of practical educational tools, such as measuring gauges, fish rulers, adhesive bag limit guides and boat ramp and fishing venue signs should be produced to support the regional fishing guide.

17(c) Annual media campaign

An annual media campaign be implemented to promote recreational fishing and fishing ethics in the region.

17(d) Volunteer involvement in education

Encourage the establishment and development of volunteer groups in structured fisheries education activities across the region.

17(e) Aboriginal fishing education strategy

An education campaign promoting the recognition of customary fishing practices be developed through the Aboriginal Fishing Strategy.

Proposal 18 - Volunteer Fisheries Liaison Officers (VFLO) program

That the operation of the VFLO program be enhanced and developed on the South Coast in accordance with the VFLO strategic plan.

Proposal 19 – Additional patrol capacity

That an additional two patrols (four fisheries officers), incorporating at least one Aboriginal Fisheries Liaison Officer, be dedicated to recreational field compliance and education activities during peak fishing seasons in the South Coast Region.

These resources should be allocated to:

Albany: One additional patrol crew to service peak season fishing compliance needs between Walpole and Bremer Bay.

Esperance: One additional patrol crew to service peak season fishing compliance needs between Hopetoun and the WA/SA border.

Proposal 20 – Regional fishing management officer

That adequate resources be allocated to coordinate the implementation of the South Coast Regional Review and assist with the development of integrated fisheries management plans for the key fisheries in the region.

SECTION 1 PLANNING FOR THE FUTURE

1.1 Managing for the future - Why have a Regional Management Strategy?

Prior to 1989, a limited set of management measures were in place for recreational fishing. With an increase in fishing participation, greater ownership of boats, 4WD vehicles and increased leisure time, it was time to reassess the management of recreational fishing to ensure that the quality of WA's fisheries were maintained and fish stocks were sustainable.

It was for these reasons that the first comprehensive management framework was developed by the Recreational Fishing Advisory Committee (RFAC) during a two-year review between 1989 and 1991. The result of the review was a framework for the management of recreational fishing which achieved community consensus.

Major outcomes from this review were:

- A Statewide set of daily bag and size limits for all fish species be developed.
- The establishment of a Recreational Fishing Trust Fund into which revenue from species-based recreational fishing licences flowed.
- The establishment of specific management, research and community education programs for recreational fishing; and
- The creation of a network of State and Regional Recreational Fishing Advisory Committees.

This review was the first of its kind in Australia and established a new benchmark in recreational fisheries management.

Now, more than 10 years on, we have seen significant change occur in WA's recreational fisheries. We now have around 600,000 people fishing in WA compared to 284,000 in 1987. There have also been advances in angler efficiency through improved technology and greater fishing pressure has been placed on limited fish resources from competing users.

With more pressure on our fish resources, a range of different fisheries issues have arisen in different parts of WA. This initiated the need for the development and implementation of modified management arrangements for specific areas and species.

This led to fisheries management becoming increasingly reactive between 1992 and 1995, with resources focused on dealing with problems as they arose.

The choice for managing our recreational fisheries resources was to either continue with the same management approach and see a gradual decline in the quality of recreational fishing, or to proactively manage resources for the future.

1.2 The regional management approach

A solution to protecting the future quality of recreational fishing was developed by the Recreational Fishing Advisory Committee and the Department of Fisheries. The solution revolves around the development of four regional management strategies for the State. These strategies incorporate a detailed planning process capable of developing better targeted and more flexible responses to key management issues.

The basis for a more regional approach to recreational fisheries management was an acknowledgment of the natural complexity and diversity of WA's marine life and environments, and a clear need to better link management to the biology and distribution of both fish stocks and fishing activity. In other words, building effective management from the biological characteristics of resource upwards, rather than simply imposing human social values on fish.

Key issues this strategy will address include: localised stock depletion; scientific research; managing the recreational catch, community stewardship and resource sharing.

Licensed recreational fisheries such as the rock lobster, marron, abalone and freshwater finfish fisheries already have substantial management arrangements in place to protect the sustainability of these stocks. The area of greatest need for management is our marine finfish stocks, and consequently, this is the focus for the recreational strategy.

The recreational fishing strategy for the South Coast Region covers the area from Black Point, just east of Augusta, to the SA/WA border and includes all marine, estuarine and freshwater environments.

A key element in the regionalised approach is to simplify legislation where possible, and provide a more uniform set of rules across each region. However, this does not preclude establishing smaller management zones.

The recreational fishing management regions (see Figure 1) are:

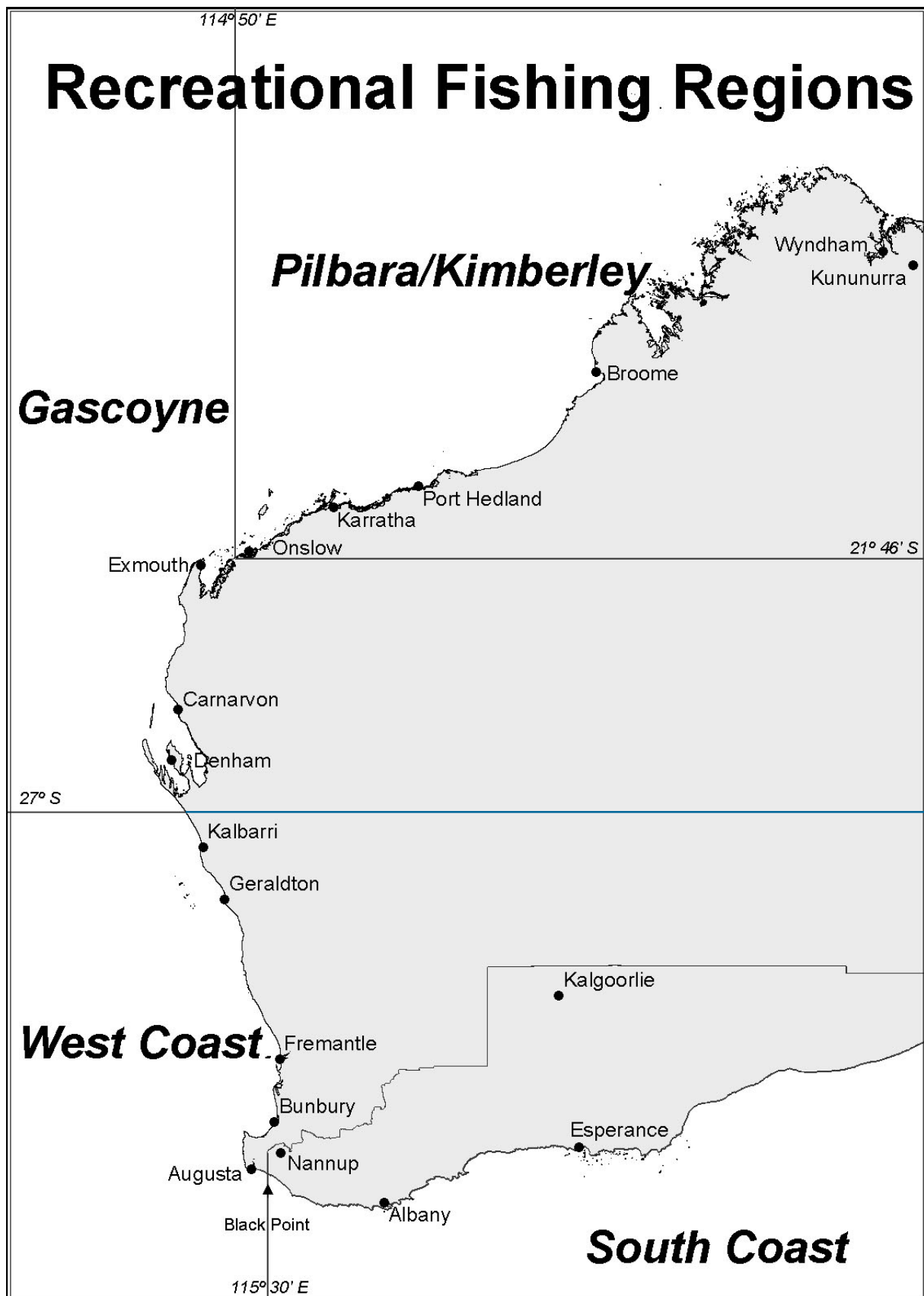
Zone 1: *Pilbara/Kimberley* – All land and WA waters east of 114°50' E longitude (approximately 4nm south of the mouth of the Ashburton River) and north of 21°46' S latitude.

Zone 2: *Gascoyne* – All land and WA waters north of 27° S longitude (Zuytdorp Cliffs - between Kalbarri and Steep Point) excluding the Pilbara/Kimberley Region.

Zone 3: *West Coast* - All land and WA waters south of 27° S longitude (Zuytdorp Cliffs - between Kalbarri and Steep Point) excluding the South Coast Region.

Zone 4: *South Coast* - All WA waters off the southern coast of WA East of 115°30' E longitude and all land east of 115°30' E longitude in the Cities of Albany and Kalgoorlie-Boulder; and the Shires of Boyup Brook, Bridgetown-Greenbushes, Broomehill, Coolgardie, Cranbrook, Denmark, Dumbleyung, Dundas, Esperance, Gnowangerup, Jerramungup, Katanning, Kent, Kojonup, Kondinin, Kulin, Lake Grace, Manjimup, Nannup, Plantagenet, Ravensthorpe, Tambellup and Woodanilling.

Figure -1 Regional Map



From a biological perspective, the boundaries of these regions are largely consistent with, or represent sub-sections of, the major bio-geographic regions, coastal and climatic zones of Western Australia, and consequently the distribution of many fish species. This will improve the effectiveness of fishing controls based on species biology, such as size limits and closed seasons, and enable bag limits to be tailored according to the target species and fishing pressures in each region.

These zones also coincide with discrete tourism regions of the State, and visitor fishing activity tends to focus on these areas during identifiable seasons. This will reduce perceptions of inequity when setting differential fishing management arrangements, and provide clear demarcation lines.

The rationale behind the development of a bio-regional management approach is provided in more detail in Fisheries Management Paper No. 136 (Management Directions for WA's Recreational Fisheries).

1.3 Terms of reference

1.3.1 Terms of reference of the review

- To identify the key issues and development opportunities facing recreational fishing in the South Coast Region.
- To prepare a draft five-year recreational fishery management strategy for the region, consistent with the strategic directions identified in the Labour Party Fisheries Policy and Recreational Fisheries Program Business Plan.
- To identify management and resourcing needs, and possible funding strategies, for implementation of the plan.
- To conduct extensive public consultation, including key stakeholders.
- To make final recommendations to the Minister for Fisheries for the management of recreational fisheries over five years within that region.

1.4. How to have your say

The release of this discussion paper for public comment provides an opportunity to provide further information for you to express your opinion on how recreational fisheries should be managed in the South Coast Region. Whether you agree or disagree with the various proposals, it is equally important to respond as the Working Group will review each of these proposals in light of the comments received.

1.4.1 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 section numbers/proposals/page numbers in the paper;
- Tell us whether you agree/disagree with any or all of the proposals or issues identified in each section; and
- Suggest alternative ways to resolve any of the issues you have raised.

1.4.2 How to make a submission

Written

- Clearly and briefly describe each separate subject you wish to address.
- Refer to the different section number/proposals/page numbers in the paper.

Questionnaire

- Responses can also be made by completing the enclosed questionnaire in a 'mark the box' format.
- Additional copies of the questionnaire are available from the Department of Fisheries or on the Department's website <http://www.fish.wa.gov.au>

For further information, contact the Department of Fisheries

Telephone: 9482 7333
e-mail: headoffice@fish.wa.gov.au

1.4.3 Where and when to send your submission

The closing date for submissions is **14 October 2004**. Please send your submission along with your full name, address and association details (if applicable) to:

Executive Officer
South Coast Review
c/- Recreational Fisheries Program
Department of Fisheries
Locked Bag 39
Cloisters Square Post Office
PERTH WA 6850

Fax: 9482 7218
e-mail: csyers@fish.wa.gov.au

1.4.4 What happens to your submission

All submissions are confidential and will be reviewed only by a committee consisting of members from the Department of Fisheries, RFAC, Regional RFACs and Recfishwest. After consideration of submissions, final recommendations will be forwarded to the Minister via RFAC.

The recommendations approved by the Minister for Fisheries will form the basis of a new management package for recreational fishing in the South Coast Region.

SECTION 2 FISHING ON THE SOUTH COAST

2.1 Profile of fishing in the South Coast

Recreational fishing participation for the South Coast of WA between Black Point, east of Augusta, and the WA/SA border, is estimated at around 16 per cent of the State's recreational anglers, or some 96,000 anglers per year, generating 330,000 fishing days (Baharthah and Sumner, 2003).

In recent years, significant growth in recreational fishing activity has become apparent, with 23 fishing tour operators licences and four aquatic eco-tour operators licences issued in the South Coast Region based around the region's reputation as remote and pristine.

Key recreational fishing areas include the major estuaries of Walpole-Nornalup, Wilson Inlet, the Albany Harbours, Bremer Bay, Hopetoun and Stokes Inlet.

Major target species in estuaries include black bream, King George whiting and trevally, while shore fishing focuses on Western Australian salmon, herring, whiting and trevally. Boat fishing is concentrated near major population centres, with the target species being pink snapper, queen snapper, blue groper, shark, red snapper and samson fish.

Management issues include resource-sharing conflicts between the recreational line fishery and the commercial estuarine fishery, particularly in Wilson and Stokes inlets, and concerns over the impact of commercial fishing on food chain species such as pilchards.

Since 1996, a number of commercial fishing licences have been bought out in fisheries important to the recreational sector, including a significant number of herring trap net endorsements and estuarine fishing licences.

A survey to estimate the impact of recreational fishing on key species in the South Coast estuaries is currently being undertaken by the Department of Fisheries, and is due to be completed in 2004.

2.1.1 Economic impact of fishing

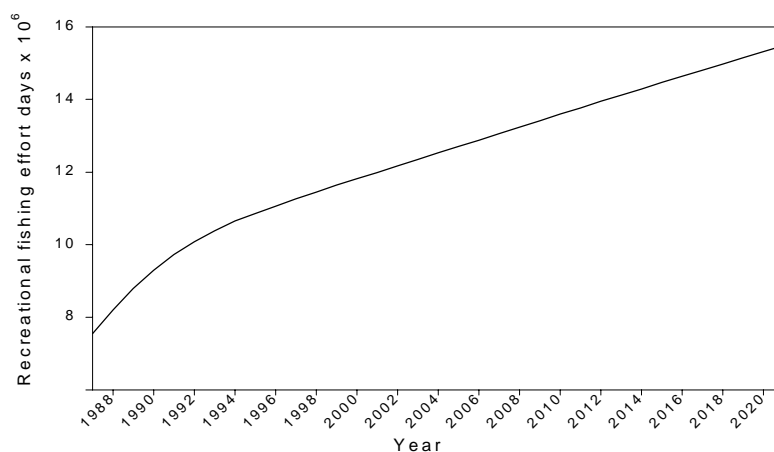
In 1991, Economic Research Associates (Lindner, R. and McLeod, P. 1991) undertook a survey of participation and expenditure patterns of recreational fishers in WA. This survey estimated that recreational fishing activity had a direct expenditure of \$205 million in 1989/90, and an indirect impact of \$184 million, giving an aggregate impact of \$389 million and an employment impact of 5,700 full time jobs.

The State economic impact was updated by a repeat survey in 1998, based on a State population of 1.755 million and a participation rate of 36 per cent. Direct expenditure associated with recreational fishing was estimated at of \$299 million in 1995/96, giving an aggregate impact of \$569 million and an employment impact of 7,000 full time jobs.

2.1.2 Participation and effort - how many people fished where

With an increase in recreational fishing participation from 287,000 people in 1987 (ABS 1987) to around 598,819 people in 2003 (Baharthah and Sumner 2003), future population growth could lead to significant increases in recreational fishing pressure. Based on projected population growth, projected increases in recreational fishing effort are represented in Figure 2.

Figure 2 - Future projection of recreational fishing effort



2.1.3 Assumptions

- The mean number of days fished per recreational fisher is 18 per year (Baharthah and Sumner, 1999).
- For the years 1987 to 1999, the participation rate was estimated by fitting a curve to the participation rates for 1987, 1994, 1997 and 1999. After 1999, the participation rate was assumed to be constant, and was set to the rate of 0.34 estimated by Baharthah and Sumner (1999).
- The population projections were based on Australian Bureau of Statistics (1998).
- Note, while different survey methods provide different estimates of total recreational fishing effort, overall trends consistently show significant growth in recreational fishing activity

2.2 Outcomes of the regional planning process to date

The South Coast Region Strategy will be conducted in conjunction with the Pilbara/Kimberley Region, and is the fourth and final regional review to be undertaken. Recreational fishing strategies have already been completed for the West Coast and Gascoyne Regions.

The West Coast and Gascoyne planning processes have delivered three important outcomes which will have a bearing on recreational fisheries management in the South Coast Region.

These outcomes are:

- A new simplified three-tiered bag limit structure, which will be applied across the State.
- A general statewide fish possession limit.
- A minimum fillet length for fish that have been processed at sea.

2.2.1 Bag limits

The three-tiered bag limit structure is based on a risk assessment of a species' vulnerability to overfishing. Category 1 Fish are deemed to require the highest level of protection, Category 2 Fish require a moderate level of protection, and Category 3 Fish require a lower level of protection.

This three-tiered system of bag limits will be applied across the State. At the recreational fishing planning day in April 2003, it was proposed that the same overall mixed bag limits that apply for each category in the West Coast and Gascoyne should apply for the Pilbara/Kimberley and the South Coast. However, this does not preclude setting different species bag limits to adjust for fishing pressure and ecological differences between each region.

In summary, it is proposed the following bag limit structure should be applied across the State.

- **Category 1 Fish**

Category 1 Fish are considered to have the highest risk of overexploitation. Many fish in this category have low catch rates and levels of abundance, while others may be highly valued for their fishing and eating qualities. Many Category 1 Fish are slow growing and mature at four years plus. For these reasons, Category 1 Fish require a high degree of protection.

- **Category 2 Fish**

Category 2 Fish have a moderate risk of overexploitation. Many fish in this category have moderate catch rates and levels of abundance. Category 2 Fish are mostly found in inshore and estuarine areas, are highly sought after by recreational fishers and mature at three to four years. Category 2 Fish include all fish not listed in other categories except baitfish of the sardine, anchovy and hardyhead families (*Clupeidae*, *Engraulididae* and *Atherinidae*), redfin perch, gold fish, carp and tilapia.

- **Category 3 Fish**

Category 3 Fish have a lower risk of overexploitation. Fish in this category generally have higher catch rates and levels of abundance and are mainly found inshore. These fish have a widespread distribution and mature at two-plus years.

2.2.2 Possession limit

The statewide possession limit, which was endorsed as an outcome of the West Coast and Gascoyne planning processes, sets the maximum quantity of fish a person can possess outside their place of permanent residence.

The statewide possession limit for recreationally caught fish will apply on the following basis:

- 20 kg of fillets or pieces of fish or;
- 10 kg of fillet or pieces of fish plus one day's bag limit of whole fish or;
- Two days' bag limit of whole fish.

2.2.3 Transporting and storing of fish

For the purpose of determining ownership, all recreationally caught fish which are being transported or stored must be labelled under the following circumstances:

- where fish are being commercially consigned or transported; or
- where more than an individual possession limit is stored in a container; or
- on premises involved in the commercial take, processing, transport, storage, sale or dealing with fish.

2.2.4 Filleting at sea

Statewide restrictions on filleting at sea are essential for the enforcement of minimum legal size and bag limits for high risk demersal species.

In summary, the following rules currently apply to *filleting at sea* on the South Coast:

- All fish, except 'bread and butter fish', can be filleted or trunked on trips to sea of any duration, provided the fillet/trunk length is at least 30 cm. Skin and scales must be left on the fillet/trunk.
- 'Bread and butter' fish can be filleted on trips to sea of any duration provided the skin is left on the fillet. No minimum fillet length applies to 'bread and butter' fish.
- When staying overnight on islands, fillets of any length can be transported back to the mainland provided those fish have been landed on the island.

Note: Following the introduction to the three-tiered bag limit structure on the South Coast, 'bread and butter' fish will become Category 3 Fish.

For specific details on filleting at sea or labelling requirements, fishers should contact the Department of Fisheries.

2.3 The recreational catch and effort

The recreational catch and effort on the South Coast is relatively unknown. A community survey conducted by the Department of Fisheries estimated around 16 per cent of the State's recreational anglers, or some 96,000 anglers, fished in the region in 2003 (Baharthah and Sumner 2003). The Department is currently conducting a survey to estimate the impact of recreational fishing on key species in South Coast estuaries. This survey, along with data collected during the recent National Recreational Fishing Survey, will provide the first detailed snapshot of recreational fishing on the South Coast.

An extensive scientific knowledge of key recreational target species in the South Coast estuarine sector has been developed from research undertaken by the Department of Fisheries since the 1970s (e.g. Lenanton and Hodgkin 1985, Lenanton and Potter 1987). In addition, a number of collaborative research projects have been undertaken during the 1980s and 1990s by the Department of Fisheries with Murdoch University postgraduate students – in particular important recreational species in Wilson and Walpole/Nornalup Inlets (e.g. Potter et al. 1993, Potter and Hyndes 1994).

These studies, which utilise and are supported by the commercial fisheries database, have provided a good basic knowledge of the key species of black bream (*Acanthopagrus butcheri*), cobbler (*Cnidogobius macrocephalus*) and King George whiting (*Sillaginodes punctata*). Equally, knowledge of salmon and herring (major target species within the South Coast beach fishery), has been supported by a range of FRDC-funded research projects.

This data, combined with long-running commercial fisheries databases (abundance and breeding stocks) provides a strong foundation for recreational fishing management of this key sector. A survey of shore-based fishers, to estimate the recreational catch of herring and salmon, was completed in 1995 (Ayvazian et al. 1997). This survey provided specific data on these key stocks, enabling the impact of recreational fishing to be assessed.

Other species targeted by beach fishers include garfish (*Hyporhamphus melanochir*), skipjack trevally (*Pseudocaranx dentex*), western sand whiting (*Sillago schomburgkii*), southern school whiting (*Sillago bassensis*) and King George whiting. Further survey work to estimate the impact of recreational fishing on key species in the South Coast estuaries is now being undertaken.

The significant gap in biological and fishery data in this region relates to the offshore boat angling species (e.g. trevally, queen and red snapper, blue groper and samson fish), the exception being the more abundant shark species (gummy shark, *Mustelus antarcticus*, and dusky whaler, *Carcharhinus obscurus*) which have been extensively researched under FRDC-funded projects. Recreational catch data for these species will be extracted from the National Recreational Fishing Survey database when resources become available.

