A SUSTAINABLE FUTURE FOR FISHING ON CHRISTMAS ISLAND

A draft five-year strategy for managing commercial, recreational and charter fishing

Proposals for community discussion

FISHERIES MANAGEMENT PAPER NO. 223

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A Sustainable Future for Fishing on Christmas Island

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INTRODUCTION

The Territory of Christmas Island is a small, non-self-governing Territory of Australia, located in the Indian Ocean 2,360 km (1,466 miles) northwest of Perth, Western Australia and 500 km (310 miles) south of Jakarta, Indonesia. It maintains about 2,000 residents who live in a number of towns on the northern tip of the island. The island has a unique topography and is of immense interest to scientists and naturalists.

Commercial, recreational and charter fishing activity on Christmas Island is largely unmanaged at present and there is a need to consider a more appropriate framework for the management of the Island's marine resources.

This draft strategy was developed by the Department of Fisheries, Western Australia, hereafter known as the "Department of Fisheries" which has responsibility for managing fish resources (within Territorial waters out to 12 nautical miles) on behalf of the Commonwealth Department of Transport and Regional Services (DoTARS), through the applied *Fish Resources Management Act (FRMA)* (WA)(CI) (the "Applied Act"). The Applied Act provides a legislative framework that allows for management arrangements to be developed specifically for Christmas Island.

The management of fisheries in Western Australia uses an adaptive approach which balances the need for the effective management of fish stocks with factors such as the levels of fishing pressure, stock abundance and the risk of over-fishing of individual species.

The purpose of this discussion paper is to seek community feedback on the appropriateness of a range of management strategies, which are designed to help ensure the future sustainability of fish stocks around Christmas Island.

As part of the public consultation process, meetings will be held with different interest groups to discuss the proposals contained in this paper. Feedback from these meetings along with submissions received will be considered prior to the final recommendations being made on future fisheries management arrangements for Christmas Island.

Support and involvement of the local community are vital in order to achieve effective sustainable management of the fish resources at Christmas Island. Anyone with an interest in the future management of fishing is encouraged to carefully consider these proposals and provide input to help ensure the quality and diversity of the fisheries are protected for future generations of Christmas Islanders.

MAKING A SUBMISSION

The release of this discussion paper for public comment provides an opportunity for you to express an opinion on how commercial and recreational fishing around Christmas Island should be managed.

In responding to the discussion paper it is important that you indicate whether you agree or disagree with the various proposals, and explain why you agree / why you disagree.

A response form has been prepared to assist you in making a submission. Alternatively you may choose to write your own submission.

Points to consider for submissions:

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

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

Where to send your submission

The closing date for submissions is ***31 July 2007***. Please send your submission along with your full name and address to:

Indian Ocean Territories Management Officer
Department of Fisheries
Locked Bag 39
Cloisters Square Post Office
PERTH WA 6850

Alternatively you can lodge your submission at the Shire Office on Christmas Island, who will then forward these submissions to the Department of Fisheries Western Australia.

SECTION 1 FISHING AROUND CHRISTMAS ISLAND

1.1 History of Commercial Fisheries Management

The Australian Fisheries Management Authority (AFMA) (under the Commonwealth Government's *Fisheries Management Act 1991*) previously managed commercial fisheries in the waters surrounding Christmas Island; however, recreational fishing and aquaculture were beyond the scope of the *Fisheries Management Act 1991.*

In November 2002, the territorial seas (out to 12 nautical miles) of Christmas Island were declared as 'excepted waters' from the *Fisheries Management Act 1991*. Management responsibilities were transferred from the AFMA to the Department of Transport and Regional Services (DoTARS), and the Western Australian Government's Department of Fisheries has now taken on management responsibilities on behalf of DoTARS.

Under a Service Delivery Agreement with DoTARS, the WA Department Fisheries now manages commercial, recreational and aquaculture activities at Christmas Island, in addition to providing fish health diagnostic services, pathology services and licensing services. The Federal Minister for Local Government, Territories and Roads currently holds responsibility for these excepted waters under the *Fish Resources Management Act (WA) (CI/CKI)* (the 'Applied Act').

Fishing for tuna and tuna-like species in waters outside 12nm of Christmas Island continues to be managed by AFMA under the *Western Tuna and Billfish Fishery Management Plan 2005*, and Parks Australia continues to manage the waters extended 50m seaward of the low water mark where the Christmas Island National Park meets the coast.

In March 2004, the original commercial fishery operators on Christmas Island who were licensed under Commonwealth law (and held permits issued by AFMA) were "transitioned" to the applied Western Australian (WA) law, and were issued with Fishing Boat Licences (FBLs) and Commercial Fishing Licences (CFLs) for Christmas Island. The original conditions on the AFMA licences, including an annual three-tonne 'quota' on key species, were carried over to the WA licences.

While it is a requirement under WA law for all licensed commercial fishers to submit monthly catch returns regardless of their fishing activities, this requirement has not been rigorously enforced to date, for Christmas Island licence holders.

Anecdotal evidence suggests that, since initial issue by AFMA and subsequent re-issue by the WA Department of Fisheries, these licences have historically operated on a part-time and somewhat sporadic basis. Peak activity coincided at the same time as AFMA provided management and the Christmas Island Resort Casino was being operated.

The viability of commercial fishing on Christmas Island was greatly reduced following the closure of the resort in the late 1990s. With the closure of the casino and the absence of a fisheries enforcement presence, the level of illegal recreational catch being sold on the Island made the legitimate commercial fishing operations unprofitable. In 2003, the last of the active commercial fishing licensees ceased operation.

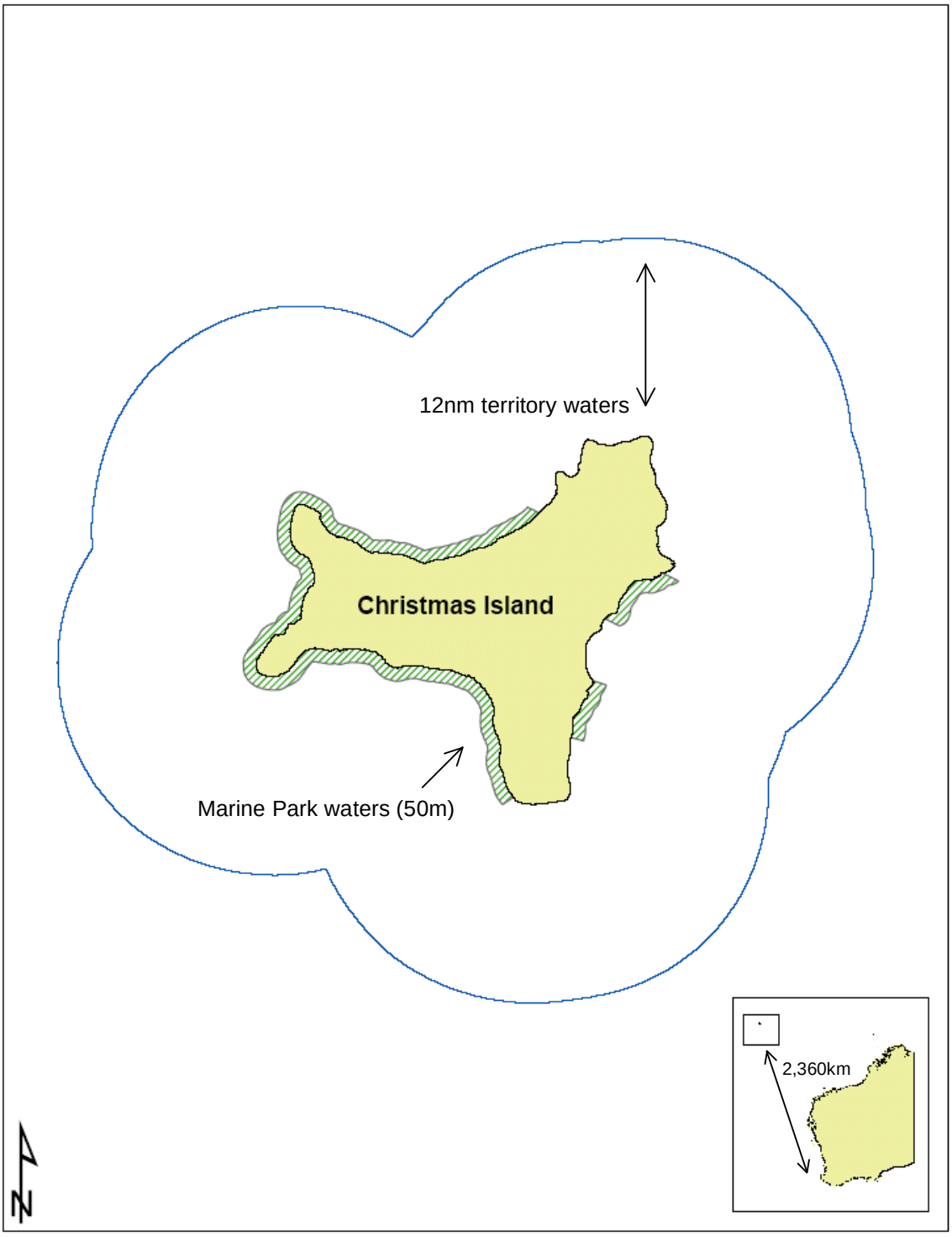


Figure 1: Map of Christmas Island.

1.2 History of recreational and charter fishing

Recreational fishing around Christmas Island is a highly valued activity by the Christmas Island community. Historically, fishing around Christmas Island was viewed as "subsistence fishing" to supplement the food supply of local residents and their extended families.

Even as recently as the 1980s, recreational fishing was largely undertaken from small dinghies and dug-out canoes, using handlines and the occasional rod and reel. This level of fishing was considered to have a relatively low impact on the Island's fish stocks.

Based on interviews with long-term island residents, there has been a significant increase in the recreational fishing pressure around the island. Over the last two decades, a significant number of larger boats, often using more sophisticated fishing technology such as Global Positioning Systems (GPS), coloured sonar, braided line and electric winches, have been imported onto the Island.

This fishing effort has been bolstered by a number of mining and construction projects taking place on the Island in recent years, employing a transient workforce. It has also been suggested that the focus of recreational fishing has moved away from supplementing food supplies to sports fishing.

Prior to 2002, Christmas Island had a single boat launch ramp located at Flying Fish Cove. The strong northerly wind and swell exposure at this site during the monsoon season acted as a natural control on the amount of fishing taking place, making it difficult to launch boats for a large part of the year. Since then, a new ramp has been built on the eastern side of the Island at Ethel Beach, resulting in boat access to the water almost all year round.