Research for managing all three South Coast bioregion recreational sectors (estuarine, beach and boat) will rely heavily on commercial fisheries databases, coupled with recreational creel survey data and the national recreational database.

With the introduction of a management framework and a compulsory research logbook for the aquatic tour industry in 2001, a snapshot of the species encountered by recreational boat fishers on the South Coast was available for the first time.

Preliminary analysis shows that licensed tour operators conducted more than 400 fishing tours and 750 aquatic eco-tours (non-extractive) in 2002, averaging nearly 15 clients per tour. Fishing tours generated over 3,000 fisher days and reported the following catch information on the top 10 species kept in the region:

Species (common name)	Kept	Released	Estimated weight kept (tonnes)
Snapper, red (nannygai)	3,534	478	6
Swallowtail	1,802	44	1
Snapper, queen (blue morwong)	1,237	57	4
Trevally, skipjack/silver	1,154	72	1
Cod, breaksea	883	19	1
Scorpion cod, Western red	474	18	*
Samson fish/ sea kingfish	428	81	4
Snapper, pink	403	19	2
Leatherjackets, general	397	49	1
Sweep, sea	293	6	0.5

Denotes * = Insufficient data supplied by operators.

2.4 Impact of fishing on stocks

Around Western Australia, anglers have acknowledged that the quality of some fisheries have declined over a period of time. The Eastern Gulf pink snapper fishery in Shark Bay is one example where it can be demonstrated that recreational fishing pressure has reduced stocks to a point where the sustainability of the stock is now threatened.

This is not to say that all fish stocks in WA are in a state of decline. On the contrary, we are fortunate to have a healthy population of fish in comparison to other States which have more people and far more fishing pressure.

To protect future fish stocks, it is important to understand what happens to a stock of fish over time with fishing pressure.

When fishing pressure is exerted on a 'virgin' or unfished stock, the catches initially include a number of older or larger fish, which are highly sought after by fishers. At this time, catches are high for a relatively small number of fishers. As more of the larger fish are removed from the population, faster growing young fish replace the older fish. In this situation, the overall catch can actually increase with more medium size fish, but less bigger fish are available to be caught.

As competition between fishers increases, individual catches decline, although the overall catch tends to level off. This can be the start of what is referred to as 'growth overfishing'.

This simply means there are still adequate mature fish in the population to produce sufficient juvenile fish, but the number of older mature fish has been significantly depleted.

As competition for fish stocks among user groups increases, individual catches begin to crash as fish are taken from the stock more rapidly than they can be replaced. This situation is called 'recruitment overfishing', where both mature fish and juvenile fish are being fished down below sustainable levels.

With the growing pressure on our fish stocks from increased participation, competition from different user groups and advances in technology, our existing bag and size limits are not enough to prevent overfishing occurring in future years. In the future, the recreational catch will need to be managed to an agreed share of the sustainable take. Managing to a sustainable take with specific catch allocation for each sector will require the use of management tools other than bag and size limits to limit exploitation on stocks.

2.5 Current management

The statewide approach to the management of recreational fisheries was developed as a consequence of a major review of recreational fishing conducted in the early 1990s. This review resulted in the implementation of a set of bag and size limits aimed at setting clear social standards for recreational fishing, based on what the community considered was a fair and reasonable daily catch. It is important to note that the bag limits implemented at the time were not, in any significant way, intended to restrain the total recreational catch.

Seasonal closures are currently used as a key control in the licensed recreational fisheries such as rock lobster, abalone, marron and south-west freshwater fisheries, but generally have not been applied to marine finfish species in the South Coast.

Minimum size limits have been set for many species. Minimum size limits can be used to protect fish until they reach maturity and have been able to spawn at least once, and can be set to help enhance fishing quality. Many of the current minimum sizes were set when the biology of individual fish was not known. As a result, the minimum size was often set at the smallest commercial size at which the fish could be sold.

Maximum size limits are currently only used for a small number of species (e.g. cod). These may provide valuable protection for larger specimens, which are the most prolific breeders for many species. The ability to determine appropriate size limits, and hence their applicability as a management tool, is limited by the level of biological information available for many species.

Besides bag and size limits the Fish Resources Management Act 1994 contains a number of other general provisions which control the take by recreational fishers, and may override the general bag limit provisions. For example, Section 50(3) of the Act states that:

“A person must not take, or bring onto land or into WA waters, on any one day more fish than the daily bag limit of those fish.”

This provision restricts all persons to landing a single daily bag limit, irrespective of how many days they may have been fishing from a boat or island.

However, this situation is not 'black and white', as the Fish Resources Management Regulations also provide a defence to this general rule for persons who conduct extended fishing trips which involve living on a boat or staying on islands. Under this defence, people can accumulate up to their possession limit of fish, which can be two days' bag limit of whole fish or 10kg of fillets plus one day's bag limit of whole fish, or 20 kg of filleted fish.

2.6 Fishery management strategies - what works and how

There are a limited number of management strategies that can be applied to recreational fisheries. Ultimately, these strategies have one fundamental goal – to ensure WA continues to offer a quality recreational fishing experience by managing the recreational fishing community's share of the total catch within the limits a fish stock can sustain.

This section provides a brief outline of the major recreational fishery management tools used in WA, and their strengths and limitations. It is important to note that these tools are used in combination, and that often there is no single effective solution to any one issue.

Clearly, these strategies also need to be part of an integrated management framework which manages the impact of all users – commercial, recreational, charter, and conservation – on the fish resources and their habitats.

2.6.1 Daily bag limits

Bag limits currently set a social standard for a 'fair day's catch' for an individual angler. The bag limits currently in place on the South Coast for most species were set in the 1980s, and reflect social values of the time. These values change over time in line with community views and expectations.

Bag limits have the capacity to reduce the rate at which an aggregation of fish or an area is depleted by fishing, and ensure that a larger number of fish are available in the water for a longer period of time.

Bag limits also help to share the available catch among the thousands of anglers who wish to catch a fish.

However, to be effective, bag limits need to be set at a level which is readily attainable for an angler of reasonable skill and knowledge.

Their limitations include the unknown mortality factors involved in catch and release fishing – especially for fish caught in deep water or played for long periods of time on light line. They also tend to be seen as unfair by anglers aiming to maximise their catch because they reduce the total quantity they can land on any one occasion.

Depending on the level at which they are set, bag limits may assist in the sustainable management of our fisheries. Then again, the greater the number of people fishing or the number of days spent fishing, the less effective bag limits are in managing either individual or total catches. In this context, they serve mainly to set a social standard and highlight the need for conservation.

An additional weakness is the concern that, if used in isolation, they may simply make more fish available to the commercial sector by reducing the total recreational catch.

2.6.2 Boat limits

Boat limits can be used to provide protection for recreational species by restricting the total number of fish which can be taken from a boat during a specific fishing trip.

Due to the mobility of a boat and its ability to be enhanced as a fishing platform through fish finding technology, boat limits have the capacity to reduce the rate at which an aggregation of fish or an area is depleted by fishing.

Boat limits can also help to share the available catch among anglers who wish to catch a fish.

The greater the number of people on a boat, the more effective a boat limit becomes in restraining the recreational catch. However, this can also be seen as placing an unfair restriction on recreational fishers.

2.6.3 Possession and trip limits

Possession and trip limits are a strategy to manage the total take of an individual angler on any one fishing trip. A possession limit simply refers to a maximum limit an angler can have in possession at any time in a defined area. A possession limit can be expressed either in total weight or in numbers of fish, or a combination of both. Places of permanent residence and commercial premises may be excluded from possession limits.

Possession limits were originally introduced in areas such as the Ningaloo Marine Park to reduce the ability of anglers to accumulate commercial quantities of fish. Their major application was to eliminate 'shamateur' quasi-commercial fishing and the storing and freezing of large quantities of fish in remote locations.

Possession limits have also been used in limited single-species fisheries elsewhere in the world to effectively establish a total recreational 'quota', usually in combination with a limit on the total number of participants.

Weaknesses include the ability of anglers to transport fish unaccompanied without any effective constraint, and the evidentiary and legal issues inherent in proving possession.

Like bag limits, they set a firm social standard for a recreational catch, but become less effective in managing the total catch as numbers of fishers or angler/fishing days increases.

2.6.4 Legal sizes – minimum and slot limits

Minimum size limits are usually based on the breeding biology of a species, and are set to protect fish until they reach maturity and have been able to spawn at least once. They can also be set to help enhance recreational fishing quality by increasing the average size of fish available.

Size limits generally apply equally to both the recreational and commercial sectors. However their effectiveness as a management tool is reduced in fishing gear such as set nets, where there is a very high mortality. Their effectiveness also depends on voluntary compliance – particularly where filleting is allowed at sea and compliance checks are not possible.

Some existing size limits are not set upon the fishes' maturity, and reflect the size at which some species are available for capture during a stage in their life cycle. This is particularly true in WA for species such as King George whiting and tailor, which tend to use estuaries and nearshore areas as nurseries, and migrate further offshore as they mature.

In many cases, current legal sizes also reflect the desirable market size of fish by the commercial sector, and were set early last Century with no biological basis.

The ability to determine appropriate size limits, and their applicability as a management tool, is limited by the level of biological information available for many species. There is also increasing concern over the mortality of fish, particularly demersal species, taken from deep water, and the appropriateness of size limits as a management tool for these species is being questioned.

Maximum size or slot limits are theoretically useful for protecting large breeding fish, or reducing the take of highly prized, and often rare, large specimens.

In a purely recreational fishery, they have considerable merit. However, in a mixed commercial/recreational fishing area or fishery, they are unlikely to achieve the desired effect unless applied to both sectors.

Like minimum sizes and bag limits, the issue of mortality of fish returned to the water is of great importance.

2.6.5 Closed seasons and closed areas

Closed seasons have been widely used in licensed recreational fisheries and commercial fisheries as a means of containing total effort outside the peak fishing season, or to protect fish at crucial stages in their life cycle.

Their advantages are that they affect all fishers equally, and effectively limit the opportunity to fish to a given number of days. Closed seasons have been widely accepted in abalone, marron, rock lobster, trout and prawn fisheries.

However, it may be difficult to gain acceptance for these in multi-species fisheries such as the demersal finfish fishery, and they may be ineffective if peak fishing seasons and spawning times are not clearly defined or consistent from year to year.

Closed areas may also be used to protect fish at crucial stages in their life history, such as spawning, or to protect populations of sedentary species or important fish habitats from the impact of human use. They have also been proposed as an alternative means of rebuilding depleted fish stocks.

Success of closed areas will depend on either widespread community support or effective compliance.

Both closed areas and closed seasons may limit all fishing or only some types of fishing. Consequently, they can also be used as a means of resource sharing and reducing community conflict.

2.6.6 Gear and method restrictions

Gear restrictions may limit the type of fishing gear that can be used, or limit the area and time in which defined types of gear may be used.

In recreational fisheries, gear restrictions aim to prevent the use of highly destructive fishing methods such as poisoning reefs and explosives, the use of highly efficient commercial-type fishing gear and to reduce conflict in some areas between incompatible fishing activities such as set netting and angling.

Fishing gear may also be designed to assist in the release of undersize fish and reduce the likelihood of injury to fish. Examples include drop net bases for marron, defined wire scoops for crabs and marron and the banning of the use of treble hooks in some interstate fisheries.

Gear restrictions in line fisheries are harder to regulate. Despite this, angler education in catch and release methods, including substituting plain limericks for jag or treble hooks and flattening barbs, could help to improve the survival rate of released fish.

Limitations on the quantity of gear an individual fisher can use are also a means of resource sharing and spreading the opportunity to catch with other participants in the fishery.

Different types of gear and method include spearfishing. In areas of high conservation value, such as marine parks, restrictions have been placed on spearfishermen by prohibiting the use of compressed air or not allowing spearfishing in any form. These measures are designed to protect vulnerable residential reef fish.

Spatial closures to limit or prohibit the use of commercial fishing methods in important recreational fishing areas are also a means of managing social conflict and resource sharing.

2.6.7 Licensing

Licensing individual fishers is used worldwide as a key strategy in the management of many recreational fisheries, including five in WA.

Licences provide a ready-made and accurate database which can be used for research and education. A database of recreational fishers can enable catch and effort information to be easily obtained as well as provide a direct mail list for advisory information. Licensing can also ensure that the level of funds for the management of recreational fisheries tracks the participation rate, and consequently management demands, in developing fisheries.

An additional use is the application of licence cancellations and suspensions as a penalty for serious fisheries misdemeanours, and as a relevant means of reinforcing the need for ethical fishing behaviour.

Licences track participation rates accurately, and provide a basis for estimating fishing effort, individual and average fishing success and total catches from a given fishery.

In the absence of a licensing system, randomised boat ramp and beachfront catch surveys, and phone surveys, provide the same data. However, these are subject to the availability of funds, and rarely carried out with the regularity needed to maintain a long-term and accurate fishery-monitoring program.

The establishment of a licensing system for recreational fishers requires funds for implementation, ongoing compliance and administration.

2.6.8 Education

Community support for the sustainability of fish resources is a crucial factor in successful recreational fisheries management. Community education is the key process for the development of effective community stewardship.

Community stewardship can be evaluated against four criteria:

- The level of individual knowledge of what is required to ensure healthy fisheries.
- The attitudes and values that individuals hold in relation to fishing.
- The behaviour that people adopt when fishing.
- The level of community support for necessary changes to management.

In promoting a sense of stewardship for fish stocks, it is essential that the fishing community needs to be properly informed of management decisions, and given a clear lead on the values and attitudes which will assist in sustaining fish stocks.

A wide range of education and awareness strategies can be used to promote a strong fishing conservation ethic and set social standards within the recreational fishing community. These strategies include: community based education programs, such as the Volunteer Fisheries Liaison Officer (VFLO) program; school education programs; TV and radio advertising; and information publications.

Any recreational fishing education program needs to recognise the crucial role that peer education plays in setting the social standards for fishing behaviour, and need to target adults and not just children, with clearly identified key strategies and messages designed to be relevant and accessible to each target group.

A key element of these programs is that they are designed to deliver messages or reminders to recreational fishers at the time and the place where these messages have the most relevance.

A prime example of this process at work has been the success of the Volunteer Fisheries Liaison Officer (VFLO) program, which was established by the Department of Fisheries in 1992.

The VFLO program is a structured process of peer education, which involves recreational fishers themselves encouraging a change in the knowledge, values and attitudes of individuals, which, in combination, influence fishing behaviour. A crucial element in the success of the program has been VFLOs targeting anglers at beaches and boat ramps when anglers are most receptive to messages on fishing.

2.7 Integrating recreational and commercial fisheries management

The regional recreational fisheries strategies will complement the new management arrangements for the charter industry and provide the necessary framework for recreational fishing to be incorporated into an integrated management framework with other fishing sectors.

Before catch allocations can be managed under an integrated management framework, it is first necessary to ensure effective sectoral management arrangements are in place. Some fisheries are not highly managed (e.g. finfish) and a move to a higher level of management is essential for both the commercial and recreational sectors.

Integrated management is about managing the total impacts on fish resources. This includes not only the impacts of commercial and recreational fishers, but also takes into account customary fishing, aquaculture and wider ecological requirements.

In essence, the new approach involves the setting of a total harvest level in each fishery that allows for an ecologically sustainable level of fishing, and the allocation of explicit catch shares for use by each of the principal user groups. It also requires the catch harvested by each sector to be monitored and broadly managed within their allocated catch level over periods of between five and 10 years.

To complement the regional recreational fishing strategies, a corresponding review of the unmanaged components of the commercial finfish sector (wetline) is underway to ensure the effective management of the commercial catch. The commercial wetline review is focused on implementing a more effective management framework for the commercial sector, and preventing further growth in this sector. This duplicates the objectives for the regional recreational reviews.

As was the case with the recreational reviews, the wetline review will involve a number of complex issues and require widespread consultation. The ability to 'wetline' is seen as fundamental entitlement by many commercial fishers.

It is anticipated that discussion papers on the future management of the wetline fishery in the West Coast and Gascoyne Regions will be released for public comment in 2004.

It should be noted that the implementation of the regional recreational fishing strategies will achieve two critical steps in the development of integrated management:

- 1) The regional management strategies will provide a spatial framework for integrating the management of recreational and charter fishing with commercial fishing and other uses in each region, such as Indigenous, conservation, eco-tourism and aquaculture.
- 2) They will manage for the escalation in recreational fishing pressure and efficiency over the last decade.

To assist the integration of fisheries management, an independent review committee has examined alternative management frameworks and principles for the future allocation of fish stocks to ensure maximum benefit to the community. The Government is currently considering submissions on proposals for the integrated management of the State's fish resources.

Importantly, issues surrounding the allocation of resources are complex, and it may take a further five to 10 years to implement the new framework across the majority of fisheries. In the interim, it is crucial that each sector continues to be managed effectively within current catch ranges.

The Department believes an integrated management approach is essential to manage growing pressures on our fish resources and to meet the requirements of Ecologically Sustainable Development.

In WA, the spatial boundaries for the different regions reflects the distribution of fish stocks, and will permit the determination of sustainable catch levels and the allocation of catch shares to the various user groups on an appropriate spatial scale.

Integration on a regional basis may also provide a spatial framework for data collection that will assist in the proportional management of catch and access shares.

2.8 Aboriginal fishing

The Government is currently in the process of developing a strategy for Aboriginal fishing in Western Australia. A draft strategy has been developed which is based on the aspirations of the Aboriginal community. It should be noted that the Aboriginal Fishing Strategy has recommended special rules apply for Aboriginal fishers in recognition of customary fishing practices.

While many people in the recreational fishing community support the recognition of customary fishing practices by people of Aboriginal descent, some recreational fishing groups have expressed concern over the appropriateness of some proposals in the Aboriginal Fishing Strategy. In particular, concern was expressed over different management arrangements applying to Aboriginal fishers around key population centres.

In recognition of the high fishing pressure on fish stocks around key population centres, many recreational fishers expressed the view that the same fishing rules should apply to Aboriginal and non-Aboriginal fishers in the waters adjacent to these centres.

This view has been expressed to the Working Group developing the Aboriginal Fishing Strategy.

All recommendations contained within this recreational fishing strategy are of general application, and no special arrangements have been proposed for any individual stakeholder group.

2.9 Summary of commercial finfish and shark fisheries on the South Coast*

2.9.1 South Coast Estuarine Fishery

Management summary: The South Coast Estuarine (Interim) Management Plan 2001 was published in the Government Gazette on 22 January 2002. The new management arrangements were implemented on 1 July 2002, and expire on 30 June 2005. The new arrangements have better defined permitted fishing methods and times. They have also provided for transferability of authorisations when the number of units in the fishery has been reduced to the optimum level of 15.

Boundaries and access: The following estuaries and inlets located between Cape Beaufort and the WA/SA border are reported under the South Coast Estuarine (Interim) Managed Fishery (SCEF): Broke Inlet, Irwin Inlet, Parry Inlet, Wilson Inlet, Princess Royal Harbour, Oyster Harbour, Waychinicup Inlet, Beaufort Inlet, Gordon Inlet, Hamersley Inlet, Culham Inlet, Jerdacuttup Lakes, Oldfield Inlet, Torradup Inlet and Stokes Inlet.

The level of access stood at 25 fishing units in July 2002, which was a reduction from the previous year as a result of the Voluntary Fisheries Adjustment Scheme. South Coast licensees have access to each of these individual South Coast estuaries, except Beaufort Inlet, where only three licensees a year are granted entry.

Under new management arrangements introduced in July 2002, Parry Inlet and Torradup Inlet were closed to commercial fishing. The SCEF is a multi-species fishery targeting many finfish species. This report presents specific data for three of the most important estuarine fish stocks, namely black bream (*Acanthopagrus butcheri*), cobbler (*Cnidoglanis macrocephalus*) and King George whiting (*Sillaginodes punctata*).

Main fishing method: Gillnet/haul net.

* (Source: State of the Fisheries Report 2002/2003)

Retained species:

Commercial production (season 2002):		259.5	tonnes
Cobbler	<i>Cnidoglanis macrocephalus</i>	92.1	tonnes
Black bream	<i>Acanthopagrus butcheri</i>	36.9	tonnes
Sea mullet	<i>Mugil cephalus</i>	25.7	tonnes
Australian herring	<i>Arripis georgianus</i>	14.9	tonnes
Blue swimmer crabs	<i>Portunus pelagicus</i>	12.9	tonnes
Leatherjacket	Monacanthidae	12.0	tonnes
King George whiting	<i>Sillaginodes punctata</i>	11.3	tonnes
Flathead	Platycephalidae	11.3	tonnes
Yellow eye mullet	<i>Aldrichetta forsteri</i>	10.0	tonnes
Silver bream	<i>Rhabdosargus sarba</i>	8.5	tonnes
Pink snapper	<i>Pagrus auratus</i>	2.1	tonnes
Other species		21.8	tonnes

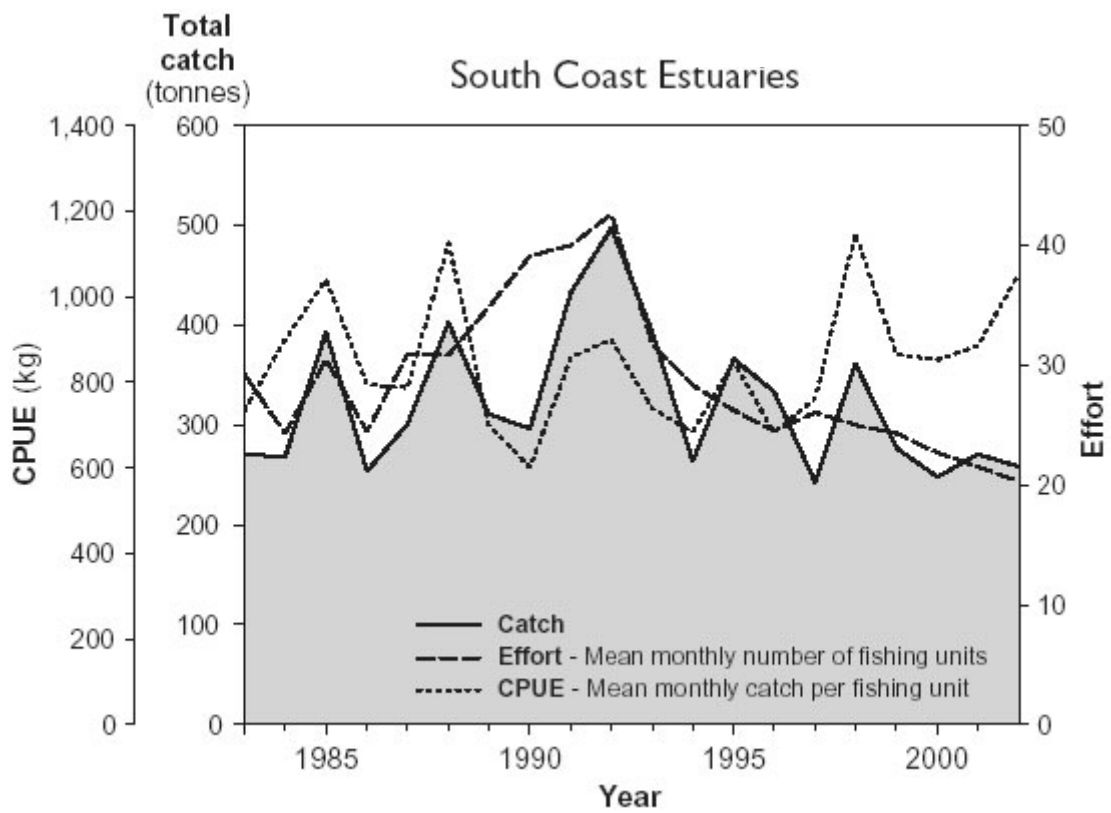


Figure 3 The annual catch, effort and catch per unit effort (CPUE) for the South Coast Estuarine Fishery over the period 1983–2002.