Today Christmas Island recreational boat fishers troll for pelagic species including wahoo, dog tooth tuna, yellowfin tuna and mahi mahi (dolphin fish) in the offshore waters of the Island. Recreational boat fishers target the near-shore waters around the Island by trolling using surface lures ('poppers') for giant trevally.

It should be noted that sharks take a large number of fish that become hooked when fishers are trolling in both inshore and offshore waters, and this may be an important consideration in assessing the total mortality of pelagic species.

The use of short fixed boat rods fitted with electric reels and braided line is becoming an increasingly popular recreational fishing method. This method allows the capture of demersal reef fish from depths greater than 500 metres, and has been particularly effective when combined with GPS and colour sonar systems.

The lack of fringing reef found at Christmas Island means that demersal fish stocks are limited and therefore highly susceptible to over-exploitation.

Shore-based fishing is also popular with fishers mostly targeting rainbow runner and giant trevally off the rocks. The island community also holds fishing competitions on a periodic basis, targeting demersal and pelagic species. Several fishing tours (charter) have operated from Christmas Island in the past; however, information currently

available suggests that only one extractive (i.e. fishing) aquatic tour operator is currently active on the island over the peak fishing season.

Bait is usually mackerel scad and/or flying fish. Flying fish are mostly taken during night fishing in small boats from Flying Fish Cove, using a light and a dip net.

Free diving for rock lobster is also a popular fishing activity on the limited fringing reefs around the Island.

SECTION 2 PLANNING FOR THE FUTURE

2.1 Why have a Fishing Management Strategy?

If the availability of fish resources at Christmas Island is to be maintained or improved over time, it is important to ensure breeding stocks are protected so that future generations of Christmas Islanders can enjoy catching and eating fish. A variety of tools can be used to help protect stocks including:

- size limits (both minimum and/or maximum);
- daily bag limits;
- possession limits;
- gear controls (e.g. size or type of nets, lines, pots etc);
- closures (e.g. time periods to protect spawning aggregations and/or areas such as nursery grounds);
- licensing; and
- commercial catch quotas.

Generally a number of these tools are used in combination to ensure an adequate proportion of breeding stock is protected. The most appropriate combination of tools for managing commercial and recreational fishing will vary, depending upon the nature of the species and the level and type of fishing activity.

The fishing management arrangements for Christmas Island need to be developed in consultation with the local community. Community support for sustainable management arrangements is essential in order to gain maximum voluntary compliance.

One of the objectives of the management strategy is to ensure that there are fish available for sale on-island. Another objective is the need to manage the total take of fish both recreationally and commercially to ensure sustainability (see Section 4).

A comprehensive framework will be needed to deal with issues such as ensuring commercial fishing licences remain on-island; providing equitable opportunities for members of the Island community wanting to fish commercially; limiting the total catch to within sustainable levels for all sectors; and encouraging a secure domestic market for commercial fish products on Christmas Island.

2.2 Cocos Islands Fishing Strategy Example

The Department of Fisheries is also responsible for the sustainable management of the marine resources of the nearby Cocos (Keeling) Islands (out to 12nm) through a Service Delivery Arrangement with the Department of Transport and Regional Services (DoTARS).

A similar review aimed at developing a sustainable fisheries management framework for Cocos (Keeling) Islands in began in 2004; however, the issues confronting fisheries management on Cocos Islands vary greatly from that of Christmas Island.
Historically there has been little commercial fishing activity undertaken at the Cocos Islands. Fish has been supplied to the community through a large, highly mobile and efficient recreational or "subsistence fishing" sector. There has also been evidence of significant quantities of fish being exported to friends and relatives on mainland Western Australia on a regular basis.

In the absence of a sustainable fisheries management framework, anecdotal evidence suggests that unmanaged fishing practices have resulted in some fish stocks becoming depleted, with some species, such as coral trout, being on the verge of localised extinction.

In order to manage Cocos Island fish stocks in a sustainable manner, a recreational fishing management framework has now been developed for the Cocos in consultation with the local community and was introduced in late 2006. The key component of this strategy is the introduction of a three-tiered bag limit structure that provides a higher level of protection for those species of greater risk to over-exploitation. An extensive community education program will also support the strategy.

The introduction of a sustainable management framework for recreational fishing on Cocos Islands has also paved the way for the possible development of a community-based commercial fishing licensing framework to supply fish to commercial outlets and the broader community (Appendix 1 - Summary of the Cocos Island Recreational Fishing Strategy).

SECTION 3 ISSUES FOR CONSIDERATION

3.1 Current Status of Stocks

Fishing around Christmas Island is largely weather-dependent. Some large pelagic species, such as yellowfin tuna, are part of a widely-distributed Indian Ocean resource while other pelagic species such as dogtooth tuna, sailfish and wahoo may be more localised, and therefore capable of localised depletion.

Demersal fish resources are also likely to be localised and vulnerable to over-fishing. For example, the deepwater snapper and other similar deepwater species are slow-growing and very long-lived, and can only sustain very low levels of exploitation. For this reason, the establishment of a substantial commercial fishery for demersal species is unlikely to be sustainable.

The export of fish off-island (mainly to relations/friends on the mainland of Western Australia) is an additional pressure on Christmas Island's fish resources. A 5kg restriction has been introduced by the Australian Quarantine and Inspection Service (AQIS) to limit the amount of fish that can be taken on board aircraft (and hence off-island); however, the level of enforcement of this restriction is not known. This is a key issue, as the take of large quantities of fish is likely to be unsustainable.

While there is comprehensive knowledge of the fish species found within the waters surrounding Christmas Island, there is minimal information available on the status of fish stocks or catch data for these species (Appendix 2: List of fish species found on Christmas Island).

Anecdotal evidence suggests that some demersal finfish stocks around the island may already be depleted. The isolation and limited habitat structure of Christmas Island may mean that the abundance of certain species will be linked by larval recruitment to other environments, often hundreds to thousands of kilometres away.

3.2 Impact of Fishing on Stocks

To protect future fish stocks and ensure sustainable fishing for the future, it is important to understand what happens to a stock of fish over time owing to fishing pressure.

When fishing pressure is exerted on a "virgin" or unfished stock, initially the catches include a number of older or larger fish that are highly sought-after by fishers. At this time catch rates are high for a relatively small number of fishers.

As more of the larger fish are removed from the population, faster-growing, younger fish replace the older fish. In this situation, the overall catch can actually increase, with more medium-sized fish being caught by the increasing number of fishers, but fewer bigger fish being caught.

Further fishing pressure can cause what is called "growth overfishing". This means that fish are caught before they are fully grown, resulting in a decrease in the average size of fish in the fish population, and a reduction in the total weight of fish caught.

If exploitation of fish stocks increases further, the fish population may suffer from "recruitment overfishing". This occurs when fishing pressure is too heavy to allow a fish population to replace itself, because of a reduction in the number of fish left in the wild that are of the size/age where they can reproduce. This level of fishing effort is not sustainable.

Both growth and recruitment overfishing are undesirable, with growth overfishing reducing the productivity of the fish population, and recruitment overfishing being undesirable as it is important to ensure the protection of a sufficient proportion of the breeding stock can be maintained and improved over time.

3.3 Commercial Fisheries Issues

Originally most of the AFMA fishing permit holders were residents of Christmas Island. At present, several licence holders are no longer resident on-island and some fishing licences have changed hands.

This has resulted in non-residents of Christmas Island now holding a number of these fishing licences, with the potential for any of the remaining on-island licences to be transferred to non-residents (as the applied legislation provides for transferability) or for further licence holders to move off-island.

Little information has been received from the commercial operators, with only one catch return being lodged during the time that the Department of Fisheries has been managing these resources. It is understood that the five commercial fishing boat licences of Christmas Island are not currently in use; however, one of these operators continues to operate a game fishing charter business during the peak season.

As a result of there being no active commercial fishing operations, there is no fishery data to assist in the consideration of how a commercial fishery would operate on the Island. Any locally-caught fish that are currently being sold on Christmas Island are therefore being sold illegally.

Fisheries management arrangements must be developed to ensure that the total take of fish (for commercial and recreational purposes) is sustainable. The community needs to support the arrangements and the distinction between commercial and recreational fishing.

However, in recognition of the circumstances on Christmas Island, the Department of Fisheries is considering a "community-based licensing system" as one possible future management option to provide a framework for the legal supply of commercially-caught fish. If supported, the implementation of a community-based licensing system would not be compatible with the current commercial fishing licensing arrangements.

3.4 Demand for Commercially Caught Fish on Christmas Island

The limited demand for commercially-caught fish by the island community is a key factor in determining the level of commercial fishing activity that would be required to supply fish to the Island.

Even if a regular market for commercially-caught fish was developed to supply the Island's restaurants, supermarkets and individuals, this demand is unlikely to exceed about 200kg per week at present. However, if a large-scale tourist facility such as the Christmas Island Resort Casino were to re-open in the future, the demand for locally-caught seafood would be likely to increase.

Although the demand for fresh seafood on Christmas Island is limited, there is a need for a licensing framework that can legitimately provide for a limited commercial catch, to ensure sustainable harvest levels and avoid over-supply of the Island market.

3.5 Seafood Quality Standards

All persons in the seafood supply industry are currently responsible for ensuring correct food safety standards for their catch. The implementation of the new *Food Standards Australia and New Zealand (FSANZ)* food standard code identifies temperature control and hygiene as key factors to ensure good health and quality standards for seafood product.

In order to ensure satisfactory health and quality standards, a protocol must be developed to manage temperature controls and hygiene standards during:

- on-boat storage of fresh catch;
- transport from the boat to a storage and processing facility;
- storage in appropriate facility including snap freezer facilities; and
- in the sales area.

3.6 Recreational Fisheries Issues

At present, there are no bag limits or restrictions in the Department of Fisheries regulations that relate to fishing on Christmas Island. In the absence of specific regulations, there is a need for education and compliance to support future fisheries management arrangements and ensure the cooperation of the local community.

A wide range of issues has been taken into consideration in planning for the future management of fishing at Christmas Island. A number of these issues have been identified through previous reports (*Integrated Marine Management Plan – Christmas Island*) and more recent meetings by Department of Fisheries staff and residents on Christmas Island.

SECTION 4 MANAGEMENT STRATEGY

It is important that the development of a fisheries management strategy for Christmas Island satisfies the objectives of both the Island's community and the Department of Fisheries.