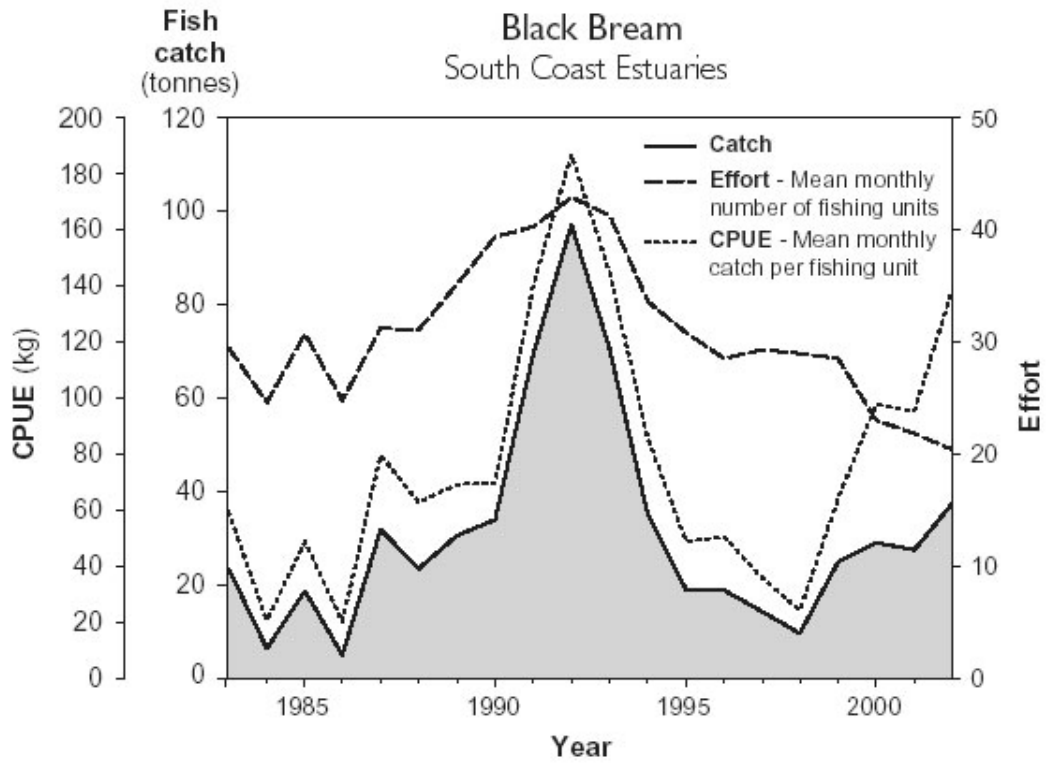


Figure 4 The annual catch, effort and catch per unit effort (CPUE) for the black bream fishery in South Coast estuaries over the period 1983–2002.

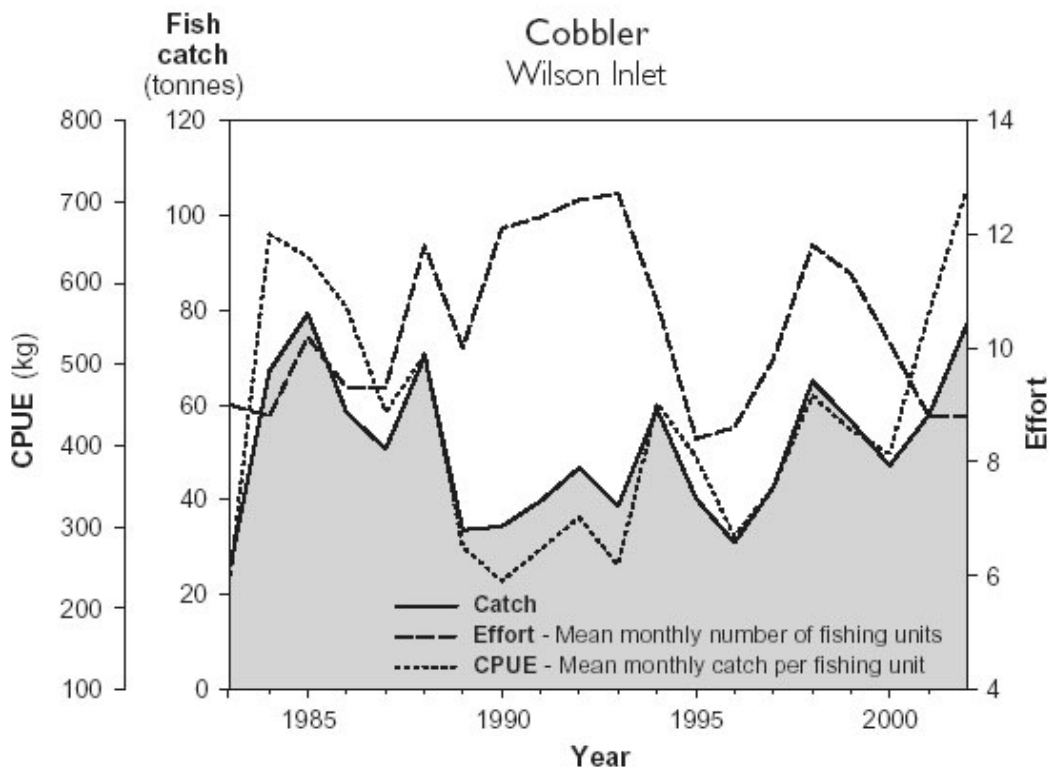


Figure 5 The annual catch, effort and catch per unit effort (CPUE) for the cobbler fishery of Wilson Inlet over the period 1983–2002.

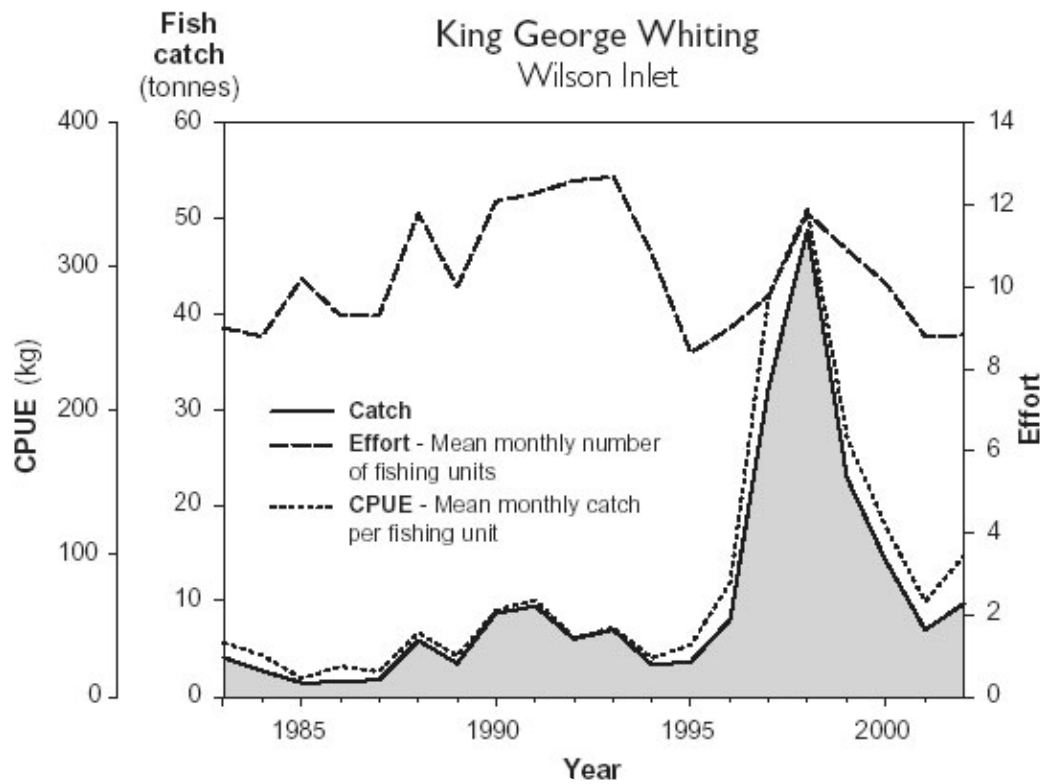


Figure 6 The annual catch, effort and catch per unit effort (CPUE) for the King George whiting fishery of Wilson Inlet over the period 1983–2002.

2.9.2 Western Australian salmon fisheries

Management Summary: The Western Australian salmon (*Arripis truttaceus*) is taken primarily during its annual east-to-west migration, usually between February and May each year. Fishing operations are conducted by teams of fishers setting beach seine nets using small jet-powered boats.

There are two managed salmon fisheries:

- The South Coast Salmon Managed Fishery permits authorisation holders to operate from assigned beaches between Shoal Cape and Cape Beaufort (Point D'Entrecasteaux).
- The South West Coast Salmon Managed Fishery operates north of Cape Beaufort. Fishermen can operate from any beach in this zone, and share the use of beaches under priority of netting rules specified in the Regulations.

Industry members are being encouraged to investigate ways of improving fish handling and value-adding techniques to improve their profit margin. As salmon is considered a prime recreational species, resource-sharing issues are likely to be a major consideration in future management of these fisheries.

Boundaries and access:

As at May 2002, each of 18 licensed South Coast teams had access to a nominated beach in the South Coast Salmon Managed Fishery, the boundaries of which are '*Western Australian waters below high water mark from Cape Beaufort to the waters up to the eastern boundary of the State on the South Coast of Western Australia*'. There are no legislated net length or mesh size restrictions for the South Coast fishers.

A further 12 licensees collectively have access to beaches in the South West Coast Salmon Managed Fishery, the boundaries of which are '*Western Australian waters from the eastern boundary of the State on the north coast of Western Australia to Cape Beaufort on the south-west coast of Western Australia*'.

Main fishing method: Beach seine

Retained species: Commercial production (season 2002): 2,623 tonnes.

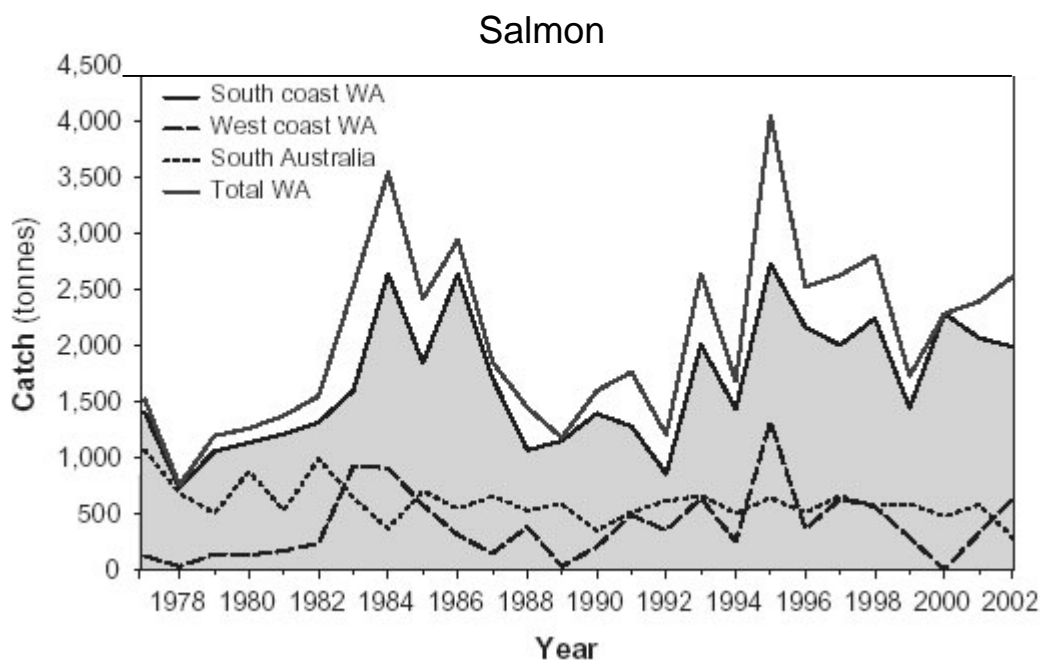


Figure 7 Australian salmon catches for South Australia and Western Australia for the period 1977 to 2002.

2.9.3 Australian Herring Fishery

Management summary: The majority of the commercial catch of Australian herring (*Arripis georgianus*) is taken using herring trap nets (also known as ‘G’ trap nets) from South Coast beaches. Many commercial participants within the herring fishery are also involved in the salmon fishery.

South Coast herring fishers are individually assigned to particular beaches and are specifically endorsed to use herring traps. There is a closed season (10 February to 25 March each year) that closely matches the peak salmon migration season along the South Coast.

Herring may also be commercially caught by beach seine and set net by any licensed commercial fisher holding an unrestricted fishing boat licence, provided the use of this method is permitted in the particular area, and the waters being fished are not subject to other fishery management arrangements.

As herring is considered a prime recreational species, resource-sharing issues are likely to be a major consideration in future management arrangements for this fishery.

Boundaries and access: During 2002, there were 10 licensees (most of whom are also Australian salmon fishers) permitted to take herring using ‘G’ trap nets set on nine nominated South Coast beaches. In addition, small quantities of herring are also taken by wetline vessels, and by some coastal and estuarine licensed fishers on the South Coast.

Main fishing method: Trap (‘G’) net, beach seine and gillnet.

Retained species: Commercial production (season 2002):
 State: 600 tonnes
 South Coast: 508 tonnes

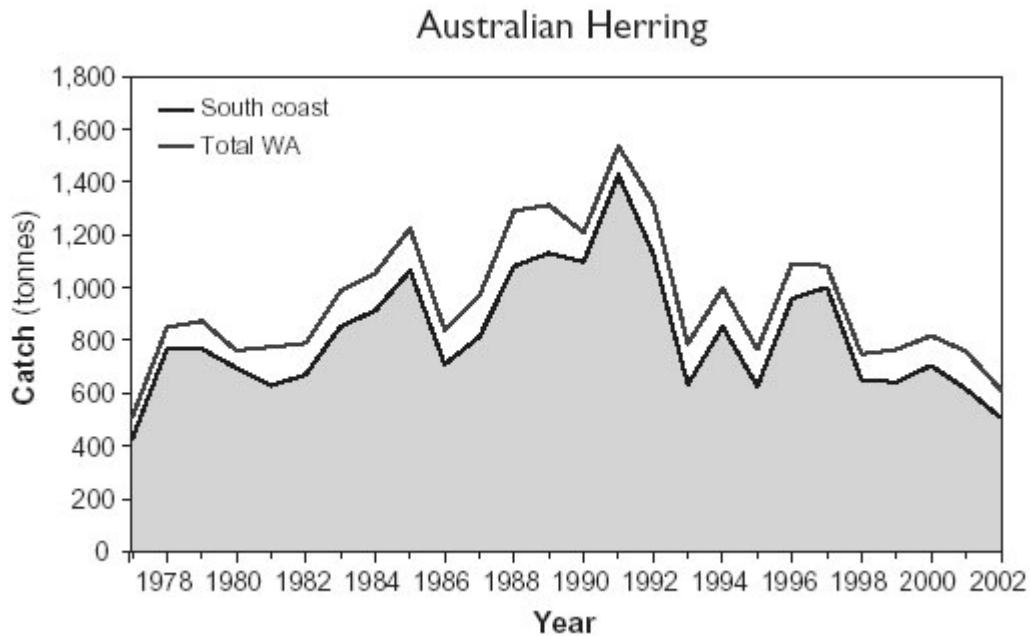


Figure 8 Catches of Australian herring from the South Coast and the total Western Australian catch for the period 1977 to 2002.

2.9.4 Demersal Gillnet and Demersal Longline Fisheries

Management summary: The take of demersal finfish, including shark, by demersal gillnet and longline, is controlled on the South Coast and the West Coast (south of Shark Bay) through two similar management plans. Both fisheries are managed using effort controls in the form of limited entry and individually transferable effort system that regulates both time and gear use into tradeable units of entitlement. One unit permits the use of one net of a particular length, or a demersal longline with a particular number of hooks, for one month.

Management has historically been focused on ensuring the sustainable exploitation of three main species – the whiskery shark (*Furgaleus macki*), dusky whaler shark (*Carcharhinus obscurus*) and gummy shark (*Mustelus antarcticus*). On the West Coast, the sandbar or thickskin shark (*Carcharhinus plumbeus*) is also emerging as an important commercial species.

Joint Authority Southern Demersal Gillnet and Demersal Longline Fishery (JASDGDLF): The joint authority arrangement for the JASDGDLF covers the take of sharks, rays and bony fish by ‘demersal gillnets and all other lines’ (demersal longlines) from 33° S latitude to the WA/SA border and the limit of the Australian Fishing Zone.

West Coast Demersal Gillnet and Demersal Longline Interim Managed Fishery (WCDGDLIMF): Extensive research carried out on the commercially important shark species off the Western Australian coast indicates that this fishery shares a series of unit stocks with the JASDGDLF. Because of the commonality of these key stocks, the WCDGDLIMF is reported under the South Coast bioregion. The biomass targets for the three major species in the South Coast fishery also apply to the West Coast fishery.

The West Coast fishery is currently managed under an interim management plan, which is due to expire on 31 May 2004. The Minister for Fisheries has recently authorised the Department to undertake consultation on a new management plan for the fishery, which is intended to be in place by the expiry of the interim plan.

Following the conclusion of the five-year gear reduction strategy in the JASDGDLF in 2000/01, the Department is currently reassessing the status of the three key target species, and will initiate a management response on the basis of these results. In addition, the Department is now considering ways to address key shark management issues, including the removal of latent effort, limiting increases in fishing efficiency to cap effort at its current level, and reducing fishing mortality on sharks in other fisheries.

Growing international and national concern about the need to conserve sharks means that there will be continuing pressure to implement further measures to restrict shark catches and bolster breeding stocks.

The ability of fishers to take sharks by other methods outside the managed shark fisheries continues to be a matter of concern. The *Fish Resources Management Regulations 1995* were amended in November 2002 to prohibit both commercial and recreational fishermen from attaching hooks to rock lobster pots, pot lines, mooring lines and anchor ropes. This prohibition was implemented to reduce the catch of large sharks, particularly dusky whalers, which are targeted for their fins.

The WA Demersal Net and Hook Fisheries Management Advisory Committee met on August 8 and 21, 2002, specifically to discuss the National Plan of Action for the Conservation and Management of Sharks, which was adopted by State, Territory and Commonwealth representatives on the Shark Assessment Group in late 2002.

A draft application has been submitted for both the WCDGDLIMF and the JASDGDLF as part of Environment Australia's ecological sustainability reporting process under the *Environment Protection and Biodiversity Conservation Act 1999*. A final application is being developed which will be submitted to EA in 2004.

Boundaries and access: Joint Authority Southern Demersal Gillnet and Demersal Longline Fishery: The JASDGDLF was declared a limited entry fishery in 1988, managed under a Joint Authority with the Commonwealth Government. It covers the waters from latitude 33° S to the WA/SA border. For the purposes of management, the fishery is composed of two zones: zone 1 extends from latitude 33° S around the coast as far as longitude 116°30' E, and zone 2 from 116°30' E to the WA/SA border (129° E).

The fishery is currently managed using effort controls in the form of time/gear units. One unit allows a fisher to use one 'net' for one month. This management strategy was introduced in 1992 and net length has been modified to reduce effort in a series of stages through to 2000/01 (see *State of the Fisheries Report 2000/2001*). All JASDGDLF units now permit the use of either 270 m of demersal gillnet (15 or 20 mesh-drop) or 90 demersal longline hooks for one month. In the 2001/02 season, there were 57 JASDGDLF licences.

West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery (WCDGDLIMF): An interim management plan for the demersal gillnet and demersal longline

fishery between latitude 33° S and a line drawn north of North West Cape (114°06' E) was introduced in 1997/98. However, shark fishing has been prohibited between Steep Point (26°30' S) and North West Cape since 1993. Under the interim plan, the fishery is managed using effort controls in the form of time/gear units, with each unit allowing a net length of 540 m. Implementation of the full management plan is currently awaiting the outcomes of legal challenges to the proposed unit allocation. Access to the WCDGDLIMF during 2001/02 was limited to 26 licences, which had powered net drum endorsements.

Main fishing method: Demersal gillnet.

Retained species:

Commercial production (season 2001/02): All sharks	1,152 tonnes.
Key species	766 tonnes.

The total shark catch of 1,152 t from these fisheries in 2001/02 comprised 842 t from the JASDGDLF and 310 t from the WCDGDLF, made up as follows:

JASDGDLF:

Dusky whaler	176 t
Gummy shark	343 t
Whiskery shark	141 t
Sandbar shark	30 t
Other shark	152 t
Total shark	842 t

WCDGDLIMF:

Sandbar shark	130 t
Dusky whaler	60 t
Whiskery shark	30 t
Gummy shark	15 t
Other shark	75 t
Total shark	310 t

In addition to these shark landings, approximately 10–20 per cent of the overall demersal gillnet and longline catch is now composed of finfish species that are retained for sale. In 2001/02, scalefish landings totalled 160 tonnes in the JASDGDLF and 87 tonnes in the WCDGDLIMF. For a detailed breakdown of catch species composition in the two South Coast zones and the West Coast fishery, see the following tables.