Through initial discussion between fisheries managers and various members of the Island community, a number of management principles and objectives for Christmas Island have been proposed.

The overall objective of the Christmas Island fisheries management strategy is to ensure the sustainable harvest of fish stocks by all sectors of the community while maximising the environmental, economic and social benefits that can be derived from these resources. Within this overarching objective, the following specific fisheries management principles and objectives have been identified:

Proposal 1a: Fisheries Management Principles

- Fish resources of Christmas Island should be managed primarily as a food source for the Christmas Island community.
- The Island community should be engaged in any associated decision-making processes with respect to managing the fish resources around the island.
- Members of the community should have the opportunity to fish for a commercial purpose.
- All fish sold for a commercial purpose on Christmas Island should meet minimum seafood quality requirements.
- Clear guidelines for recreational fishers should be developed, taking into account the values and expectations of the Christmas Island community and ensuring sustainability.

Proposal 1b: Fisheries Management Objectives

- To gain an understanding of the status of fish stocks around Christmas Island.
- To manage the total take of fish resources around Christmas Island at a sustainable level, and ensure adequate breeding stock levels of residential and semi-residential species are maintained.

SECTION 5 INFORMATION REQUIREMENTS

5.1 Catch and Fishery Performance

Good quality time-series data on fishing activity, catches, fish biology and population structure is important for the sustainable management of fisheries. This information is essential for understanding what is being caught and detecting changes in abundance over time.

Fisheries research is expensive and considerable resources are required to determine the status of stocks and the recruitment sources. It is also important to prioritise research on the species deemed to be at highest risk.

The following steps are required for the successful implementation of effective fisheries management arrangements at Christmas Island:

Proposal 2: Review of existing literature
A detailed desk study of existing fisheries literature on Christmas Island fish stocks to incorporate all available information into a single source including:

- identification of fish species present;
- levels of abundance; and
- identification of target species.

Proposal 3: Recreational catch survey
Periodic catch surveys provide detailed information about the spatial and temporal distribution of fishing activity and catch, on which to base management decisions.

Information should be collected on indicator species and habitat zones to monitor recreational fishing activity and catch. These indicators should cover at a minimum the number and length of fish taken. This information could be collected on a voluntary basis through a logbook program or could be run as part of a school-based project. The indicator species should encompass those targeted by both shore and boat fishing.

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

	Environment where species is most often found	
	Boat-based	**Shore-based**
Indicator species	Deep-sea demersal species Wahoo Dogtooth tuna Yellowfin tuna Coronation trout	Rainbow runner Giant trevally

5.2 Species Biology

Understanding the biology and lifecycle of the different species is also important. In particular, size/age at maturity, longevity, and source of recruitment to exploited stocks are key factors. For example, it is important to know the source of recruitment into the targeted fish stocks around Christmas Island - do they originate from fish distributed outside the Island's waters and rely on ocean currents, or is the source of recruitment solely from fish from within the Island's waters?

Very little baseline data is available on the range of species found around the Island and there is no up-to-date information on the composition and size of the catch or quantitative stock assessments of key species. For example, it is important to determine whether juveniles and adults occur together throughout all waters of the island, or whether juveniles are more abundant in the limited fringing reef platforms. It is also important to understand whether the species aggregate at certain times of the year (e.g. to spawn), or certain times of the day (e.g. to feed).

Proposal 4: Priority species for research
It is vital to prioritise species for biological studies to ensure efficient use of limited funding for research. Additional funding will be sought for those target species not listed in the original priority list at a later date.

In August 2006, a Risk Assessment Workshop for the Indian Ocean Territories was held at the WA Fisheries and Marine Research Laboratories in Perth. This workshop identified a list of priority species for research and management focus. The priority species for Christmas Island are listed in the table below (in order of priority).

	Gap analysis of research			
Species	**Biology**	**Stock assessment**	**Exploitation status**	**Breeding stock level**
Dogtooth tuna	Minimal	N/A	N/A	N/A
Wahoo	Minimal	N/A	N/A	N/A
Coronation trout	N/A	N/A	N/A	N/A
Deep-slope demersal species	N/A	N/A	N/A	N/A
Yellowfin tuna	Minimal	N/A	N/A	N/A

N/A (Not Available)

SECTION 6 MANAGING THE CATCH

6.1 Proposed Models for Community-Based Commercial Fishing Authorisations

This is a draft plan to facilitate discussion on how authorisation to fish commercially could be shared and managed by the community. This draft has been developed following discussions with the Christmas Island community stakeholder groups, and now requires further public comment to progress.

Three proposals on possible community-based commercial fishing models have been developed and are outlined below.

Proposal 5a is similar to the current commercial fishing licensing arrangements; however, certain conditions and requirements have been proposed to ensure that the licences remain operational and all members of the community have equal opportunity to be involved in the fishery.

Proposals 5b and 5c involve the concept of a commercial fishing licence being held by a non-profit community-focussed entity based on Christmas Island. This concept has gained initial community support through previous review processes and more recently though meetings between Department of Fisheries staff and residents of Christmas Island.

Under these models, "ownership" of the fishing licence would remain with the on-island entity, meaning that the licence would always remain on-island. Provided the entity is properly structured, the commercial "leasing" or "hiring" of the licence would operate rationally and fairly. It would also give the entity (and the community) enormous influence in the commercial use and sustainability of fish stocks.