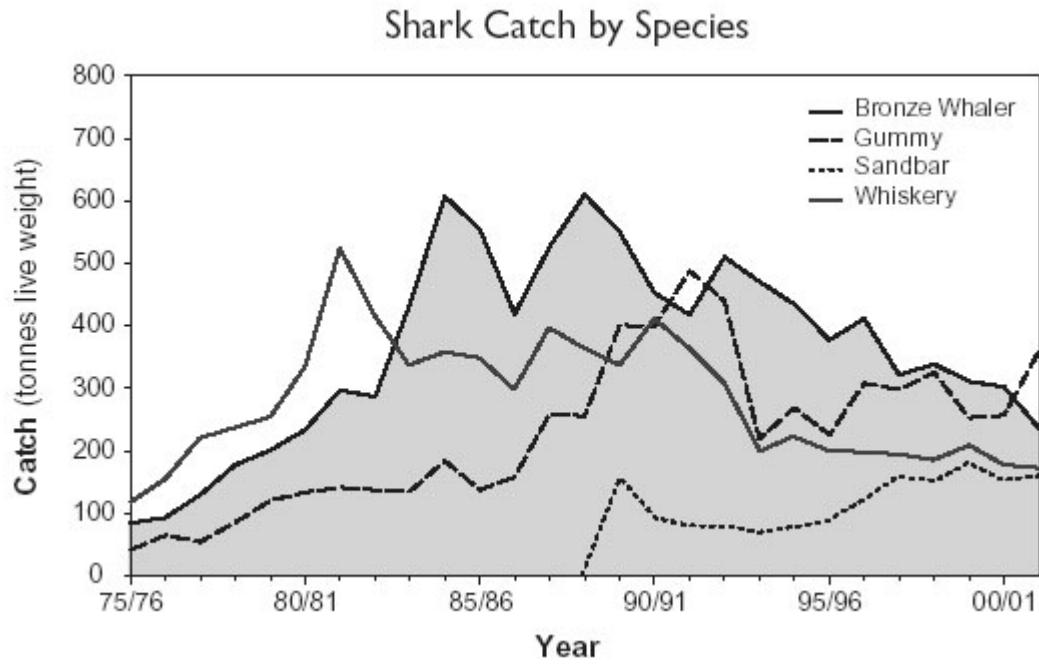


Figure 8 Annual catches of target shark species in the demersal gillnet and demersal longline fisheries (JASDGDLF and WCDGDLIMF) for the period 1975/76 to 2000/01.

SPECIES		CATCH (tonnes)				STATE TOTAL
		JASDGDLF		WCDGDLF	Total	
		Zone 1	Zone 2			
Gummy	<i>Mustelus antarcticus</i>	19	324	343	15	358
Dusky	<i>Carcharhinus obscurus</i>	105	71	176	60	236
Whiskery	<i>Furgaleus macki</i>	74	67	141	30	171
Sandbar (thickskin)	<i>Carcharhinus plumbeus</i>	30	0	30	130	160
Hammerhead	Sphyrmidae	7	31	38	22	60
Wobbegong	Orectolobidae	11	7	18	21	39
Blacktip	<i>Carcharhinus</i> spp.	1	< 1	1	21	22
School	<i>Galeorhinus galeus</i>	0	15	15	0	15
Skates and rays		0	6	6	1	8
Copper	<i>Carcharhinus brachyurus</i>	0	1	1	5	6
Shovelnose rays	Rhinobatidae, Rhyncobatidae	0	0	0	5	5
Pencil	<i>Hypogaleus hyugaensis</i>	< 1	2	2	1	3
Other sharks		55	17	72	0	72

Figure 9 Shark catch species composition for the demersal gillnet and demersal longline fisheries (JASDGDLF and WCDGDLIMF) 2001/02.

SPECIES		CATCH (tonnes)				
		JASDGDLF		Total	WCDGDLF	STATE TOTAL
		Zone 1	Zone 2			
Queen snapper	<i>Nemadactylus valenciennesi</i>	9	22	30	7	68
Blue groper	<i>Achoerodus gouldii</i>	9	11	20	4	44
Pink snapper	<i>Pagrus auratus</i>	2	7	8	14	31
Dhufish	<i>Glaucosoma hebraicum</i>	6	1	8	16	31
Samson fish	<i>Seriola hippos</i>	5	2	7	12	27
Salmon	<i>Arripis truttaceus</i>	6	0	6	<1	12
Redfish	<i>Centroberyx affinis</i>	<1	4	4	<1	9
Boarfish	Pentacerotidae	<1	3	3	<1	6
Leatherjacket	Monacanthidae	<1	3	3	<1	6
Other scalefish		44	13	57	33	147

Figure 10 Scalefish catch species composition for the demersal gillnet and demersal longline fisheries (JASDGDLF and WCDGDLF) 2001/02.

2.9.5 South Coast Wetline Fishery

The Department of Fisheries' Catch And Effort Statistical (CAES) database indicates that a small proportion (7%) of the total statewide wetline catch in 2001/02 was reported from the South Coast bioregion.

Top ten species;	Redfish (<i>Centroberyx affinis</i>)	25 t
	Pink snapper (<i>Pagrus auratus</i>)	21 t
	Hapuku (<i>Polyprion oxygeneios</i>)	20 t
	Samson fish (<i>Seriola hippos</i>)	14 t
	Trevalla (<i>Hyperglyphe antarctica</i>)	12 t
	Cod (Serranidae)	8 t
	Dhufish, West Australian (<i>Glaucosoma hebraicum</i>)	7 t
	Wobbecong (<i>Orectolobus</i> spp.)	6 t
	Queen snapper (<i>Nemadactylus valenciennesi</i>)	5 t
	Australian herring (<i>Arripis georgianus</i>)	5 t

A review of the State's unmanaged commercial finfish (wetline) fishery is currently underway. The initial stages of the review will concentrate on the West Coast and Gascoyne regions, and once completed the review will shift focus to the South Coast and Pilbara/Kimberley regions. The wetline review will implement a more effective management framework for the commercial sector, and preventing further growth in this sector.

SECTION 3 THE PROPOSED RECREATIONAL FISHING STRATEGY

A wide range of issues have been taken into consideration in planning for the future management of recreational fishing in the South Coast Region. These issues have been identified through statewide recreational fishing planning days, through the West Coast and Gascoyne planning processes, and through consultation with regional stakeholder groups.

Through this consultation, the following vision statement was developed for the South Coast Recreational Fishing Management Strategy:

“To protect quality recreational fishing experiences on the South Coast for all fishers now and in the future.”

3.1 Guiding principles for management

Proposal 1 – Key principles for management

It is proposed that recreational fisheries management in the region be based on the following key principles which were endorsed during the West Coast and Gascoyne planning processes:

Government should ensure adequate funding is available for comprehensive research and management necessary for the effective management of recreational fishing.

Western Australia’s recreational fishing resources are a highly valued community asset. To protect the future quality of recreational fishing it is essential that the Government ensure adequate funding is allocated for effective management.

A key aim should be to ensure that the biodiversity of fish communities and their habitats and sustainability of fish stocks are preserved.

Management arrangements should take into account the biological characteristics of different species, their abundance, and the level of fishing pressure being exerted upon them. Fisheries management should therefore encourage fishing across a range of species, permitting a higher take of more robust species, and limit the take of more vulnerable species. Management arrangements must also be revised to account for increasing recreational fishing pressure.

Fisheries management should incorporate controls and measures that cover and anticipate increasing numbers of recreational fishers and their impact on fish stocks.

In the past, management has tended to react to problems as they arise. Management arrangements must recognise projected increases in fishing pressure as well as impacts of planned developments in the region which may increase the number of visitors or focus fishing pressure in certain areas.

As new information from research becomes available on biology or stock status, management arrangements should be modified accordingly.

Management should be based on the best available information, and where critical information is unavailable, a precautionary approach which seeks to minimise risk to fish stocks should be adopted.

The concept of precaution requires management authorities to take pre-emptive action where there is a risk of severe and irreversible damage to fish resources and the environment. In a situation of high potential risk, and a lack or inadequacy of information, the concept of precaution requires the onus of scientific proof to be on those who intend to draw benefits from the resource and contend that there is no risk.

This contrasts with the existing situation where the Department of Fisheries may be subject to intense scrutiny to justify conservative management decisions which are based on limited available research.

Fishing rules should acknowledge that equitable access to fishing opportunities across recreational user groups is important.

There are a wide range of recreational user groups who may have different values/requirements. These include local residents, visitors, boat fishers, shore-based fishers, charter boat clients, spearfishers, netters, gamefishers seeking 'trophy' fish or fishers seeking a wilderness type experience to which a pristine environment may be as important as fishing quality.

A growing number of recreational fishers focus on quality and enjoyment of fishing and retaining a fish or two as a fresh feed, rather than accumulating large quantities of fish. The values of non-consumptive users of this resource, such as recreational divers, and passive users should also be recognised.

Fishing rules must endeavour to address the relative impacts of users on an equitable basis and that equity should be based on principles of ensuring 'fair and reasonable' access to the resource.

The value of recreational fishing should be clearly recognised and given proper weight in all government and community planning processes, for example, Marine Parks, industrial developments and any other future development which may impact on the environment on the South Coast.

The value of recreational fisheries must be recognised by the community in terms of both social and economic benefits. It is important that recreational fishing is documented as a legitimate use of fish resources and given due consideration in marine planning and catchment planning processes. Any development must be considered in terms of its potential impact on the aquatic environment and its potential impact on the quality of recreational fishing.

Fishing rules should be kept simple, and where possible and practical, made uniform across the region.

Management strategies must be simple enough to be understood by the large numbers of occasional fishers and visitors to the region, while providing for effective conservation of the resource. Where possible, management arrangements should be consistent throughout the region.

Recreational fishing rules should be designed to protect the sustainability of stocks and manage the total recreational catch, as well as protect fish at vulnerable stages in their life cycle, for example, spawning aggregations.

Existing management arrangements do not currently place a ceiling on the total recreational catch. In the face of increasing recreational effort, it will become necessary for the total catch to be managed to ensure sustainability of stocks and preserve fishing quality. It is essential that recreational fishing is managed in a spirit of cooperation with the community, and the development of new management for the recreational fishery must take into account community attitudes and values. This also needs to be reflected in commercial fisheries management.

The benefits from management of the total recreational catch should flow back to the recreational sector and be reflected in maintained or improved fishing quality and sustainability.

Management arrangements must be put in place to ensure that benefits in recreational fishing quality accruing from controls on the recreational take do not simply flow to the commercial sector. Currently, in all Western Australian fisheries, there is no mechanism to manage to total take of all sectors of the fishery.

Clear processes should exist to resolve resource sharing issues which support the integrated management of fish stocks.

It is outside the scope of this review to adequately resolve resource sharing and allocation issues. A clear process should be developed by Government as a matter of priority to resolve issues of this nature. This will assist in protecting the future quality of recreational fishing and ensure equity in catch as determined by Government policy.

3.2 Information for management – catch and fishery performance

3.2.1 Key issues and proposals

It is critical that good quality time-series data on fishing activity, catches, and fish population structure is developed for all recreational fisheries.

This type of information is essential for understanding what is being caught by the recreational sector and assisting with the resolution of fishery management and resource sharing issues.

A survey is currently being conducted to estimate the impact of recreational fishing on key species in South Coast estuaries. Comprehensive creel surveys of both shore and boat anglers should be repeated on a regular basis to assist in the monitoring of fisheries and the evaluation of management arrangements.

Detailed 12-month catch surveys for a region such as the South Coast cost in the order of \$250,000 each and utilise a significant proportion of the resources of the Department of Fisheries research and compliance officers. To provide adequate catch and effort data, surveys should be conducted at a minimum of every three years.

The introduction of a general recreational fishing licence for marine finfish could provide the Department of Fisheries with a comprehensive research database to aid in the ability to effectively target recreational fishers for telephone and postal surveys. Although the introduction of a general recreational licence is against the current Government's policy, the proposal should be considered as a management option in the future.

Proposal 2 – Major catch survey

A major recreational catch survey be undertaken every three years to provide detailed information about the spatial and temporal distribution of recreational activity and catches on which to base management decisions.

As a subset on an annual basis, information should be collected on indicator species and areas to monitor recreational fishing quality.

Proposal 3 – Structured logbook program

The Department of Fisheries introduce a structured angler logbook program in the South Coast Region for key species in specific regional areas. The logbook program needs to be tightly coordinated by the Department of Fisheries with regular feedback provided to logbook participants.

Department of Fisheries' Research Division advice

- The collection of ongoing catch data is of concern, particularly as commercial participation in coastal fisheries is in decline. The development of a structured logbook program run in conjunction with creel surveys may assist in providing useful catch and effort data. The structured logbook program would need to be accompanied by a species identification guide to ensure proper identification of key species, such as the different whiting and trevally species. Other forms of data collection, such as telephone surveys, any also need to be considered.

3.2.2 Species biology

Only a limited amount of biological information is available for many of the species targeted by recreational anglers in the South Coast. While a considerable amount is known about the biology of some species such as Australian salmon, herring and shark, very little stock assessment information is available for most species.

It must be acknowledged that carrying out comprehensive biological work on a range of important recreational species would be difficult to obtain from within the current recreational fishing program budget, particularly at a regional level. Alternate sources of funding are required if research is to be undertaken in the near future.

Proposal 4 – Priority species for research

Research should be undertaken on the following key recreational species in the South Coast (in order of priority) to provide information on species biology and stock structure. Predictive fisheries stock assessment models and, where practical, indices of recruitment are to then be developed for these key species:

Species	Research status			
	Biology	Stock assessment	Exploitation status	Breeding stock level
Black bream	Wellstead and Walpole/ Nornalup Inlets only.	Yes – commercial catch only.	Fully exploited.	Considered adequate.
King George whiting	Yes	Yes – Commercial catch only.	Fully exploited.	Considered adequate.
Silver trevally	Yes	N/A	N/A	N/A
Queen snapper	Limited.	N/A	N/A	N/A
Red snapper	Yes	N/A	N/A	N/A
Breaksea cod	Yes	N/A	N/A	N/A
Pink snapper (south coast)	Limited – research project currently being undertaken.	N/A	N/A	N/A

Department of Fisheries' Research Division Advice

- Research into the biology of King George whiting has recently been completed.
- Research on silver trevally indicates the possibility of separate onshore and offshore stocks.
- There is a good understanding of the biology of red snapper (courtesy of an AFMA/FRDC project).
- Preliminary research into the biology of breaksea cod is complete. An additional study is planned to complement current knowledge.
- Research on West Coast and South Coast pink snapper stocks is currently being undertaken.

3.2.3 Quality indicators for recreational fisheries

In the absence of detailed information on the biology of species or status of many stocks, management has tended to be reactive as problems arise. To assist in monitoring fishing quality, ‘fishing quality indicators’ should be developed to monitor recreational fishing in the South Coast and used to measure effectiveness of management strategies.

It is proposed that information be collected on a group of ‘signature’ species which are recognised as important to the recreational fishery. Relatively abundant species such as herring are not usually suitable indicators as they are one of the last species to be noticeably affected when overall fishing quality declines.

Quality and diversity indicators should encompass the level of fishing activity, fishing success of anglers, the relationship of catches to bag limits, the range and number of species caught per trip, and the range of sizes for each key species caught.

Value indicators should encompass participation levels, including estimates of the number of recreational fishers who fish in the South Coast each year, the number of days fished, and expenditure by fishers in region.

Proposal 5 – Fishing quality indicators

A range of ‘fishing quality indicators’ based on angler surveys should be developed to identify trends in fishing quality in the region and assist in the review of the effectiveness of this strategy.

These indicators should cover fishing quality, diversity and the value associated with the fishing experience.

It is proposed that the following species be used as key indicator species:

Indicator species	<i>Environment where species is most often found</i>		
	Estuarine	Inshore	Offshore demersal
	Black bream King George whiting Flathead	King George whiting Australian salmon Pink snapper Flathead Blue groper Silver trevally	Pink snapper Breaksea cod Samson fish Red snapper Queen snapper Harlequin fish

Department of Fisheries' Research Division advice

- Catch and effort information has been gathered on the major estuarine species.
- Catch and effort information is currently not available for demersal offshore species for the South Coast Region, other than charter boat logbook data.
- Charter boat logbook data indicates that dhufish and blue groper are not key offshore demersal species on the South Coast.

Besides providing quality indicators based on catch level and the size of fish, the range of species selected will also provide quality indicators for fishing in the offshore, nearshore and estuarine environment. To provide ongoing monitoring, data should be collected on an annual basis.

3.3 Protecting vulnerable fish and managing the recreational catch

3.3.1 Key issues and proposals

Bag and size limits: Based on the three-tiered bag limit structure and an assessment of a species risk of overexploitation, individual species have been placed into one of the following three categories:

- **Category 1 Fish**
These fish are considered to have the highest risk of over exploitation and require high levels of protection.
- **Category 2 Fish**
These fish are considered to have a moderate risk of over exploitation and require moderate levels of protection.
- **Category 3 Fish**
These fish are considered to have a lower risk of over exploitation and require lower levels of protection.

For Category 1, 2 and 3 Fish, the bag limit for each species was proposed following consultation between Department of Fisheries managers, research scientists and key stakeholder groups.

The proposed bag limits should be seen as part of a total management approach to managing the total recreational catch. In the future, as recreational fishing pressure continues to grow, more emphasis may need to be placed on input controls such as restricting the time people can fish rather than by winding down the bag limit.

It should be noted that the proposed new limits still constitute a reasonable feed for a fisher and his family. The appropriateness of the existing minimum legal size limits have been reviewed on the basis of the available scientific information and their application to management. The bag and size limits that currently apply on the South Coast are detailed in the tables at Appendix A.

Proposal 6 – Bag and size limits

Category 1 Fish – total mixed daily bag limit of 7			
<p>Category 1 Fish are considered to have the highest risk of overexploitation. Many fish in this category have low catch rates and levels of abundance, while others may be highly valued for their fishing and eating qualities. Many Category 1 Fish are slow growing and mature at four years plus. For these reasons, Category 1 Fish require a high degree of protection.</p> <p>(Note: *denotes proposed change to current management)</p>			
Species	Species bag limit	Size limit	Other controls
Billfish including sailfish, swordfish, marlins (combined)	1*		Max 30 kg or 1.2 m
Boarfish	4*		
Cobbler	4*	430mm	
Cods – including breaksea and harlequin (combined)	4	300mm*	
Dhufish	2*	500mm	
Groper, western blue	1	600mm*:#	
Hapuka and trevalla	2*		
Mahi mahi	2*		
Mulloway	2*	700mm*	
Pink snapper	4*	410mm*	
Queen snapper (blue morwong)	4*	410mm	
Red snapper (Bight redfish/nannygai)	4*	300mm*	
Samson fish/amberjack/yellowtail kingfish (combined)	2*	600mm	
Sharks and rays (combined)	2*		
Trout, brown and rainbow (combined)	4	300mm	
Tuna – southern bluefin, yellowfin, bigeye (combined)	2*		

Category 2 Fish – total mixed daily bag limit of 16				
<p>Category 2 Fish have a moderate risk of overexploitation. Many fish in this category have moderate catch rates and levels of abundance. Category 2 Fish are mostly found in inshore and estuarine areas, are highly sought after by recreational fishers and mature at three to four years.</p> <p>(Note: *denotes proposed change to current management)</p>				
Species	Species bag limit	Size limit	Other controls	
Bream – black	8*	250mm	2 fish over 350mm [#]	
Dory, John and mirror (combined)	8*			
Flathead and flounder (combined)	8*	300/250mm		
Goatfish	8*			
Leatherjacket	8*	250mm		
Salmon, Australian	4	300mm		
Snook and pike (combined)	8*	300mm		
Swallowtail	8*	280mm*		
Sweep	8*	250mm*		
Tailor	8	300mm		2 fish over 600mm [#]
Tarwhine	8*	230mm		
Trevally, silver (skippy) etc.	8*	250mm		
Tunas – other including bonito (combined)	8*			
Whiting, King George	12*	280mm		
Whiting, yellowfin	16*			
Wrasse	8*			

[#] Refer to **Proposal 8**

Category 3 Fish – total mixed daily bag limit of 40

Category 3 Fish have a lower risk of overexploitation. Fish in this category generally have higher catch rates and levels of abundance and are mainly found inshore. These fish have a widespread distribution and mature at two-plus years. Category 3 Fish include all fish not listed in other categories except baitfish of the sardine, anchovy and hardyhead families (*Clupeidae*, *Engraulididae* and *Atherinidae*), redfin perch, gold fish, carp and tilapia.

(Note: *denotes proposed change to current management)

Species	Species bag limit	Other controls
Australian herring Garfish Mackerel, blue Mullet, sea and yellow-eye (combined) Whiting – (other) Unlisted species - (All species not specified except baitfish and feral freshwater species)	40 combined	

Department of Fisheries' Research Division Advice

- Some concern exists in relation to the impact of current targeting of herring in the lower West Coast Region. Additional management of the herring fishery may be required in future years.

Crustaceans

(Note: *denotes proposed change to current management)

Species	Bag limit	Size limits	Other controls
Crab, blue swimmer (manna)	20*	127 mm	Boat limit of 40*
Crab, mud (green and brown)	5*	150 mm*	Boat limit of 10*
Marron	10	76 mm 90 mm Harvey Weir	Recreational licence; closed season.
Prawns, school and king (combined)	9 litres		Closed areas
Rock lobster	8	76 mm – 77mm WRL 98.5 mm Southern RL	Boat limit of 16 - Recreational licence. Closed season.

Molluscs and other reef animals				
(Note: *denotes proposed change to current management)				
Species	Bag limit	Boat limit	Possession limit	Other controls
Abalone, brownlip Abalone, greenlip	5 combined	10 combined	10 (20 at place of residence)	Licence & Season
Abalone, Roe's and all other abalone species not specifically mentioned (combined)	20	-	20 (80 at place of residence)	Licence & Season
Cockles and pipis [#] All other species of edible mollusc not specifically mentioned (combined)	2 litres			
Mussels	9 litres			
Oysters [#]	20*			
Razorfish [#]	20*			
Scallops	20*			
Sea urchins [#]	20*			
Squid, cuttlefish and octopus (combined)	15	30		

[#] Refer to **Proposal 8**

Department of Fisheries' Research Division advice

- There are considerable conservation issues around the ongoing harvesting of some of the cockle species, oysters, razorfish, and possibly sea urchins that need to be considered in the near future.

Protected species

These species are totally protected by Fisheries legislation throughout Western Australia and may not be taken.

Species	Scientific name
Potato cod	<i>Epinephelus takula</i>
Leafy seadragon	<i>Phycodurus eques</i>
Whale shark	<i>Rhiniodon typus</i>
Great white shark	<i>Caracharodon carcharias</i>
Humphead Maori wrasse	<i>Cheilinus undulatus</i>

Proposal 7 – Proposed changes to the current legal size limits

Note: Any changes to the size limit will apply to all sectors including commercial fishers.

Species	Old size (mm)	New size (mm)	Size when 50% of the stock reach maturity (mm)
Cods (all species)	-	300	Varies between species
Groper, Western blue	500	600	Not known
Mulloway	500	700	750
Pink snapper (Wilson Inlet)	280	410	400
Red snapper (Bight redfish/nannygai)	230	300	Not known
Swallowtail	230	280	Not known
Sweep	-	250	Not known
Mud crabs (note: occasionally caught on South Coast)	150 (green) 120 (brown)	150 for both	A size limit of 150mm will ensure they breed at least once before being taken.

Proposal 8 – Increased protection for certain species

Comment should be sought on the following options:

- 8(a)** Spear fishing exclusion zones or a total spear fishing prohibition be introduced for western blue groper (*Achoerodus gouldii*) on the South Coast due to their ease of capture and vulnerability to overfishing.
- 8(b)** A slot limit of two (2) black bream (*Acanthopagrus butcheri*) over 350mm be introduced to provide increased protection for mature fish.
- 8(c)** A slot limit of two (2) tailor (*Pomatomus saltatrix*) over 600 mm be introduced to provide increased protection for mature fish.
- 8(d)** Identifying areas where the take of species such as cockles, oysters, razorfish, and sea urchins should be prohibited due to conservation issues around the ongoing harvesting of these species.

Net fishing: During consultation with stakeholders, concern was expressed about the potential impact of set and haul netting in the South Coast Region and the complexity of the regulations applying to recreational netting in the region.

Currently, attended set netting is permitted in all ocean waters within 800 metres of the shore, not specifically closed to netting. Set netting is also permitted in several of the major estuarine and river systems on the South Coast, although permitted times and open seasons vary significantly throughout the region.

Recreational haul netting is only permitted in ocean waters not specifically closed to netting. Throw netting is also permitted in all ocean waters not specifically closed to netting and

several of the major estuarine and river systems on the South Coast. A summary of the current recreational netting rules on the South Coast is shown at Appendix B.

It should be noted that with the exception of mullet, the majority of species caught in set and haul nets can be caught by line.

The use of nets by Aboriginal fishers as a customary form of fishing has been highlighted as an issue in the past. An Aboriginal fishing strategy is currently being developed which is likely to recommend that separate fishing rules be established for Aboriginal fishers in recognition of customary fishing practices.

Regardless of the outcomes of the Aboriginal fishing strategy, key stakeholder groups held the opinion that the regional recreational fishing strategy should contain proposals designed to protect recreational fishing quality in the region as a whole.

Two options have been proposed to reduce conflict between line and net fishers following consultation with stakeholder groups including RFAC, Regional RFACs and Recfishwest.

The first option recommends phasing out haul and set netting over a three to five year period, as this form of fishing is viewed by many stakeholders as no longer being consistent with recreational fishing values, especially in estuarine areas. This process would be developed by local Regional Recreational Fishing Advisory Groups and may incorporate strategies such as annual incremental closures of South Coast waters, or the renewal of existing recreational licences only, with no new recreational netting licences to be issued.

The second option was to allow recreational netting to continue on the South Coast in a restricted capacity with a set of standardised rules applying across the region.

Proposal 9 – Recreational net fishing

Comment should be sought on two options:

- 9(a)** Recreational haul and set netting be phased out on the South Coast netting over a three to five year period; or
- 9(b)** Recreational netting be allowed to continue on the South Coast in a restricted capacity with a set of standardised rules applying across the region as follows:
- Haul netting be restricted to within 800 m of the shore in all oceanic waters of the South Coast region not specifically closed to netting (*currently only applies to set netting*).
 - Throw netting be permitted in ocean waters only on the South Coast as a means of collecting baitfish.
 - Set netting be prohibited from all ocean waters of the South Coast Region.
 - Set netting be prohibited in all inland waters except the Wilson, Beaufort, Wellstead, Gordon, Hamersley, Broke, Irwin and Stokes Inlets, Princess Royal Harbour and the

Thomas River and the Gardiner River on Wednesday and Friday nights from 1.5 hours before sunset to 1.5 hours after sunrise.

- Set netting be prohibited in the Broke, Irwin and Stokes Inlets and the Gardiner River between 1 November and 31 April the following year.
- All recreational set nets must be attended at all times and an hourly 'check and clean' carried out.

Fishing competitions: A number of concerns were raised by stakeholder groups, about a range of issues associated with fishing competitions.

Key issues identified included:

- The potential impact of large-scale fishing competitions on fish stocks, and the risk of localised, serial or seasonal depletion of key target species.
- Impact of fishing competitions on the seasonal availability of fish for other recreational fishers.
- Catch handling and catch care and the dumping of fish targeted for prizes.
- The continuation by some clubs of 'heaviest bag' or quantity-based competitions, where points or prizes are awarded for the take of large numbers or weights of key recreational target species.
- The commercial nature of some competitions, where revenue raised from entry fees and sponsorships is then used to benefit clubs.
- The effect of these issues on the general community's view of recreational fishing.
- The growing interest in commercial scale competitions which attract thousands of entrants, offer significant prizes, and attract major commercial sponsors.

The greatest concern has been expressed over fishing competitions which were open to the public, attracted large numbers of people, raised funds and encouraged people to take fish primarily for prizes, rather than for human consumption. These competitions appeared to be commercial fundraising or promotional ventures, with revenue or sponsorship benefits channelled back into covering organisational costs and profits used to fund club facilities or activities.

To gain an understanding of the relative impact that fishing competitions may have on fish stocks, a formal data collection and registration system is needed. Such a system would also allow the Department of Fisheries to manage the frequency and impact of large public competitions where required.

This data collection system has already been endorsed for the West Coast and Gascoyne Regions for competitions attracting more than 100 participants.

In the interest of collecting comprehensive data from across the State on the relative impact fishing competitions may have on fish stocks, the same registration and data collection system

that has been endorsed for the West Coast and Gascoyne Regions is proposed for the South Coast Region. However, due to the sensitive and pristine nature of much of the region, it has been proposed that these requirements apply to competitions with more than 50 participants.

In order to address any issues associated with poor catch care, handling and fish wastage, a code of conduct for fishing competitions will be developed with angling clubs. This code should be based on the Department's Code of Practice for Recreational Fishers, which was developed in response to the requirements of the *Animal Welfare Act 2002*.

The Recreational Fishing Advisory Committee (RFAC) developed the Code of Practice to promote responsible fishing standards by all recreational fishers that are consistent with public standards of humane treatment. The RFAC considers that responsible human use of, and interaction with, fish and other aquatic organisms by recreational anglers is appropriate, desirable and ethical.

The Code describes the general procedures for the catching and handling of fish and crustaceans for food, and recommended practices for the catch and release of fish.

General aims and principles behind the Code are designed to prevent cruelty and effectively manage the welfare of fish and other aquatic organisms. Anglers are encouraged to minimise stress and trauma to aquatic animals by:

- using appropriate legal gear;
- landing the catch as quickly as possible;
- handling the aquatic animals appropriately;
- rapidly applying humane methods of killing to aquatic animals caught for food;
- applying the correct techniques to improve the survival of fish being released;
- ensuring that other aquatic animals e.g. seabirds, turtles and seals are not harmed as a result of fishing activities;
- disposing of unwanted fishing gear and litter onshore, in a proper disposal facility.

Proposal 10 – Fishing competitions

- 10 (a)** All fishing competitions with greater than 50 participants must formally registered in advance with the Department of Fisheries.
- 10 (b)** Competition organisers be required to keep an accurate record of the participation, catch and effort in each competition and forward catch returns to the Department of Fisheries for inclusion in the recreational fisheries database. The Department should develop standardised catch cards and data entry software with fishing clubs which are compatible with the recreational fishing database.
- 10 (c)** To ensure fishing competitions are conducted in line with recreational fishing ethics, and meet requirements under the Animal Welfare Bill, a formal code of conduct for fishing competitions should be developed by the Department of Fisheries, in line with the Code of Practice for Recreational Fishers, in consultation with fishing clubs and organising bodies.

3.4 Protecting and enhancing recreational fishing quality

3.4.1 Key issues and proposals

Recreational fishers have a range of values which they associate with fishing. These values define the “quality” of the fishing experience and collectively become the motivation for continuing involvement in fishing.

For most people the quality of the fishing experience is not defined by the quantity of fish they catch. Instead, the experience of seeing fish, being confident that they are available for capture, and capturing some fish are core values which differentiate fishing from other forms of outdoor recreation.

Community surveys (FWA 1996 onwards) support the view that many recreational fishers view “fishing quality” as a blend of experiences related to personal involvement in the process of seeking, capturing, and sometimes consuming fish.

However, equally important are values that include the enjoyment of being in a ‘wild’ and unpolluted environment and the social dimensions of fishing.

If heavy fishing occurs on fish populations, the proportion of large fish available tends to diminish, along with the stock density. Under heavy fishing pressure that approaches the maximum sustainable yield, the stock may be sustainable, but its structure changes. Larger, older individuals are quickly removed from the population and the fishery moves to targeting recruits as they reach legal size.

While this may not always represent a threat to the sustainability of the stock as a whole, it represents a threat to the quality of the recreational fishing experience. This situation is amplified where recreational and commercial fishers target the same species, particularly near major tourism centres.

The trade-off for a high level of fishing quality in the face of growing fishing activity is a reduction in total exploitation of the resource. Concern has been expressed in past planning processes that benefits obtained by managing the recreational fishery may merely ‘spill over’ as increased catches to the commercial sector. Therefore, an important consideration is the management of user conflict and competition for localised resources through spatial or temporal separation for different management objectives, and different styles of fishing and fishing methods.

Another area of increasing concern to the recreational fishing sector in recent years is the potential loss of access to important fishing areas through the implementation of marine sanctuary zones. Marine conservation reserves are entrusted to the Marine Parks and Reserves Authority, and managed by the Department of Conservation and Land Management.

A position statement formally recognising recreational fisheries management in the marine reserves planning process needs to be developed between the Department of Fisheries and the Department of Conservation and Land Management.

Recreational fishing priority areas: At the recreational fishing planning day, suggestions were made that to protect recreational fishing quality, areas should be established which are managed primarily for recreational fishing values.

The nearshore waters around key population centres were identified as being of significant importance to recreational fishers. Management decisions, such as those affecting resource allocation and access, should give prime consideration to recreational fishing values in these areas. Other uses, such as commercial fishing and aquaculture, should be of a type and level which is compatible with recreational fishing values for the area.

The management arrangements for 'recreational priority areas' should not necessarily exclude particular activities. However, these must be assessed to be of a type or at a level that does not adversely impact on recreational values.

In order to maintain and enhance the quality of recreational fishing in these zones, a number of key management initiatives will be required which seek to limit the commercial exploitation of particular species or incompatible fishing techniques.

The establishment of discrete zones that recognise recreational fishing as a priority would have the following significant social benefits:

- Guard against unmanaged shifts in resource sharing through increased commercial fishing activity.
- Secure long-term recreational access to key areas.
- Highlight the importance of recreational fishing in other planning processes.
- Help ensure that the majority of benefits from tighter regulation of recreational fishing flow back to the recreational sector in the shape of improved fishing quality and reduced risk of serious localised depletion.
- Help minimise social conflict by reducing the incidence of incompatible activities.
- Create a focus for recreational fishing as a major tourism drawcard in the South Coast Region.

This initiative should be progressed through the Integrated Fisheries Management Planning Process for the South Coast Region.

Proposal 11 – Recreational fishing priority areas

The importance of recreational fishing as a component of tourism and lifestyle should be recognised in the Integrated Management Planning Process and the Marine Reserves Planning Process.

Through this process, the following areas should be considered for the priority management of recreational fishing:

- All estuarine systems;
- Twilight Cove;
- Recherche Archipelago
- Waters adjacent to Fitzgerald River National Park;

- Cape Vancouver to West Cape Howe.

Access for recreational fishers: Continued access for recreational fishers to coastal areas, freshwater systems, Aboriginal land and conservation areas is an important and significant issue.

On occasions in the past, due to problems associated with interference to fences or livestock, the owners of farming land have restricted or prohibited recreational fishers from accessing fishing locations.

It is recognised that farmers have the right to take steps to protect livestock and ensure their equipment and property is not interfered with.

Members of the recreational fishing community believe it is important that fishers act with a sense of personal responsibility when accessing fishing locations through farming land. Consequently, steps should be taken to promote responsible angler behaviour.

To achieve a desirable outcome where recreational fishers can continue to access fishing locations, particularly inland waters, members of the recreational fishing community are supportive of the development of a code of conduct for accessing fishing locations through farming land.

The recreational fishing community were supportive of the code which should have the following key elements:

- Leave no rubbish behind.
- Any fish frames or offal should be removed.
- All gates which are found shut must be left shut.
- No lighting of fires.
- Under no circumstance should any fences be cut or interfered with.
- Any machinery or equipment should not be interfered with.
- Firearms or dogs should not be taken on to stations without the approval of the station owner.

In the interests of defining these access routes and promoting responsible fishing behaviour, the Regional RFACs in each region could take a lead role in negotiating access routes for recreational fishers with farm owners. These routes could then be included in fisheries publications, along with the code of conduct for fishers.

Proposal 12 – Code of conduct for accessing pastoral leases and nature reserves

A code of conduct should be developed for recreational fishers accessing fishing locations through pastoral leases, nature reserves and Aboriginal land. The code should be developed in consultation with owners of pastoral leases and contain the following elements:

- Leave no rubbish behind.
- Any fish frames or offal should be removed.

- All gates which are found shut must be left shut.
- No lighting of fires.
- Under no circumstance should any fences be cut or interfered with.
- Any machinery or equipment should not be interfered with.
- Firearms or dogs should not be taken onto stations without the approval of the station owner.
- Aboriginal land should only be entered with the approval of the Aboriginal landowners.

Proposal 13 – Accessing fishing locations through farming land

Regional RFACs should enter into negotiations with the owners/leaseholders of farming land to define access routes to fishing locations, and that these routes and the code of conduct be promoted by the Department of Fisheries in advisory material.

Translocation and restocking: In recent years, some people have put forward the view that ‘restocking’ of marine and estuarine fisheries by using hatchery-reared juveniles should be used to boost fish stocks. While restocking has the potential to increase stocks, experiences in the USA and Canada have shown that large scale restocking can cause the collapse of some wild fisheries.

Key issues relate to the factors that determine the abundance of fish populations in any given year, the survival rate of juveniles, and the genetic risks posed to the survival characteristics of wild populations by selectively bred hatchery stock.

Some of the issues that need to be considered before restocking is selected as a means of enhancing fisheries include: knowledge of the status of the wild stock; the survival rates of hatchery juveniles; and the interaction between hatchery-reared fish and wild populations, and the risks posed by hatchery-borne diseases.

Issues surrounding the translocation of golden perch, Murray cod and Australian bass into and within Western Australia, for the purposes of recreational stocking, domestic stocking and commercial and non-commercial aquaculture, are currently be considered by the Department of Fisheries (*Fisheries Management Paper 174*).

Proposal 14 – Position statement on restocking as a stock enhancement strategy

Management of wild fish stocks should be the primary focus for recreational fisheries management. Restocking should only be considered as a strategy to assist with the recovery of a stock where it can be identified that the stock has been significantly depleted, and its recovery is endangered or will be prolonged.

To minimise any ecological impacts, all stock enhancement projects should be assessed against disease risk, biodiversity and genetic diversity criteria. Any stock enhancement project should also be adequately monitored and evaluated.

3.5 Resource sharing

3.5.1 Key issues and proposals

One issue of great concern to the recreational fishing community relates to resource sharing between the commercial and recreational fishing sectors.

Many recreational fishers believe the activities of the commercial fishing sector are having a significant impact on the quality of the recreational fishery.

Of particular concern were perceptions that the commercial catch of finfish from inshore waters and estuary systems was directly affecting the abundance of fish available for recreational take, particularly near major population centres and key holiday destinations.

In regional reviews already completed, for the West Coast and Gascoyne regions, there has been a high level of support for the commercial wetline benchmark date of 3 November 1997. After this date, it was proposed that no wetline fishing activity should be considered in the development of any new management arrangements for the finfish fishery. Discussion papers on the West Coast and Gascoyne wetline reviews are expected to be released for public comment by mid-2004. The South Coast wetline review will be released later in 2004.

Resource sharing does not just relate to 'catch shares' but includes competition in space and time for access to specific areas or fish stocks by various user groups.

This is demonstrated in the concern expressed over the increase in the number of proposed aquaculture leases in recent years, such as offshore tuna cages in the Recherche Archipelago.

Recreational fishers believe the establishment of aquaculture leases in key recreational fishing locations will result in a loss of access to specific areas and also reduce the quality of the fishing experience in remote locations.

Resource sharing may also include setting aside areas for purposes other than commercial or recreational fishing, such as conservation or eco-tourism, or traditional use by Aboriginal communities.

Consequently, the simple assignment of catch 'quotas' to each sector is unlikely to resolve resource sharing issues, even if a fishery has a comprehensive monitoring program in place for both sectors, reliable stock assessment, and is managed through a quota system.

It is the view of many key recreational stakeholder groups that resource sharing should be based on a clear set of principles and processes, and a sound understanding and recognition of the relative social and economic values for each fish species, fishery or area in question. It is also critical that any 'resource sharing' is clearly carried out within the context of sustainable fisheries.

It must be noted that while separate management arrangements are in place for different sectors of the commercial fishery, these management arrangements do not necessarily take into account the cumulative impact on the finfish resource. Similarly, the current management

arrangements in place for the recreational sector do not constrain the total recreational catch or effort.

Clearly, without management of the total catch from any fish stock, sustainability becomes a key issue.

While commercial fishing plays an important part in WA's economy, and also provides an essential community service in supplying local markets with fresh local seafood, it should be noted that some commercial fisheries heavily exploit key recreational species, generate low levels of income for operators, low economic and social returns, and demand high levels of management due to the conflict issues associated with their operations.

Recreational fishers have expressed concern that the South Coast Estuarine Fishery continues to significantly impact on the quality of recreational fishing on the South Coast and that the recent reduction in licences through the Fisheries Adjustment Scheme has had little effect on the total commercial catch.

Another area of concern is the operation of commercial fishers in close proximity to major population centres on the South Coast, particularly commercial fishers operating in the Demersal Gillnet and Demersal Longline Fishery and the South Coast and Commonwealth Trawl Fisheries.

Suggestions put forward at the recreational fishing planning day include phasing out or significantly reducing commercial fishing activity on species or in areas of high importance to the recreational sector, which, for the most part, have a low commercial value.

This would allow full development of the fishing tourism potential and recreational value associated with these species.

3.5.2 Resource sharing processes

To achieve better management of the finfish resource, a more integrated approach to management should be adopted and a separate process established to resolve resource sharing issues.

Integrated management is about achieving a long-term shift in the management of fisheries. However, the final form of such a new framework, or a time frame for its implementation, has not been determined. It should be noted that at the time of writing this strategy, the Government was considering its position on a new management framework proposed by the Integrated Fisheries Management Review Committee (*Fisheries Management Paper 165*).

Once the sectoral management frameworks are in place, and a new integrated system implemented, allocation issues can be addressed.

At the recreational fishing planning day, it was strongly felt that the following issues must be addressed through any resource sharing process in order to meet the recreational fishing

community's expressed needs, reduce social conflict, maximise social benefits from the use of key fish stocks, and ensure continuing fishing quality.

Proposal 15 – Resource sharing

As a priority, the following species should be considered for total catch management under an integrated management framework.

- Australian salmon;
- Herring;
- Black bream;
- King George whiting;
- Southern demersal species, including shark.

For each species, a forum should be held with key stakeholders, including recreational, commercial, Indigenous and conservation groups, to identify key issues which need to be taken into consideration in the development of an integrated management plan for the South Coast Region.

3.6 Protection of fish habitats

3.6.1 Key issues and proposals

Recreational fishing in WA tends to focus around coastal towns and marinas, with very high levels of fishing in the vicinity of boat ramps and near areas which provide accommodation facilities.

In the past, the small population of many coastal communities, the distance between towns, poor or no access roads and a lack of launching facilities have effectively protected many areas of coastal water and inshore reef from high levels of fishing activity.

One of the greatest influences on the productivity of our estuary systems and nearshore environment is human land use practice. Agricultural farming practices, fertilisers and industrial developments have impacted in different ways on the aquatic environment.

Recreational fishers have expressed concern that insufficient protection had been afforded to those areas subject to increasing fishing pressure.

The Government introduced the *Acts Amendment (Marine Reserves) Act 1997* to amend six Acts of Parliament, including the *Fish Resources Management Act 1994* to allow for the establishment of a representative system of multiple use marine conservation reserves along the Western Australian coastline. However, this process alone does not necessarily ensure that habitats important to fish stocks, such as breeding grounds or nursery areas, are identified or protected.

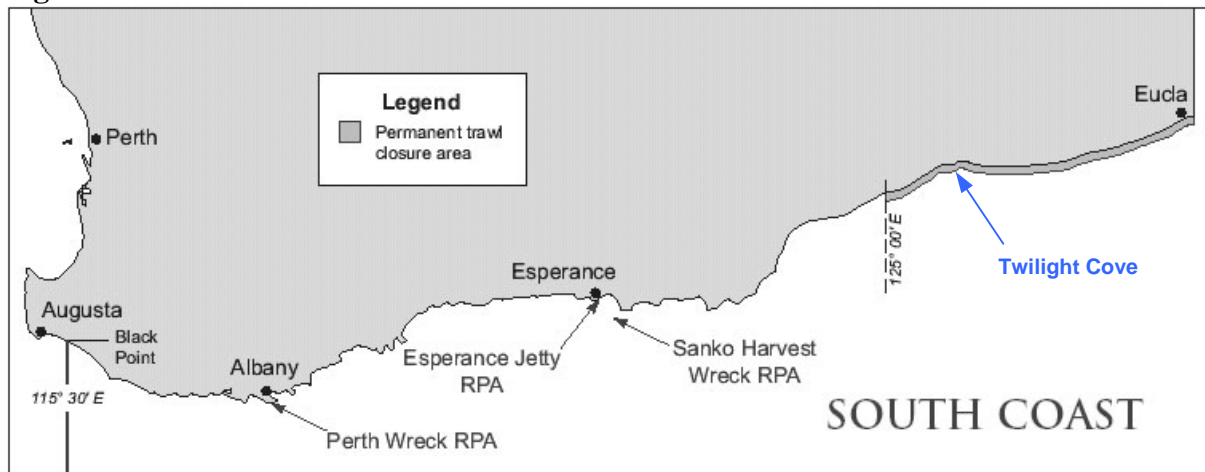
To complement this process, the Department of Fisheries is taking steps to establish a comprehensive database on important fish habitats in the different regions around WA.