The way the on-island entity is structured and how a licensing system operates would require further consultation with the Christmas Island community in order to integrate the social objectives of the Christmas Island community with the management objectives and legal framework of the WA Department of Fisheries.

6.1.1 Proposed Models for Commercial Fishing on Christmas Island

The three models for managing the Christmas Island commercial fisheries are outlined below:

Proposal 5a: Continuation of existing commercial fishing licensing framework
The following is a summary of how the existing commercial fishing licensing arrangements could be amended to ensure that licences remain operational and provide a regular supply of fish to the local community as well as providing members of the community with the opportunity to be involved in the fishery.

Under this model the number of commercial fishing licences would continue to be limited to the five commercial licences that currently apply to Christmas Island.

Conditions could be attached to existing licences requiring minimum levels of effort (days fished in a year) or minimum levels of fish landed. Existing licence holders who currently hold inactive licences would then need to demonstrate why that licence should be renewed (e.g. how they indent to meet the minimum licence conditions).

If they cannot show just cause why the licence should be renewed, the licence could be withdrawn and added to a "pool" of licences to be reissued. Expressions of interest could be called for members of the community interested in operating one of these commercial fishing licences.

Licences could be limited to a finite period (e.g. one to three years) and applicants meeting certain access criteria, such as being an island resident, could be issued a licence for this period. Another call for expressions of interest could be undertaken at the end of the licensing period, thus ensuring that all members of the community have to opportunity to apply on a periodical basis.

A review group consisting of island residents and the Department of Fisheries would assess the applications for the available licences.

This model would be the simplest to administer; however, it should be noted that the opportunity for different members of the community to fish under the licensing system would be less frequent.

Proposal 5b: Community-based commercial fishing licence (restricted operators)
The following is a summary model of how a community-based commercial fishing authorisation framework for Christmas Island might operate.

The model includes:

- the *Department of Fisheries* as the licensing body;
- an on-island community-based *Licence Administration*;
- a *Fisheries Co-operative;* and
- *Nominated Individual Fishers* from the community.

Licence Administration - An authorisation to fish commercially could be issued by the Department of Fisheries to an independent, community-based Licence Administration. As the holder of the authorisation the Licence Administration would effectively have responsibility for controlling the commercial take and supply of fish products on Christmas Island and for providing a service to the community.

The Licence Administration could be hosted by an established entity such as the Christmas Island Shire, to ensure any administrative costs could be absorbed and to make use of existing infrastructure. The License Administration could be made up of representatives from each of the community groups and could be required to share the opportunity to commercially fish in a fair and equitable manner.

The Licence Administration could also act as a 'Management Advisory Committee' to the Department of Fisheries to negotiate a 'catch quota' for the island, based on sustainable harvest levels and the community demand for fish. The License Administration could also be responsible for overseeing the operation of a community

Fishery Co-operative and allocating the opportunity to fish under the Fishing Boat Licence (FBL) to individual members of the community.

Fishery Co-operative - The Fishery Co-operative (the Co-operative) would be a small-scale operation involved in the day-to-day operation of commercial fishing. The Co-operative would be responsible for managing the opportunity to fish under the Commercial Fishing authorisation by individual members of the community under the supervision of the Licence Administrator.

The Co-operative could also act as a 'fish market' and be responsible for the processing, storing and retailing of fish to the community and commercial outlets such as restaurants. It is likely that the Co-operative would need to employ part time staff and be housed in suitable premises. Given the small-scale of this operation, it would be most practical if it could make use existing infrastructure, to reduce capital costs.

In order to ensure the highest fish quality and minimise deterioration, fish storage and processing standards need to be maintained. The fish need to be stored between -1ºC and +4ºC from shortly after they are caught and/or filleted.

To ensure fish are stored within this temperature range, any commercial boats would have to have iceboxes on-board. The boats used by commercial fishers on Christmas Island are generally small dinghies (4.5 to 6 metres in length), limiting the size of icebox that can be used and the number of fish that can be stored at any one time.

Ideally, ice could be made available through the Co-operative facility, located near to a launch site, and any commercial fishers would be required to utilise this facility. Iceboxes could be provided by the Co-operative to the nominated fisher, ensuring a consistent icebox type and standard.

The Co-operative would be responsible for implementing a Code of Practice for fishers to ensure a basic level of seafood quality management. The Co-operative and the Department of Fisheries would work together to run workshops outlining the new protocols and assisting nominated fishers to understand and appreciate the need for these new rules and practices.

The Department of Fisheries would be responsible for the creation of educational material, to be developed in appropriate languages.