It is also important that recreational fishers are recognised as key stakeholders in planning processes and assessments of development proposals. The potential impacts of proposed developments must be carefully assessed, not just with regard to impact on important habitat or nursery areas, but on the impacts of increasing or focusing fishing pressure into particular areas created from infrastructure developments (e.g. new roads, boat ramps, marinas, tourist resorts), and associated potential impacts.

On the South Coast, there are currently several areas closed to various forms of fishing to protect unique or sensitive habitats. Along the South Coast, commercial fishing activities that can impact on marine habitats are limited to a small amount of scallop trawling off Esperance. There is a coastal trawling closure of State waters along the western Great Australian Bight sector, enacted under Commonwealth Fisheries Legislation, to ensure deep-sea trawlers do not venture into sensitive coastal areas (South Coast Habitat Protection).

In addition, there are Reef Protection Areas (RPAs) which cover the *Sanko Harvest* wreck site, the end of the old Esperance Jetty and the *Perth* wreck dive site.

Figure 11 South Coast Habitat Protection



The concept of managing sensitive and remote locations as ‘remote wilderness fishing areas’ was considered during the West Coast and Gascoyne planning process. Remote wilderness fishing areas can be viewed as a possible alternative to ‘no take’ sanctuary zones, or as a buffer zone around sanctuary zones to provide increased protection for sensitive areas.

The guiding principles for the management of wilderness areas should foster low take and low environmental impact fishing activities, which may be achieved through the introduction of management measures, such as reduced bag limits or permitting fishing for immediate consumption only and prohibiting the stockpiling and removal of fish from the area. A code of practice should also be developed for recreational fishing in wilderness areas.

One area identified by regional RFACs and stakeholder groups for consideration as a ‘remote wilderness fishing area’ was Twilight Cove, located on the remote south-east coast of WA. Twilight Cove is famous along the Nullarbor for its excellent scenery and 70 metre limestone cliffs overlooking the Great Australian Bight. This pristine area offers a unique remote fishing experience, with access by four-wheel drive vehicles only through the Nuytsland Nature Reserve.

Proposal 16 – Low impact wilderness fishing experiences

That consideration be given to managing Twilight Cove as a remote wilderness fishing area on a trial basis.

The following guiding principles should be used for the management of the wilderness area:

- Low take.
- Low environmental impact.
- Code of practice should be developed for recreational fishing in the area.

3.7 Improving community stewardship - education and compliance

3.7.1 Key issues and proposals

A major objective is to establish and maintain a clear standard of community fishing behaviour which aims to ensure non-compliance is minimised, and where detected, appropriate sanctions applied.

These priorities were reflected in the Recreational Fisheries Program Business Plan (Fisheries WA 1996), with the creation of a separate community stewardship sub-program focused on angler contact and involvement of the community in both management planning and education activities, and an extended higher profile compliance program.

Recreational fisheries management currently relies upon an effective and broadly based set of compliance and education strategies, structured around activities designed to encourage peer education.

3.7.2 Education strategies

Education strategies currently in place for recreational fisheries in the region include:

- Interviews with anglers at beachfront and boat ramp locations by both Fisheries Officers and Volunteer Fisheries Liaison Officers;
- The distribution of educational resource and reference materials;
- Broad scale media campaigns through the print and electronic media; and
- Targeted media releases.

These are supported by focused compliance investigations into specific incident reports, and high penalties under the *Fish Resources Management Act and Regulations* for many offences. Fisheries Officers are empowered to issue warnings, infringement notices or to take prosecution action as compliance responses to detected breaches of Fisheries Legislation.

With the future quality of the recreational fishing resource largely dependent on the majority of the public voluntarily abiding by fishing rules, a structured communications and community education plan is needed that focuses on the issues and species pertinent to recreational fishing in the South Coast Region.

Such a plan should seek to ensure the recreational fishing community is properly informed of management decisions, and is given a clear lead on the values and attitudes which will assist in sustaining fish stocks.

The plan should also seek to help develop broad community recognition of the value of recreational fishing, as well as promote community support for responsible fishing behaviour and key management initiatives.

The plan should clearly identify key target groups, the strategies by which these will be kept informed, and performance indicators by which the effectiveness of the plan can be assessed.

The plan must be able to deliver educational messages to recreational fishers when they are fishing. This is the time recreational fishers are most receptive to receiving conservation messages on fishing. There are also significant educational benefits in maximising the direct involvement of fishing organisations and recreational fishers in planning and implementing structured education programs.

A key element in the communications plan for the South Coast Region should include the development of a comprehensive and widely available regional fishing guide to replace the wide range of brochures and leaflets currently produced by the Department of Fisheries.

This regional fishing guide would need to be supported by a comprehensive Internet website, effective advertising and media communication strategies that target regional and Statewide media, and an annual media campaign with changes in theme from year to year.

The production of practical educational tools in adequate quantities, including measuring gauges, fish rulers, adhesive bag limit guides and boat ramp and fishing venue signs, is also essential to getting the message across to anglers where and when it is most relevant.

Proposal 17 – South Coast Region community education plan

A recreational fisheries community education plan should be developed for the South Coast Region which focuses on the most important issues and species in the region. Such a plan should seek to keep the recreational fishing community informed of management decisions, give a clear lead on the values and attitudes which will assist in sustaining fish stocks, and develop a broad community recognition of the value of recreational fishing.

As a minimum, the plan should contain the following elements:

17(a) Regional fishing guide

A comprehensive regional guide to recreational fishing in the South Coast Region be produced to inform and educate fishers about recreational fishing management arrangements,

fishing ethics, research, conservation issues and promoting stewardship for fish stocks and the environment.

17(b) Educational resource materials

Adequate quantities of practical educational tools, such as measuring gauges, fish rulers, adhesive bag limit guides and boat ramp and fishing venue signs should be produced to support the regional fishing guide.

17(c) Annual media campaign

An annual media campaign be implemented to promote recreational fishing and fishing ethics in the region.

17(d) Volunteer involvement in education

Encourage the establishment and development of volunteer groups in structured fisheries education activities across the region.

17(e) Aboriginal fishing education strategy

An education campaign promoting the recognition of customary fishing practices be developed through the Aboriginal Fishing Strategy.

3.7.3 Field management and compliance

A number of surveys indicated that there has been a significant positive change in community attitudes and behaviours since the last major review of recreational fishing in 1992. The vast majority of the recreational fishing community are abiding by fish conservation controls most of the time.

However, compliance officers still report that there are small numbers of anglers who continue to fish irresponsibly and take excessive quantities of fish. Fisheries compliance officers have also stated that deliberate and repeated non-compliance by its nature was difficult to observe without detailed surveillance and investigation programs.

Community feedback indicates that the level and strength of community support for fish stock conservation is linked to the frequency of a visible fisheries management presence, as well as an effective education program, supported by freely available and clearly constructed educational resource material, such as brochures.

Community feedback also indicates that there is widespread support for an enhanced presence of Fisheries Officers to provide a more effective deterrent to illegal and irresponsible fishing behaviours, and to strongly reinforce the positive community attitudes and behaviours needed to ensure fish for the future.

VFLO program: The Volunteer Fisheries Liaison Officer (VFLO) program is strongly supported on the South Coast. In 2001/02, the VFLO program involved 24 volunteers in the Albany and Denmark areas and seven in Esperance, accounting for 2,698 contacts during the year. Community education activities conducted in the bioregion included attendance and

presentations by Fisheries Officers and VFLOs at regional shows and festivals, primary and high schools and community group meetings, and fishing competitions.

The key role of the volunteers is to promote awareness of the fishing rules and encourage fishers to treat fish stocks with a sense of personal responsibility and stewardship. A central philosophy behind the VFLO program was the establishment of a structured process of peer education as a key long-term management strategy for recreational fisheries. The VFLO program has also been instrumental in establishing tailored recreational fishing workshops and facilities for people with disabilities in the metropolitan area.

Working outside the conventional law enforcement and compliance model, the volunteer program involves recreational fishers themselves promoting awareness of management measures and conservation issues, and encouraging a change in the values and attitudes of individuals that combine to influence fishing behaviour.

The VFLOs receive a significant amount of support and assistance from departmental staff, and the size and effectiveness of the volunteer program is closely linked to the availability of adequate resources and support.

The VFLO program has achieved a significant impact in changing community attitudes and values to recreational fishing, with extremely limited resources. A new strategic plan refocusing volunteering efforts has been developed to coincide with the 10th anniversary of the VFLO program.

The impact of this strategy could be significantly enhanced by setting target contact levels for key fisheries for both fisheries officers and VFLOs, which relate to the total fishing effort being exerted in the fishery.

The recent appointment of a Community Education Officer for the South Coast Region has also provided a more structured and coordinated regional approach to the community education and VFLO programs. This may also assist in expanding the 'Fishers with Disabilities' program outside the metropolitan area and into the region.

Proposal 18 – VFLO program

That the operation of the VFLO program be enhanced and developed on the South Coast in accordance with the VFLO strategic plan.

Compliance program: Fisheries and Marine Officers are responsible for monitoring and compliance for commercial fisheries, aquaculture and fish habitat protection, as well as recreational fishing. The equivalent in hours of an estimated 1.75 full-time Fisheries and Marine Officers are dedicated to recreational fisheries compliance across the South Coast Region.

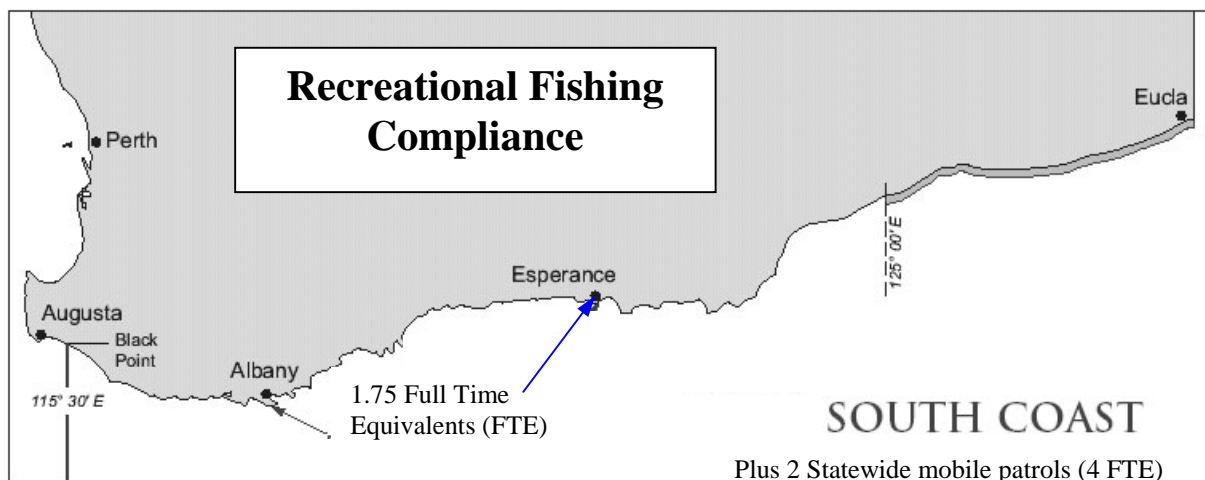
Fisheries and Marine Officers working from District Offices in Esperance and Albany deal with a number of recreational fisheries within the region, including abalone, rock lobster, boat and shore-based angling, and estuarine net fisheries. Compliance patrols in recreational fisheries principally involve checks to ensure that fishers are adhering to size and bag limits

and complying with the attendance and closed waters restrictions that apply in the recreational net fishery. These patrols can be land-based, or Fisheries and Marine Officers may utilise a 6 m patrol vessel or several smaller craft to conduct inspections at sea or in the estuaries and river systems.

During 2001/02, Fisheries Officers delivered 3,583 hours of compliance work to recreational fisheries in the South Coast bioregion, concentrating mainly on checking shore and boat-based anglers, net fishers and shellfish collectors. The areas of highest risk of non-compliance with the management arrangements were considered to be abalone, cockles, marine finfish and estuarine netting. During 2001/02, Fisheries Officers recorded 2,742 field contacts and 1,048 office contacts with recreational fishers.

To boost recreational fishing compliance resources, two mobile patrols dedicated to recreational fishing compliance have been established through funds raised from an increase in recreational licence fees.

The mobile patrols operate seasonally in areas of greatest demand, and will have the capacity to work seasonally in the South Coast Region. While the two mobile patrols provide some additional compliance presence, given the size of the South Coast Region, significant gaps exist in the geographic spread of Fisheries recreational fishing compliance capacity, and the provision of compliance resources is not keeping pace with the growth in recreational fishing activity.



It should be noted that the introduction of cost recovery for major commercial fisheries, and the development of service-level agreements to meet cost recovery obligations in commercial fisheries, has reduced the flexibility that fisheries regional managers previously had in deploying staff in response to recreational fishing activity or incidents.

The direct cost of placing a Fisheries and Marine Officer in the field in the South Coast Region when salaries and operating costs are taken into account is approximately \$90,000 a year per officer.

To resolve this issue, dedicated resources needs to be secured for recreational fishing compliance in the region. The level of resources required needs to be linked to the scale and urgency of management demands generated by the fishery, and keep pace with predicted increases in population and fishing activity.

As an initial step, a baseline field contact rate for both the compliance and VFLO program of between five and 10 per cent of all fishing trips conducted should be set for recreational fisheries. Peer education and communications theory indicates that a direct contact rate of 10 per cent should have a flow on educational benefit to at least a further 40 per cent of participants, significantly improve community confidence in management, and increase the detection rate of illegal activity.

With an angling effort of 330,000 angler days on the South Coast (Baharthah and Sumner 2003), the target contact rate for all recreational fisheries should be an estimated 33,000 contacts per year. This target should be evaluated against the community education and compliance outcomes required in this recreational fisheries management strategy.

It must be recognised that even with adjustments to current operational priorities, existing resources within the Recreational Fisheries Program and the VFLO program would not be sufficient to achieve anywhere near a 10 per cent contact to trip ratio for most recreational fisheries.

This is an issue that requires serious consideration by the Government and the community in the provision of adequate recurrent funding to ensure effective recreational fisheries management.

The following proposals are presented as representing the minimum additional resources needed to ensure fisheries compliance capacity keeps pace with the growth and spread of population over the next five to 10 years.

Proposal 19 – Additional patrol capacity

That an additional two patrols (four fisheries officers), incorporating at least one Aboriginal Fisheries Liaison Officer, be dedicated to recreational field compliance and education activities during peak fishing seasons in the South Coast Region.

These resources should be allocated to:

Albany: One additional patrol crew to service peak season fishing compliance needs between Walpole and Bremer Bay.

Esperance: One additional patrol crew to service peak season fishing compliance needs between Hopetoun and the WA/SA border.

3.7.4 Implementing management and education strategies

Adequate resources within the Department of Fisheries are needed to implement the South Coast Regional Review and ensure that fisheries management and educational outcomes envisaged in the plan are achieved.

A recreational fisheries manager should be allocated for the South Coast Region, with end of line responsibility for planning, coordination and implementation of key management,

research, education, and compliance strategies for recreational fisheries operating within the South Coast Region.

An additional role would be to provide executive support for the Regional RFACs in the region, releasing Fisheries Officers who have performed these tasks in the past for field duties. This person would be also be responsible for overseeing the implementation of the South Coast recreational fishing communication and education strategy, including production and circulation of the regional fishing guide, planning and coordinating community education activities and providing leadership and support to the VFLO program.

Proposal 20 – Regional fishing management officer

That adequate resources be allocated to coordinate the implementation of the South Coast Regional Review and assist with the development of integrated fisheries management plans for the region.

3.8 Providing adequate resources for management and enhancement

Adequate funding for recreational fishing management will be a critical factor in whether or not Western Australia can meet the challenges in managing a growing recreational fishery in the coming decade.

The approved Recreational Fisheries Program budget for 2002/2003 management was \$11.2 million, of which an estimated \$2.2 million is contributed by recreational fishers through licence fees. This funding is currently used for management, consultation, research, education and compliance activities across the State.

To fund all proposals within the recreational fishing strategy, additional funding is required.

The Government has indicated that to adequately fund the future management of recreational fishing, it will consider future funding options during the development of an Integrated Fisheries Management Framework for the State's fish resources.

APPENDIX A – CURRENT BAG AND SIZE LIMITS

PRIZE FISH			
Mixed daily bag limit – 8 per angler			
Prize fish are highly sought after for their catching or eating qualities and some are vulnerable to overfishing.			
Species	Scientific Name	Minimum Legal Size	Bag Limit
Billfish – sailfish, swordfish, and marlins combined	Families Istiophoridae and Xiphiidae	N/A	4
Cobia	<i>Rachycentron canadus</i>	N/A	4
Cods – combined (inc. breaksea and harlequin)	Family Serranidae	Fish over 1,200mm or 30kg are protected. Breaksea – 300mm	4
Coral Trout	<i>Plectropomus spp.</i>	500mm	4
Dhufish	<i>Glaucosoma hebraicum</i>	500mm	4
Mackerel, shark	<i>Grammatorcynus bicarinatus</i>	500mm	4
Mackerel, Spanish broad-barred	<i>Scomberomorus semifasciatus</i>	750mm	4 combined
Mackerel, Spanish narrow-barred	<i>Scomberomorus commerson</i>	900mm	
Mackerel, spotted	<i>Scomberomorus spp.</i>	500mm	4
Mackerel, school	<i>Scomberomorus spp.</i>	500mm	4
Mackerel, wahoo	<i>Acanthocybium solandri</i>	900mm	4
Mahi mahi (dolphinfish)	<i>Coryphaena hippurus</i>		4
Mulloway and Northern mulloway	<i>Argyrosomus hololepidotus</i> and <i>Protonibea diacanthus</i>	500mm	4
Queenfish	<i>Scomberoides commersonianus</i>		4
Salmon, Australian	<i>Arripus truttaceus</i>	300mm	4
Samson fish	<i>Seriola hippos</i>	600mm	4
Sharks (all species except protected species)		N/A	4
Trout, brown and rainbow* - combined	<i>Salmo trutta</i> and <i>Oncorhynchus mykiss</i>	300mm	4
Tuna, Southern bluefin	<i>Thunnus maccoyii</i>		4
Yellowtail kingfish	<i>Seriola lalandi</i>	600mm	4

* Licence required

REEF FISH

Mixed daily bag limit – 8 per angler
 Reef fish are usually resident species and are highly vulnerable to overfishing.

Species	Scientific Name	Minimum Legal Size	Bag Limit (Combined)
Emperor, blue-lined	<i>Lethrinus laticaudis</i>	320mm	8
Emperor, red	<i>Lutjanus sebae</i>	410mm	
Emperor, spangled	<i>Lethrinus nebulosus</i>	410mm	
Groper, baldchin and tuskfish (excluding Western blue groper)	<i>Choerodon rubescens, cyanodus and shoenleinii</i>	400mm	
Queen snapper (blue morwong)	<i>Nemadactylus valenciennesi</i>	410mm	
Snapper, pink	<i>Pagrus auratus</i>	410mm Wilson Inlet - 280mm	
Snapper, North-west (all other species)	<i>Lethrinus spp.</i>	280mm	

KEY ANGLING AND SPORT FISH

Daily bag limit – 8 per angler
 An important protection category – cobbler and tailor stocks have declined in recent years, with fish often caught before spawning.

Species	Scientific Name	Minimum Legal Size	Bag Limit
Bonito	<i>Sarda orientalis, Cybiosarda elegans</i>		8
Cobbler	<i>Cnidoglanis macrocephalus</i>	430mm	8
Tailor	<i>Pomatomus saltatrix</i>	300mm	8
Mangrove jack	<i>Lutjanus argentimaculatus</i>	300mm	8
Fingermark bream	<i>Lutjanus russelli</i>		8
Giant threadfin salmon	<i>Polydactylus macrochir</i>		8

TABLE FISH**Daily bag limit – 20 per angler**

This group contains many of WA's most popular angling species, and bag limits are crucial for maintaining future stocks.

Species	Scientific Name	Minimum Legal Size	Bag Limit
Bream, black, Northwest black and yellowfin	<i>Acanthopagrus spp.</i>	250mm	20
Flathead and flounder – combined	Family <i>Platycephalidae</i> and <i>Pseudorhombus spp.</i>	Flathead – 300mm Flounder – 250mm	20
Leatherjackets	Family Monacanthidae	250mm	20
Pike and snook - combined	<i>Sphyraena spp.</i> and <i>Dinolestes spp.</i>	300mm	20
Skipjack trevally	<i>Pseudocaranx spp.</i>	250mm	20
Snapper, red	<i>Centroberyx spp.</i>	230mm	20
Tarwhine	<i>Rhabdosargus sarba</i>	230mm	20
Threadfin,			
Whiting, King George	<i>Sillaginodes punctata</i>	280mm	20

BREAD AND BUTTER FISH**Daily bag limit – 40 per angler (No size limits apply)**

'Bread and butter' species are all fish not listed in other categories with the exception of baitfish of the sardine and anchovy families (*Clupeidae* and *Engraulidae* – mulies, whitebait, scaly mackerel, anchovies), redfin perch, goldfish, carp and tilapia.

Species	Scientific Name	Bag Limit
Australian herring	<i>Arripis georgianus</i>	40
Garfish	Family <i>Hemirhamphidae</i>	40
Mackerel, blue (common)	<i>Scomber australisicus</i>	40
Mullet, sea and yellow-eye	Family <i>Mugilidae</i>	40
Whiting, sand, school and yellowfin	<i>Sillago spp.</i>	40
All other unlisted species		40 each

SPECIAL BAG LIMITS

Species	Scientific Name	Minimum Legal Size	Bag Limit
Barramundi (only one rod or handline to be used at any one time) – special rules apply in the lower Ord River, Fitzroy River and Broome areas	<i>Lates calcarifer</i>	550mm	Possession limit 2
Groper, Western blue	<i>Achoerodus gouldi</i>	500mm	1

CRUSTACEANS AND SHELLFISH

Species are often sedentary or resident in nature, but may have pelagic or migratory phases in their life cycle with larvae or eggs widely distributed by ocean currents. Specific regulations apply to each species, based on biological characteristics. Low catch limits apply to shellfish due to a high risk of localised depletion.

Species	Scientific Name	Minimum Legal Size	Bag Limit	Boat Limit [#]
CRUSTACEANS				
Cherabin	<i>Macrobrachium spp.</i>		9 litres	N/A
Crab, blue swimmer (manna)	<i>Portunus pelagicus</i>	127mm	24	40
Crab, mud – all species	<i>Scylla spp.</i>	Green – 150mm Brown – 120mm	10	N/A
Marron*	<i>Cherax tenuimanus</i>	*	*	*
Prawns	Family Peneaidae	N/A	9 litres	N/A
Rock lobster* - all species combined	<i>Panulirus</i> and <i>Jasus spp.</i>	*	8	16
Rock lobster* - Dampier Archipelago	<i>Panulirus spp.</i>	*	4	8
MOLLUSCS AND OTHER REEF ANIMALS				
Abalone, Roe's*	<i>Haliotis roei</i>	60mm	20	N/A
Abalone, greenlip and brownlip* - combined	<i>H. laevigata</i> and <i>H. conicopora</i>	140mm	5	10
Mussels	Family <i>Myrtilidae</i>	N/A	9 litres	N/A
Sea urchins	Class <i>Echinoidea</i>	N/A	40	N/A
Squid, cuttlefish and octopus – all species combined	Class <i>Cephalopoda</i>	N/A	15	30
All other species of edible molluscs		N/A	2 litres	N/A

* Licence required – see specific brochure for details of additional fishing rules.

Only applies when two or more fishers aboard.

N/A – Not applicable

Protected species	
These species are totally protected by Fisheries legislation throughout Western Australia and may not be taken.	
Species	Scientific name
Potato cod	<i>Epinephelus takula</i>
Leafy seadragon	<i>Phycodurus eques</i>
Whale shark	<i>Rhiniodon typus</i>
Great white shark	<i>Caracharodon carcharias</i>
Humphead Maori wrasse	<i>Cheilinus undulatus</i>

APPENDIX B - VULNERABILITY TO OVER EXPLOITATION

	AUSTRALIAN HERRING <i>Arripis georgianus</i>	BLACK BREEM <i>Acanthopagrus butcheri</i>	BLUE GROPER <i>Achoerodus gouldii</i>
Biology Age maturity (years)	F = 2 m = 2-3	Wellstead F = 1.8 m = 1.8 Walpole/Nornalup F = 4.9 m = 2.8.	
Size at maturity (mm)	F = 215 m = 196	Wellstead F = 157 m = 145 Walpole/Nornalup F = 201 m = 158.	
Max weight/size		Wellstead F = 377 m = 344 Walpole/Nornalup F = 367 m = 323 (mm).	40kg
Spawning times	April – June	Mid spring - early summer	
Fecundity (number of eggs)	Mean = 98800	Multiple spawner, range 13,000 –612,000.	
Abundance	High seasonally	Moderate in limited locations.	Moderate/low
BIOLOGICAL RISK	LOW	MODERATE	INSUFFICIENT DATA
Habitat	Near shore waters and embayments and estuaries.	Estuarine	Reef-associated demersal species.
Behavioural traits	Migratory, schooling fish		
Value eating/fishing	Moderate	High	Medium/high
Other issues	Migratory fish however, possible limited migration to West Coast.	Limited gene exchange among isolated populations and heavy fishing pressure around population centres.	Little biological data known on blue groper. Possible mortality issues with fish from deep water.
VULNERABILITY DUE TO FISHING AND ENVIRONMENTAL FACTORS	LOW	MODERATE/HIGH	HIGH
LEVEL OF RISK OF OVER EXPLOITATION	Low, due to abundance and fast growing.	Moderate, due to isolated nature of fisheries and localized depletion issues.	High, due to low abundance, slow growing and highly targeted.
CURRENT APPROPRIATE CONTROLS FOR MANAGEMENT			
Size limits	Possible, however, low priority due to abundance.	Yes	Yes
Species bag limits	Yes	Yes	Yes
Mixed bag limits	Yes	Not essential due to targeting of black bream.	No
Gear restrictions (over and above standard hook and line controls)	No	No	No
Species possession limits	No	No	No
Area closures	No	Possible, if breeding areas can be defined.	No
Season closures	Possible control to protect spawning fish.	Possible, to protect breeding fish.	No
Individual quota: tags, licences	No	No	No
Total allowable recreational catch	No	No	No

	COBLER <i>Cnidogobius macrocephalus</i>	COD <i>Epinephelus species</i>	DHUFISH <i>Glaucosoma hebraicum</i>
Biology			
Age maturity (years)	Swan 2 Wislon inlet 4	Possible hermaphrodite – change sex from female to male.	F = 5 m = 8
Size at maturity (mm)	425 Wilson Inlet		F = 250-300 m = 350-400
Max weight/size	Swan 683mm	2.9kg breaksea cod	25kg
Spawning times	Swan Oct – Dec		Dec – April
Fecundity/no of eggs	Range 533 –5551 Average 2078		
Abundance	Low	Moderate	Low
BIOLOGICAL RISK	HIGH	HIGH	HIGH

Habitat	Estuaries and near shore waters where weed and reef exist.	Reefs. Often found in caves and around rock ledges.	Inshore – offshore marine.
Behavioural traits	Males brood eggs and larvae in burrows.	Ambush feeders. Often found as single fish rather than in schools.	Adult fish can form schooling aggregations.
Value eating/fishing	High	High	High
Other issues	Isolated populations Can form breeding aggregations.	Possible mortality issue with fish caught in deep water.	Possible mortality issues with fish from deep water.
VULNERABILITY DUE TO FISHING AND ENVIRONMENTAL FACTORS	HIGH	HIGH	HIGH

LEVEL OF RISK OF OVER EXPLOITATION	High, due to very low fecundity and fisheries occurring around key population centres.	High, due to low abundance, possible sex change and limited biological information.	High, due to low abundance, slow growing and highly targeted.
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CURRENT APPROPRIATE CONTROLS FOR MANAGEMENT

Size limits	Yes	Yes (if survive release)	Yes, retain until mortality study is complete.
Species bag limits	Yes	Yes	Yes
Mixed bag limits	Yes	Yes	Yes
Gear restrictions (over and above standard hook and line controls)	Yes (netting controls)	No	No
Species possession limits	No	Yes	Yes
Area closures	Yes (protect breeding fish)	No	Possible if fish can be returned alive.
Season closures	Yes (protect breeding fish)	No	Possible if fish can be returned alive.
Individual quota: tags, licences	No	No	No
Total allowable recreational catch	No	No	No

	GARFISH <i>Hyporhamphus melanochir</i>	HAPUKU <i>Polyprion oxygeneios</i>	KING GEORGE WHITING <i>Sillaginodes punctata</i>
Biology			
Age maturity (years)	3yrs (SA)	10 – 13 years	F = 4 m = 4
Size at maturity (mm)	250	880 F 920 m	F = 413 m = 400
Max weight/size	520mm	1,500mm / 100kg	720mm
Spawning times	Oct – Nov (SA)	June - September	June - September
Fecundity/no of eggs	10 000		Multiple spawner
Abundance	High	Low	Moderate
BIOLOGICAL RISK	LOW	MODERATE	MODERATE

Habitat	Sheltered embayments and over seagrass beds.	Occurs generally over rough ground from the central shelf (about 100m) to the shelf edge and down to the upper slope.	Juveniles – sheltered embayments. Adults – more offshore waters around reefs.
Behavioural traits	Can form large schools.	Deepwater species.	Juveniles can form aggregations.
Value eating/fishing	Medium/low	Moderate	High
Other issues		Deep waters species not generally targeted by recreational fishers.	Heavy fishing pressure occurs on juvenile fish in the inshore environment.
VULNERABILITY DUE TO FISHING AND ENVIRONMENTAL FACTORS	LOW	LOW/MODERATE	MODERATE

LEVEL OF RISK OF OVER EXPLOITATION	Low, due to abundant nature	Moderate, due to size high size at maturity.	Moderate, due to age at maturity and fishing pressure on both juveniles and adult stock.
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CURRENT APPROPRIATE CONTROLS FOR MANAGEMENT

Size limits	No	Yes (if survives release)	Yes
Species bag limits	Yes	Yes	Yes
Mixed bag limits	Yes	Yes	Yes
Gear restrictions (over and above standard hook and line controls)	No	No	No
Species possession limits	No	Yes	Yes
Area closures	No	No	Possible for juvenile fish
Season closures	No	No	Possible for juvenile fish
Individual quota: tags, licences	No	No	No
Total allowable recreational catch	No	No	No

	MAHI MAHI <i>Coryphaena hippurus</i>	MULLOWAY <i>Argyrosomus hololepidotus</i>	PINK SNAPPER <i>Pagrus auratus</i>
Biology			
Age maturity (years)	7 months	6 years	4-5 (shark bay)
Size at maturity (mm)	700	75cm	400 - 410
Max weight/size	39kg	43kg	1,300mm 17kg+
Spawning times	Summer	Oct – Feb (SA)	Sept - Nov
Fecundity/no of eggs			114,500 –182,500
Abundance	Moderate/low *more abundant in specific locations where aggregations occur.	Low	Moderate/low *more abundant during breeding.
BIOLOGICAL RISK	LOW	HIGH	HIGH

Habitat	Offshore open water environment.	Sheltered embayments, estuaries and near surf zone.	Juveniles – bays and inlets. Adults inshore and offshore environments.
Behavioural traits	Will often form aggregations around floating objects.	Small fish can form schools.	Form large breeding aggregations.
Value eating/fishing	High	High	High
Other issues	Fast growing. Ability to target due to aggregating Behaviour.		Targeting of breeding aggregations.
VULNERABILITY DUE TO FISHING AND ENVIRONMENTAL FACTORS	MODERATE/HIGH	HIGH	HIGH

LEVEL OF RISK OF OVER EXPLOITATION	Moderate/high, fast growing and early age at maturity, however, heavy targeting of aggregations.	High, due to low abundance, time to reach maturity, and highly targeted.	High, due to targeting of breeding aggregation and 4–5 years to reach maturity.
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CURRENT APPROPRIATE CONTROLS FOR MANAGEMENT

Size limits	Yes	Yes	Yes
Species bag limits	Yes	Yes	Yes
Mixed bag limits	Not essential due to targeting of species.	Yes	Yes
Gear restrictions (over and above standard hook and line controls)	No	No	No
Species possession limits	Yes	Yes	Yes
Area closures	No	No	Yes
Season closures	No	No	Yes
Individual quota: tags, licences	No	No	No
Total allowable recreational catch	No	No	No

	QUEEN SNAPPER <i>Nemadactylus valenciennesi</i>	RED SNAPPER <i>Centroberyx gerrardi</i>	SALMON <i>Arripis truttaceus</i>
Biology			
Age maturity (years)			3 - 4
Size at maturity (mm)			540
Max weight/size	11kg / 99cm	660	10kg
Spawning times			March-May
Fecundity/no of eggs			
Abundance		Moderate	Moderate/ seasonally
BIOLOGICAL RISK	INSUFFICIENT DATA	MODERATE	MODERATE/HIGH

Habitat	Offshore demersal	A temperate occurring on rocky reefs and muddy substrates of the continental shelf and upper slopes.	Juveniles – bays and inlets Adults - inshore and offshore.
Behavioural traits		Schooling fish.	Form large migratory schools.
Value eating/fishing	Moderate	Moderate/High	High
Other issues	Little biological data known on queen snapper.	Little biological data known on red snapper. Possible mortality issues with fish from deep water.	Westward migration influenced by strength of Leeuwin Current. Significant fishing pressure on juvenile and adult stock.
VULNERABILITY DUE TO FISHING AND ENVIRONMENTAL FACTORS	MODERATE	MODERATE	MODERATE/HIGH

LEVEL OF RISK OF OVER EXPLOITATION	Insufficient data to determine.	High, long lived may take longer to reach maturity. Significant fishing pressure on stocks.	Moderate/high, due to age and size at maturity and targeting of migratory spawning fish.
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CURRENT APPROPRIATE CONTROLS FOR MANAGEMENT

Size limits	Yes	Yes	Yes
Species bag limits	Yes	Yes	Yes
Mixed bag limits	Yes	Yes	Yes
Gear restrictions (over and above standard hook and line controls)	No	No	No
Species possession limits	No	No	No
Area closures	No	No	No
Season closures	No	No	No
Individual quota: tags, licences	No	No	No
Total allowable recreational catch	No	No	No

	SAMSON FISH <i>Seriola hippos</i>	SEA MULLET <i>Mugil cephalus</i>	SHARK DUSKY AND BRONZE WHALERS <i>Carcharinus species</i>
Biology			
Age maturity (years)			M = 13 bronze whaler F = 19 bronze whaler 14 – 18 dusky whalers
Size at maturity (mm)			2,800 dusky whaler
Max weight/size	50kg		323kg dusky whaler 295kg bronze whaler
Spawning times		March - September	Peak in summer
Fecundity/no of eggs			Give birth to live young – bronze whaler 3 –14 pups.
Abundance	Low	High	Low
BIOLOGICAL RISK	INSUFFICIENT DATA	LOW	HIGH

Habitat	Inshore and continental shelf waters associated with reefs, jetties and pylons.	Estuary systems, sheltered embayments, near shore marine environments.	Continental shelf waters.
Behavioural traits	Often form schooling aggregations around structures.	Migrate into upper reaches of estuaries.	Both species will move inshore to drop their young.
Value eating/fishing	Moderate/high	Low	High
Other issues	Little biological data known on samson fish.	Not targeted by line fishers.	
VULNERABILITY DUE TO FISHING AND ENVIRONMENTAL FACTORS	MODERATE	LOW	HIGH

LEVEL OF RISK OF OVER EXPLOITATION	Insufficient data to determine.	Low, given abundance and non-targeting by line fishers.	High, due to time to reach maturity, low fecundity and highly targeted.
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CURRENT APPROPRIATE CONTROLS FOR MANAGEMENT

Size limits	Yes	No	Yes
Species bag limits	Yes	Yes	Yes
Mixed bag limits	Yes	Yes	Yes
Gear restrictions (over and above standard hook and line controls)	No	Yes (netting)	No set lines
Species possession limits	No	No	Yes
Area closures	No	To gear (nets)	No
Season closures	No	To gear (nets)	No
Individual quota: tags, licences	No	No	No
Total allowable recreational catch	No	No	No

	SILVER BREAM <i>Rhabdosargus sarba</i>	SKIPJACK TREVALLY <i>Pseudocaranx dentex</i>	SOUTHERN SCHOOL WHITING <i>Sillago bassensis</i>
Biology			
Age maturity (years)			F = 2 m =2
Size at maturity (mm)		280(NSW)	M and F = 200
Max weight/size		700mm	328mm
Spawning times		Summer (New Zealand)	Dec - Mar
Fecundity/no of eggs		Serial spawners	Multiple spawner
Abundance	Medium	Moderate	High
BIOLOGICAL RISK	INSUFICIENT DATA	LOW/MODERATE	LOW

Habitat	Inshore reefs and surf zones and areas of rock and weed.	Juveniles – inshore embayments, estuaries Adults – inshore and offshore reefs and open water over sand and gravel.	Exposed near shore marine environments.
Behavioural traits	Often form schooling aggregations where there is a bottom substrate of sand and weed.	Schooling fish Possible migration between onshore and offshore environments.	Schooling fish.
Value eating/fishing	Moderate/low	Moderate	High
Other issues	Little biological data known on tarwhine.	High fishing pressure on both juvenile and adult fish.	High fishing pressure.
VULNERABILITY DUE TO FISHING AND ENVIRONMENTAL FACTORS	LOW/MODERATE	MODERATE	LOW

LEVEL OF RISK OF OVER EXPLOITATION	Insufficient data to determine.	Moderate/low, due to abundance.	Low, due to abundance and size and age at maturity.
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CURRENT APPROPRIATE CONTROLS FOR MANAGEMENT

Size limits	Possible	Yes	Possible, but low priority due to abundance.
Species bag limits	Yes	Yes	Yes
Mixed bag limits	Yes	Yes	Yes
Gear restrictions (over and above standard hook and line controls)	No	No	No
Species possession limits	No	No	No
Area closures	No	No	No
Season closures	No	No	No
Individual quota: tags, licences	No	No	No
Total allowable recreational catch	No	No	No

	TAILOR <i>Pomatomus saltatrix</i>	TUNA Southern Bluefin Yellowfin Bigeye	YELLOW EYE MULLET <i>Aldrichetta forsteri</i>
Biology			
Age maturity (years)	2 years +	8 years (bluefin) 3+ years (bigeye) 2 years (yellowfin)	2-3 years (Swan River)
Size at maturity (mm)	340	1,200(bluefin) 1,000(bigeye) 1,000(yellowfin)	
Max weight/size	1200mm	200kg(bluefin) 210kg(bigeye) 176kg(yellowfin)	353mm
Spawning times	Spring (Geraldton – Carnarvon) Perth south – spring and autumn	Sept – Mar (bluefin) Jan – Mar (bigeye)	March – August
Fecundity/no of eggs	370,000 – 1,240,000	14 –15 million (bluefin)	125,000 – 630,000(sa)
Abundance	Moderate	Low in region	High seasonally
BIOLOGICAL RISK	MODERATE	HIGH	LOW

Habitat	Juveniles – inshore marine embayments and estuaries Adults – beaches, near shore and offshore reefs and islands.	Open ocean, juveniles often found inside Continental Shelf.	Inshore marine embayments and estuaries.
Behavioural traits	Schooling fish.	Highly migratory schooling fish.	Schooling fish.
Value eating/fishing	Moderate/high	High	Low
Other issues	Heavy fishing pressure on juveniles in estuary systems.	Significant fishing pressure. Mortality issues may exist for fish caught on light line.	
VULNERABILITY DUE TO FISHING AND ENVIRONMENTAL FACTORS	MODERATE	HIGH	LOW

LEVEL OF RISK OF OVER EXPLOITATION	Moderate, due to size high size at maturity and fishing pressure on juvenile and adult fish.	High, particularly for bluefin which take longer to reach maturity. Significant fishing pressure on stocks.	Low, due to abundance
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CURRENT APPROPRIATE CONTROLS FOR MANAGEMENT

Size limits	Yes	Yes (if fish survive release)	No
Species bag limits	Yes	Yes	Yes
Mixed bag limits	Yes	Yes	Yes
Gear restrictions	No	No	Netting restrictions
Species possession limits	No	Yes	No
Area closures	Possible to protect juvenile or spawning fish.	No	No
Season closures	As above	No	No
Individual quota: tags, licences	No	No	No
Total allowable recreational catch	No	No	No

**YELLOW FIN
WHITING**

Sillago schomburgkii

Biology			
Age maturity (years)	2 years		
Size at maturity (mm)	F = 200 m = 180		
Max weight/size	400mm		
Spawning times	Dec- Feb		
Fecundity/no of eggs	Multiple spawner		
Abundance	Moderate/high		
BIOLOGICAL RISK	LOW		

Habitat	Unvegetated areas in sheltered to moderately sheltered nearshore waters in marine embayments.		
Behavioural traits	Schooling fish.		
Value eating/fishing	High		
Other issues			
VULNERABILITY DUE TO FISHING AND ENVIRONMENTAL FACTORS	LOW		

LEVEL OF RISK OF OVER EXPLOITATION	Low, due to abundance.		
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CURRENT APPROPRIATE CONTROLS FOR MANAGEMENT

Size limits	Possible, however, low priority due to abundance.		
Species bag limits	Yes		
Mixed bag limits	Yes		
Gear restrictions (other than standard line and hook controls)	No		
Species possession limits	No		
Area closures	No		
Season closures	No		
Individual quota: tags, licences	No		
Total allowable recreational catch	No		

APPENDIX C – SUMMARY OF CURRENT RECREATIONAL NETTING RULES

RECREATIONAL NETTING IN OCEAN WATERS OF THE SOUTH COAST

OCEAN WATERS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Other controls
Windy Harbour – Town Beach	Closed to all netting												
Oyster Harbour	Closed to set and haul netting												
Peaceful Bay	Closed to set and haul netting				Open to haul and throw netting					Closed to set and haul netting			
Mary Anne Point – Hopetoun	Closed to all netting		Open to all netting										
Esperance Bay	Closed to all netting			Open to all netting									7:00pm to 7:00am only
All other ocean waters	Open to all netting												

RECREATIONAL SET NETTING IN INLAND WATERS OF THE SOUTH COAST

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Hourly check and clean
Broke Inlet	Closed			1 ½ hrs before sunset to 1 ½ hrs after sunrise.						Closed		Yes	
Irwin Inlet	Closed			Open						Closed		Yes	
Stokes Inlet	Closed			1 ½ hrs before sunset to 1 ½ hrs after sunrise.								Yes	
Gairdner River	Closed		Open								Yes		
Wilson Inlet	1700 hrs to 1 ½ hrs after sunrise.	1 ½ hrs before sunset to 1 ½ hrs after sunrise.						1700 hrs to 1 ½ hrs after sunrise.			Yes (except Wed nights)		
Princess Royal Harbour	1700 hrs to 1 ½ hrs after sunrise.	1 ½ hrs before sunset to 1 ½ hrs after sunrise.						1700 hrs to 1 ½ hrs after sunrise.			Yes		
Beaufort Inlet	1 ½ hrs before sunset to 1 ½ hrs after sunrise.										Yes		
Wellstead Inlet	Open										Yes		
Gordon Inlet	Open										Yes		
Hamersley Inlet	Open										Yes		
Thomas River	Open										Yes		
All other inland waters	Closed to recreational netting.												

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- No. 123** Future directions for the Rock Lobster Industry Advisory Committee and the Western Rock Lobster Managed Fishery. A discussion paper prepared by Kevin Donohue on behalf of the Rock Lobster Industry Advisory Committee. (December 1998).
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- No. 126** The South Coast Estuarine Fishery. A discussion paper by Rod Pearn and Tony Cappelluti. (May 1999).
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- No. 133** Abalone Aquaculture in Western Australia, A Policy Guideline (December 1999).
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- No. 140** Aquaculture Plan for the Recherche Archipelago, Western Australia. (June 2000).
- No. 141** Fish Protection Measures in Western Australia (June 2001).
- No. 142** Fisheries Environmental Management Plan for the Gascoyne Region (June 2002).
- No. 143** Western Rock Lobster. Discussion paper for seasons 2001/2002 and 2002/2003 (July 2000).
- No. 144** The Translocation of Brown Trout (*Salmo trutta*) and Rainbow Trout (*Oncorhynchus mykiss*) into and within Western Australia. Prepared by Jaqueline Chappell, contributions from Simon Hambleton, Dr Howard Gill, Dr David Morgan and Dr Noel Morrissy. (*not published, superseded by MP 156*)
- No. 145** The Aquaculture of non-endemic species in Western Australia - Silver Perch (*Bidyanus bidyanus*). As amended October 2000. Tina Thorne. This replaces Fisheries Management Paper No. 107.
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- No. 149** Final Plan of Management for the Lancelin Island Lagoon Fish Habitat Protection Area (March 2001).
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- No. 151** Inventory of the Land Conservation Values of the Houtman Abrolhos Islands (July 2003).
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- No. 153** A Five-Year Management Strategy for Recreational Fishing on the West Coast of Western Australia. Final Report of the West Coast Recreational Fishing Working Group (August 2001).
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- No. 157** Policy for the Implementation of Ecologically Sustainable Development for Fisheries and Aquaculture within Western Australia. By W.J. Fletcher (May 2002).
- No. 158** Draft Plan of Management for the Miaboolya Beach Fish Habitat Protection Area (March 2002).
- No. 159** The Translocation of Barramundi (*Lates calcarifer*) for Aquaculture and Recreational Fishery Enhancement in Western Australia. By Tina Thorne. (March 2002).