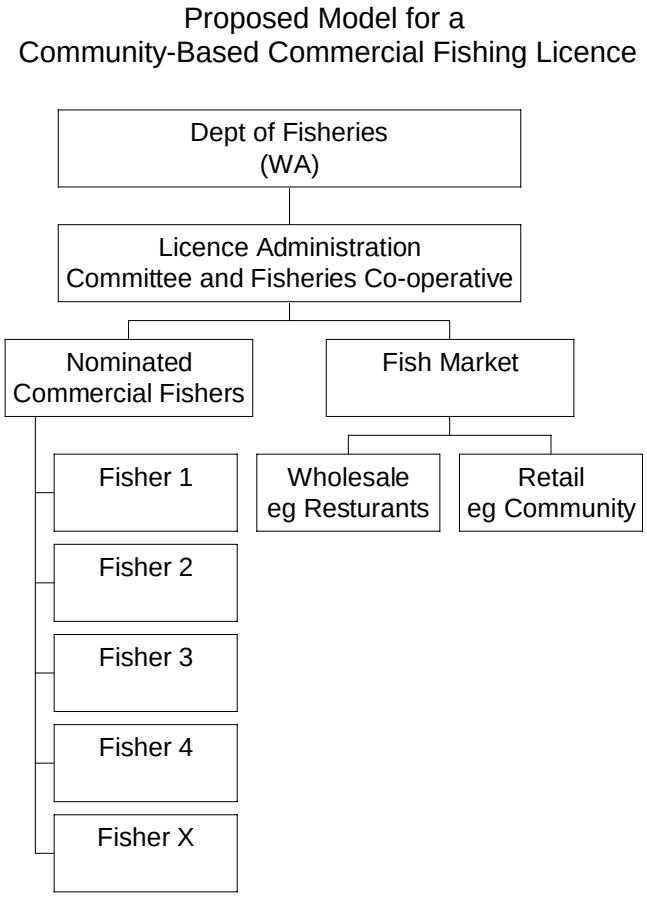
The Co-operative would also be responsible for ensuring that only fish caught and processed under the Code of Practice be accepted, as this will ultimately result in higher quality fish product and food safety on the island and a higher price paid to fishers.

With the limited size of the commercial fishery on Christmas Island, there is the possibility that the functions of the Co-operative and Licence Administration could be combined. This will be further explored through consultation with the community.

Nominated Commercial Fishers - To ensure that commercial catches are kept to a level that meets the demand of the Christmas Island community, the number of nominated commercial fishers that can operate under the Commercial Fishing Licence would need to be limited to around the current level of five (Licensed Fishing Boats).

Community members wanting to fish commercially would apply to the Licence Administration, who would then allocate the opportunity to fish among applicants (by a method yet to be determined) and set individual catch quotas in an unbiased manner on a periodic basis.

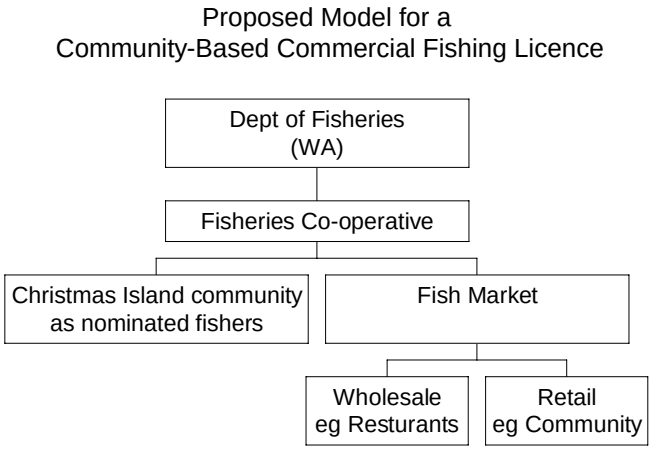
Successful applicants would be able to fish commercially under the community licence and then supply their landed commercial catch to the Co-operative for sale to the community. Given the limited demand for commercially caught fish, it is likely that fishers would only operate on a part-time basis.



Proposal 5c: Community-based commercial fishing licence (unrestricted operators)

During preliminary discussion with the community, it was requested that consideration be given to allowing all interested persons within the community to sell their fish through a co-operative under the authority of a community-based licence at any time.

This model is represented below:



Fisheries Co-operative - Under this option the Co-operative would serve the same function as outlined in Proposal 5a.

Christmas Island community as nominated fishers - If anyone in the Christmas Island community wanted to fish commercially at any time without restrictions, fish stocks could be quickly over-exploited.

In an unregulated environment other issues also arise - such as the fishers not having a fair and equitable opportunity to sell their fish, given the limited demand, ensuring minimum seafood quality standards are met and keeping an accurate record of catches.

Problems can quickly arise if the demand for fish on the island is, for example, 200kg in one day and 15 boats set out with a view to catch and sell their fish. If three boats each catch seven wahoo and return to the ramp, they will supply the entire demand for fish on that day. If the other 12 boats then return with fish, the Co-operative will not be able to take them as the entire demand for fish would have been met by the first three boats.

This creates a situation where boats may "race back to the ramp" in order to sell their catch and significant quantities of fish would be wasted. It also does not provide an equitable opportunity for people within the community to be able to sell their catch.

There would also be the risk that the fish from the other nine boats would be sold "out the back door", effectively extinguishing any demand for fish from the Co-operative.

6.1.2 Summary of Commercial Fishing Models

One of the most important aspects of developing a community-based licence is to ensure there is a fair and equitable use of the fish resources in a sustainable way. To ensure this happens, there needs to be some structure around the catching and selling of fish on Christmas Island.

Given that the all three options would still revolve around the concept of a licence to use a boat to fish commercially (a Fishing Boat Licence or FBL), people who wish to fish with boats commercially would need to have a fishing boat licence.

Currently, there is only a limited number of FBLs that apply for Christmas Island. The Department of Fisheries does not believe increasing the number of FBLs and enabling anyone who wished to fish commercially to fish would be conducive to the sustainable or equitable use of the fish resources around Christmas Island.