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- No. 170** Management of the proposed Geographe Bay Blue Swimmer and Sand Crab Managed Fishery. By Jane Borg and Cathy Campbell (August 2003).
- No. 171** Draft Aquaculture Plan for Shark Bay (April 2004).
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- No. 173** Draft Plan of Management for the proposed Point Quobba Fish Habitat Protection Area (August 2003).
- No. 174** Translocation of Golden Perch, Murray Cod and Australian Bass into and within Western Australia for the Purposes of Recreational Stocking, Domestic Stocking and Commercial and Non-commercial Aquaculture (December 2003).
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- No. 177** Fisheries Environmental Management Plan for the Gascoyne Region (*in press*).
- No. 178** Draft Plan of Management for the Kalbarri Blue Holes Fish Habitat Protection Area (March 2004).
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- No 181** A Quality Future for Recreational Fishing in the Pilbara/Kimberley. Proposals for Community Discussion. A five-year strategy for managing the recreational component of the catch, prepared by the Pilbara/Kimberley Recreational Fishing Working Group. (*in press*).
- No 182** A Quality Future for Recreational Fishing in the Southern Region of WA. Proposals for Community Discussion. A five-year strategy for managing the recreational component of the catch, prepared by the Southern Recreational Fishing Working Group (*in press*).
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A QUALITY FUTURE FOR RECREATIONAL FISHING IN THE SOUTH COAST

NAME: _____

RESIDENTIAL ADDRESS: _____

_____ POST CODE: _____

Please indicate your response by
marking one box with a tick (✓)

Any additional comments you may care to make
can be made in the space provided.

Please feel free to add additional pages of comments
if insufficient space is available.

**To be read in conjunction with
Fisheries Management Paper No: 182**

***'A QUALITY FUTURE FOR RECREATIONAL
FISHING IN THE SOUTH COAST'***

See back page for order details



Questionnaire for
A quality future for Recreational Fishing
in the South Coast

by the South Coast Recreational Fishing Working Group

July 2004

Fisheries Management Paper No. 182
ISSN 0819-4327



HAVE YOUR SAY

This questionnaire provides an opportunity for you to express your opinion on how our recreational fisheries in the South Coast Region should be managed. This questionnaire must be read in conjunction with the discussion paper 'A Quality Future for Recreational Fishing in the South Coast'. You may use this pro forma response or complete a written submission when considering the proposals contained in the discussion paper. It is equally important to respond whether you agree or disagree with the various management proposals. Within the pro forma space is provided for written comments on the proposals.

Guiding principles for management

Proposal 1 - Key Principles for Management

It is proposed that recreational fisheries management in the region be based on the following principles where endorsed during the West Coast and Gascoyne planning process:

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Government should ensure adequate funding is available for comprehensive research and management necessary for the effective management of recreational fishing.					
A key aim should be to ensure that the biodiversity of fish communities and their habitats and sustainability of fish stocks are preserved.					
Fisheries management should incorporate controls and measures that cover and anticipate increasing numbers of recreational fishers and their impact on fish stocks.					
Management should be based on the best available information and where critical information is unavailable, a precautionary approach which seeks to minimise risk to fish stocks should be adopted.					
Fishing rules should acknowledge that equitable access to fishing opportunities across recreational user groups is important.					
The value of recreational fishing should be clearly recognised and given proper weight in all government and community planning processes, eg: Marine Parks, industrial developments and any other future development which may impact on the environment on the South Coast.					

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Fishing rules should be kept simple and where possible and practical, made uniform across the region.					
Recreational fishing rules should be designed to protect the sustainability of stocks and manage the total recreational catch, as well as protect fish at vulnerable stages in their life cycle eg: spawning aggregations.					
The benefits from management of the total recreational catch should flow back to the recreational sector and be reflected in maintained or improved fishing quality and sustainability.					
Clear processes should exist to resolve resource sharing issues which support the integrated management of fish stocks.					

<p>Comments:</p> <hr/> <hr/> <hr/>

Information for management - Biology, catch and fishery performance

It is critical that good quality time-series data on fishing activity, catches, and fish population structure is developed for all recreational fisheries.

This type of information is essential for understanding what is being caught by the recreational sector and assisting with the resolution of fishery management and resource sharing issues.

Proposal 2 – Major catch survey

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
<p>A major recreational catch survey be undertaken every three years to provide detailed information about the spatial and temporal distribution of recreational activity and catches, on which to base management decisions.</p> <p>As a subset on an annual basis, information should be collected on indicator species and areas to monitor recreational fishing quality.</p>					

Comments:

Proposal 3 – Structured logbook program

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
<p>The Department of Fisheries introduce a structured angler logbook program in the South Coast Region for key species in specific regional areas. The logbook program needs to be tightly co-ordinated by the Department of Fisheries with regular feedback provided to logbook participants.</p>					

Comments:

Proposal 4 – Priority species for research

Research be undertaken on the following key recreational species in the South coast (in order of priority) to provide information on species biology and stock structure. Predictive fisheries stock assessment models and, where practical, indices of recruitment, then be developed for the following important species:

Species	Research Status			
	Biology	Stock assessment	Exploitation status	Breeding stock level
Black bream	Wellstead and Walpole/Nornalup Inlets only.	Yes – Commercial catch data only.	Fully Exploited.	Considered adequate.
King George whiting	Yes	Yes – Commercial catch data only.	Fully Exploited.	Considered adequate.
Silver trevally	Yes	N/A	N/A	N/A
Queen snapper	Limited.	N/A	N/A	N/A
Red snapper	Yes	N/A	N/A	N/A
Breaksea cod	Yes	N/A	N/A	N/A
Pink snapper (south coast)	Limited – research project currently being undertaken	N/A	N/A	N/A

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Research be undertaken on the listed key recreational species in the South Coast Region.					

<p>Comments:</p> <hr/> <hr/> <hr/>

Proposal 5 – Fishing quality indicators

A range of ‘fishing quality indicators’ based on angler surveys should be developed to identify trends in fishing quality in the region and assist in the review of the effectiveness of this strategy. These indicators should cover fishing quality, diversity and the value associated with the fishing experience.

It is proposed that the following species be used as indicator species:

Indicator species	Environment where species is most often found		
	Estuarine	Inshore	Offshore demersal
Black bream King George whiting Flathead	King George whiting Australian salmon Pink snapper Flathead Blue groper Silver trevally	Pink snapper Breaksea cod Samson fish Red snapper Queen snapper Harlequin fish	

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
The listed species be used as indicator species.					

Comments:
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Protecting vulnerable fish and managing the recreational catch

Proposal 6 - Bag and size limits

For Category 1, 2 and 3 Fish the bag limit for each species was proposed following consultation between Fisheries managers, research scientists and key stakeholder groups.

The proposed bag limits should be seen as part of a total management approach to managing the total recreational catch. In the future, as recreational fishing pressure continues to grow, more emphasis may need to be placed on input controls such as restricting the time people can fish rather than by winding down the bag limit.

6(a) Category 1 Fish

Category 1 Fish – total mixed daily bag limit of 7			
Category 1 fish are considered to have the highest risk of overexploitation. Many fish in this category have low catch rates and levels of abundance, while others may be highly valued for their fishing and eating qualities. Many Category 1 fish are slow growing and mature at four years plus. For these reasons, Category 1 fish require a high degree of protection. (Note: *denotes proposed change to current management)			
Species	Species bag limit	Size limit	Other controls
Billfish – including sailfish, swordfish, marlins (combined)	1*		Max 30 kg or 1.2 m
Boarfish	4*		
Cobbler	4*	430mm	
Cods – including breaksea and harlequin (combined)	4	300mm*	
Dhufish	2*	500mm	
Groper, western blue	1	600mm*	
Hapuka and trevalla (combined)	2*		
Mahi mahi	2*		
Mulloway	2*	700mm*	
Pink snapper	4*	410mm*	
Queen snapper (blue morwong)	4*	410mm	
Red snapper (Bight redfish/Nannygai)	4*	300mm*	
Samson fish/amberjack/yellowtail kingfish (combined)	2*	600mm	
Sharks and rays (combined)	2*		
Trout, brown and rainbow (combined)	4	300 mm	
Tuna – southern bluefin, yellowfin, bigeye (combined)	2*		

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Do you agree with the mixed daily bag limit of 7 for Category 1 Fish					
Do you agree with the individual species bag limits for Category 1 Fish?					
Do you agree with the composition of species included in Category 1?					

Comments:

6(b) Category 2 Fish

Category 2 Fish – total mixed daily bag limit of 16			
Category 2 fish have a moderate risk of overexploitation. Many fish in this category have moderate catch rates and levels of abundance. Category 2 fish are mostly found in inshore and estuarine areas, are highly sought after by recreational fishers and mature at three to four years. (Note: *denotes proposed change to current management)			
Species	Species bag limit	Size limit	Other controls
Bream- black	8*	250mm	2 fish over 350mm [#]
Dory, john and mirror (combined)	8*	300/250mm	
Flathead and flounder (combined)	8*		
Goatfish	8*		
Leatherjacket	8*	250mm	
Salmon, Australian	4	300mm	
Snook and pike (combined)	8*	300mm	
Swallowtail	8*	300mm*	
Sweep	8*	300mm	
Tailor	8		
Tarwhine	8*		
Trevally, silver (skippy) etc.	8*		
Tunas - Other including bonito (combined)	8*	280mm	2 fish over 600mm [#]
Whiting, King George	12*		
Whiting, yellowfin	16*		
Wrasse	8*		

[#] Refer to **Proposal 8**

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Do you agree with the mixed bag limit of 16 for Category 2 Fish?					
Do you agree with the individual species bag limits for Category 2 Fish?					
Do you agree with the composition of the species listed in Category 2?					

Comments:

6(c) Category 3 Fish

Category 3 Fish – total mixed daily bag limit of 40

Category 3 fish have a lower risk of overexploitation. Fish in this category generally have higher catch rates and levels of abundance and are mainly found inshore. These fish have a widespread distribution and mature at two-plus years. Category 3 fish include all fish not listed in other categories except baitfish of the sardine, anchovy and hardyhead families (*Clupeidae*, *Engraulididae* and *Atherinidae*), redfin perch, gold fish, carp and tilapia.

(Note: *denotes proposed change to current management)

Species	Species bag limit	Other controls
Australian herring Garfish Mackerel, blue Mullet, sea and yellow-eye Whiting – (other) Unlisted species - (All species not specified except baitfish and feral freshwater species)	40 combined	

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Do you agree with the mixed bag limit of 40 for Category 3 Fish?					
Do you agree with the composition of the species listed in Category 3?					

Comments:

6(d) Crustaceans

Crustaceans

(Note: *denotes proposed change to current management)

Species	Bag limit	Size limits	Other controls
Crab, blue swimmer (manna)	20*	127 mm	Boat limit of 40*
Crab, mud (green and brown)	5*	150 mm*	Boat limit of 10*
Marron	10	76 mm	Recreational licence. Closed season
Prawns, school and king (combined)	9 litres		
Rock lobster	8	76mm – 77mm WRL 98.5 mm Southern RL	Boat limit of 16 - Recreational licence Closed season.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
A bag limit of 20 blue manna crabs and a boat limit of 40, should be adopted for the South Coast Region.					
A bag limit of 5 mud crabs and a boat limit of 10, should be adopted for the South Coast Region. (Note: Mud crabs occasionally found in south coast estuaries)					

Comments:

6(e) Molluscs and other reef animals

Molluscs and other reef animals				
(Note: *denotes proposed change to current management)				
Species	Bag limit	Boat Limit	Possession Limit	Other Controls
Abalone, brownlip } Abalone, greenlip	5 combined	10 combined	10 (20 at place of residence)	Licence & Season
Abalone, roe's and all other abalone species not specifically mentioned (combined)	20	-	20 (80 at place of residence)	Licence & Season
Cockles and pipis [#] } All other species of edible mollusc not specifically mentioned (combined)	2 litres			
Mussels	9 litres			
Oysters [#]	20*			
Razorfish [#]	20*			
Scallops	20*			
Sea Urchins [#]	20*			
Squid, cuttlefish and octopus (combined)	15	30		

[#] Refer to Proposal 8

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Do you agree with the bag limit for Molluscs and other reef animals?					

Comments:

Proposal 7 - Proposed changes to the current minimum recreational legal size limits

Please indicate your support for the size limit changes by placing a number between 1-5 in the spaces provided next to each species.

- 1 = Strongly Agree
- 2 = Agree
- 3 = Don't Know
- 4 = Disagree
- 5 = Strongly Disagree

Species	Old Size (mm)	New Size (mm)	Size when 50% of the stock reach maturity (mm)	Your Support (1-5)
Cods (all species)	-	300	varies between species	
Groper, western blue	500	600	not known	
Mulloway	500	700	750	
Pink Snapper (Wilson Inlet)	280	410	400	
Red snapper (Bight redfish/Nannygai)	230	300	not known	
Swallowtail	230	280	not known	
Sweep	-	250	not known	
Mud crabs (note: occasionally caught on south coast)	150 (green) 120 (brown)	150 for both	A size limit of 150mm will ensure they breed at least once before being taken	

Comments:

Proposal 8 – Increased protection for certain species

Comment be sought on the following options;

- 8(a)** Spear fishing exclusion zones or a total spear fishing prohibition be introduced for western blue groper (*Achoerodus gouldii*) on the South Coast due to their ease of capture and vulnerability to over fishing.
- 8(b)** A slot limit of two (2) black bream (*Acanthopagrus butcheri*) over 350mm be introduced to provide increased protection for mature fish.
- 8(c)** A slot limit of two (2) tailor (*Pomatomus saltatrix*) over 600mm be introduced to provide increased protection for mature fish.
- 8(d)** Identifying areas where the take of species such as cockles, oysters, razorfish, and sea urchins should be prohibited due to conservation issues around the ongoing harvesting of these species.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Do you agree spear fishing exclusion zones or a total spear fishing prohibition should be introduced for western blue groper?					
Do you agree with a slot limit of two (2) black bream over 350mm?					
Do you agree with a slot limit of two (2) tailor over 600mm?					
Do you agree that the take of cockles, oysters, razorfish, or sea urchins should be prohibited in certain areas due to conservation issues around the harvesting of these species?					

Comments: *(Please include suggested areas where a closure to the take of cockles, oysters, razorfish, or sea urchins should be considered).*

Proposal 9 - Net fishing

Comment by sought on two options;

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
9(a) Recreational haul and set netting be phased out on the South Coast over a three to five year period.					

Or

<p>9(b) Recreational netting be allowed to continue on the South Coast in a restricted capacity with a set of standardised rules applying across the region as follows;</p> <ul style="list-style-type: none"> • Haul netting be restricted to within 800m of the shore in all oceanic waters of the South Coast region not specifically closed to netting (<i>currently only applies to set netting</i>). • Throw netting be permitted in ocean waters only on the South Coast as a means to collect baitfish. • Set netting be prohibited from all ocean waters of the South 					
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	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Coast region. <ul style="list-style-type: none"> • Set netting be prohibited in all inland waters except the Wilson, Beaufort, Wellstead, Gordon, Hamersley, Broke, Irwin and Stokes Inlets, Princess Royal Harbour and the Thomas River and the Gardiner River on Wednesday and Friday nights from 1 ½ hours before sunset to 1 ½ hours after sunrise. • Set netting be prohibited in the Broke, Irwin and Stokes Inlets and the Gardiner River between 1 November and 31 April the following year. • All recreational set nets must be attended at all times and an hourly 'check and clean' carried out. 					

Comments <hr/> <hr/> <hr/>

Proposal 10 - Fishing competitions

To try to gain a better understanding of the relative impact of fishing competitions on fish stocks and ensure competitions are conducted in a sensitive manner – the following is proposed:

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
10(a) All fishing competitions with greater than 50 participants must be formally registered in advance with the Department of Fisheries.					
10(b) Competition organisers be required to keep an accurate record of the participation, catch and in each competition and forward catch returns to the Department of Fisheries for inclusion in the recreational fisheries database. The Department should develop standardised catch cards and data entry software with fishing clubs which are to be compatible with the recreational fishing database.					

<p>10(c) To ensure fishing competitions are conducted in line with recreational fishing ethics and meet requirements under the Animal Welfare Bill, a formal code of conduct for fishing competitions should be developed by the Department of Fisheries, inline with the Code of Practice for Recreational Fishers, in consultation with fishing clubs and organising bodies.</p>					
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<p>Comments:</p> <hr/> <hr/> <hr/>

Protecting recreational fishing quality

Proposal 11 - Recreational fishing priority areas

The importance of recreational fishing as a component of tourism and lifestyle should be recognised in the Integrated Management Planning Process and the Marine Reserves Planning Process.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Through this process the following areas should be considered for the priority management of recreational fishing: <ul style="list-style-type: none"> • All estuarine systems • Twilight Cove • Recherche Archipelago • Waters adjacent to Fitzgerald River National Park • Cape Vancouver to West Cape Howe 					

Comments:

Proposal 12 – Code of conduct for accessing pastoral leases, nature reserves and aboriginal land

A code of conduct should be developed for recreational fishers accessing fishing locations through pastoral leases, Aboriginal land and nature reserves. The code should be developed in consultation with land owners/lease holders and should contain the following elements:

- Leave no rubbish behind.
- Any fish frames or offal should be removed.
- All gates that are shut must be left shut.
- No lighting of fires.
- Under no circumstance should any fences be cut or interfered with.
- Any machinery or equipment should not be interfered with.
- Firearms or dogs should not be taken on to stations without the approval of the station owner.
- Aboriginal land should only be entered with the approval of the Aboriginal landowners.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Do you agree that the proposed code of conduct?					

Comments:

Proposal 13 – Access to fishing locations through private land

Regional RFACs should enter into negotiations with owners/leaseholders to define access routes to fishing locations and that these routes and the code of conduct be promoted by the Department of Fisheries in advisory material.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Regional RFACs to negotiate with the owners of private land to define access routes to fishing locations.					

Comments:

Proposal 14 - Position statement on restocking as a stock enhancement strategy

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
<p>Management of wild fish stocks should be the primary focus for recreational fisheries management, and restocking should only be considered as a strategy to assist with the recovery of a stock where it can be identified that the stock has been significantly depleted and its recovery is endangered or will be prolonged.</p> <p>To minimise any ecological impacts, all stock enhancement projects should be assessed against disease risk, biodiversity and genetic diversity criteria. Any stock enhancement project should also be adequately monitored and evaluated.</p>					

Comments:

Resource sharing

To achieve better management of the fin fish resource a more integrated approach to management should be adopted and that a separate process should be established to resolve resource sharing issues.

Proposal 15 - Resource Sharing

As a priority the following species should be considered for total catch management under an integrated management framework:

- Australian salmon
- Herring
- Black bream
- King George whiting
- Southern demersal species, including shark

For each species a forum should be held with key stakeholders including recreational, commercial, indigenous and conservation to identify key issues which need to be taken into consideration in the development of an integrated management plan for the South Coast Region.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Do you agree with the species which should be considered as a priority for integrated management?					

Comments:

Protecting fish habitats

Proposal 16 – Low impact wilderness fishing experiences

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
<p>That consideration be given to managing Twilight Cove as a remote wilderness fishing area on a trial basis.</p> <p>The following guiding principles should be used for the management of the wilderness area:</p> <ul style="list-style-type: none"> • Low take • Low environmental impact • Code of practice should be developed for recreational fishing in the area <p>The trial should determine the level of community support and potential for retaining wilderness fishing values in the area.</p>					

Comments:

Improving community stewardship - education and compliance

Proposal 17 – South Coast Regional community education plan

A recreational fisheries community education plan should be developed for the South Coast Region which focuses on the issues and species most important in the region. Such a plan should seek to keep the recreational fishing community informed of management decisions, give a clear lead on the values and attitudes which will assist in sustaining fish stocks and develop a broad community recognition of the value of recreational fishing.

This plan should, at a minimum, contain the following elements:

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
17(a) A comprehensive regional guide to recreational fishing in the South Coast Region be produced to inform and educate fishers about recreational fishing management arrangements, fishing ethics, research, conservation issues and promoting stewardship for fish stocks and the environment.					
17(b) Adequate quantities of practical educational tools such as measuring gauges, fish rulers, adhesive bag limit guides and boat ramp and fishing venue signs should be produced to support the regional fishing guide.					
17(c) An annual media campaign be implemented to promote recreational fishing and fishing ethics in the Region.					
17(d) Encourage the establishment and development of volunteer groups in structured fisheries education activities across the region.					
17(e) An education campaign promoting the recognition of customary fishing practices be developed through the Aboriginal Fishing Strategy.					

Comments:

Proposal 18 – Additional patrol capacity

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
<p>That an additional two patrols (four fisheries officers), incorporating at least one Aboriginal Fisheries Liaison Officer, be dedicated to recreational field compliance and educational activities during peak fishing seasons in the South Coast Region.</p> <p>These resources should be allocated to:</p> <ul style="list-style-type: none"> • <i>Albany</i>; One additional patrol crew to service peak season fishing compliance needs between Walpole and Bremer Bay. • <i>Esperance</i>; One additional patrol crew to service peak season fishing compliance needs between Hopetoun and the WA/SA border. 					

Comments:

Proposal 19 - VFLO Program

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
<p>That the VFLO program be enhanced and developed in the South Coast Region.</p>					

Comments:

Proposal 20 – Recreational Fishing Management Officer

To ensure that fisheries management and educational outcomes envisioned in the plan are achieved.

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
That adequate resource be allocated to coordinate the implementation of the South Coast Regional Review and assist with the development of integrated fisheries management plans for the region.					

Comments:

Where and when to send your submission

The closing date for submission is **14 October 2004**. Please send your submission along with your full name, address and association details (if applicable) to:

Executive Officer
 South Coast Review
 C/- Recreational Fisheries Program
 Department of Fisheries
 Locked Bag 39
 Cloisters Square Post Office
 PERTH WA 6850

Copies of Fisheries Management Paper No. 182

**‘A QUALITY FUTURE FOR
RECREATIONAL FISHING IN
THE SOUTH COAST’**

Are available from the following Department of Fisheries
Offices:

Southern Regional Office
Suite 7 Frederick House
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