In addition, given the limited demand for fish on the Island, there needs to be a way of determining who fishes and what quantity of fish they are permitted to catch. This would be relatively simple to implement under Proposal 5a by way of licence conditions.

Under Proposal 5b, those people in the Christmas Island community who wish to fish commercially from a boat could be listed in a "pool" with the opportunity to fish (use a Fishing Boat Licence) being assigned to a person/boat for a set period of time (e.g. a day or a week).

The process for determining how this licence is allocated (e.g. by ballot or roster) would need to be developed with the community.

If a community-based licensing framework was pursued, the Department of Fisheries favours a system where an administrative body, made up from representatives from each community group, determines who can fish for a given period of time and what quantity of fish they can catch.

Proposal 5c would largely rely on market forces, rather than fisheries management measures, to limit the quantity of fish taken. As such, the Department of Fisheries does not consider Proposal 5c to be a viable option, as there would be no way to ensure that fish stocks are harvested at a sustainable level.

Regardless of which model is introduced, a minimum level of fisheries compliance would be necessary to ensure the long-term future of a commercial fishery on Christmas Island.

6.2 Type of Fish to be Targeted Commercially

As previously stated, the fish resources around Christmas Island are made up of the following three categories:

- pelagic;
- semi-pelagic; and
- demersal.

Large pelagic species, such as yellowfin tuna, are part of a widely distributed Indian Ocean resource. Other pelagic species such as dogtooth tuna, sailfish and wahoo may be more localised, and therefore capable of localised depletion.

Demersal fish resources such as deepwater snapper and cave sweepers are low in abundance as a result of the limited reef habitat. These species are also slow-growing, very long-lived, and can only sustain very low levels of exploitation.

For this reason, commercial exploitation of species should focus on pelagic species such as wahoo and tuna.

6.3 Guidelines for Recreational Fishing

At present there are no measures in place to manage recreational fishing on Christmas Island and the level of catch and effort is largely unknown, meaning there is very little information available to evaluate the sustainability of current recreational fishing practices.

Previous marine planning processes undertaken by Parks Australia resulted in a series of proposed management arrangements for recreational fishing on Christmas Island, including catch bag and size limits. However, due to the lack of community support and resources to enforce rules for recreational fishing on Christmas Island, these proposals were never introduced.

After further discussions with members of the Christmas Island recreational fishing community, the Department of Fisheries considers the best way to move ahead in this instance is to develop "Guidelines for Recreational Fishers on Christmas Island".

Recreational fishing guidelines would simply be a set of guidelines aimed at outlining sustainability principles and the benefits of only taking what you need or can consume within a reasonable time. Rather than being enforced, compliance to the guidelines will be voluntary; however, depending on the community's attitude and available resources some enforcement capacity may need to be considered in the future.

Community support for the sustainability of fish resources is a vital factor in successful recreational fisheries management and 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; and
- 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 is informed of the reasons for management decisions.

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 using

elders or volunteers, school education programs, radio advertising and information publications.

Proposal 6: Guidelines for Recreational Fishing

Recreational fishing guidelines should be developed to outline sustainability principles and the benefits of only taking what fish you need or can consume within a reasonable time. In the first instance, compliance to the guidelines will be voluntary.

6.3.1 "Catch Guidelines" for Recreational Fishing

As an introduction to the concepts of sustainable fisheries management, "catch guidelines" are considered the most appropriate pathway. There is merit in developing "catch guidelines" based on what the community believes is a fair and reasonable amount of fish for individual use, within overall catch limits that ensure sustainability.

It is likely that most recreational fishers on Christmas Island already have a personal view on what they consider to be a reasonable day's catch. For example, one fisher may be satisfied and stop fishing after catching four Wahoo; however, the same fisher may wish to catch a greater number of demersal fish, such as cave sweeper.

Ultimately it would be up to the community, as users and shared custodians of the fishery, to contribute towards establishing appropriate levels for recreational fishing "catch guidelines". The community and the Department of Fisheries will also need to consider if an element of enforcement should be associated with these guidelines in the future.

The proposed recreational fishing "catch guidelines" contained in the tables below have been developed after consideration of previous bag limit proposals by Parks Australia and the limits developed through the Cocos (Keeling) Islands recreational fishing planning process (Appendix 1).

The proposed "catch guidelines" should be seen as an education-based part of a total management approach to ensure fishers will enjoy the benefits of healthy fish stocks in the future. While they will not be enforced, they will provide a "social standard of practice".

Proposal 7: "Catch Guidelines" for recreational fishing
As a starting point for community discussion it has been proposed that "Catch Guidelines" for recreational fishers be divided into three finfish categories based on a species risk to over-exploitation.

Category 1 Fish – includes pelagic fish and vulnerable demersal species;
Category 2 Fish – includes all other demersal species; and
Category 3 Fish – includes all other generally more abundant fish.

In addition to the three finfish categories, it is also proposed that two additional categories be introduced - one including invertebrate species, such as rock lobster and squid, and the other listing species that should be totally protected.

Proposal 7a: Category 1 Fish

Category 1 Fish – combined species bag limits		
Category 1 fish are generally long-lived, slow growing, mature at four-plus years, form semi-resident populations, are vulnerable to localised depletion due to their life history, or are of low abundance or highly targeted.		
Species	**Scientific Name**	**Bag Limit**
Billfish - sailfish, swordfish, marlins (combined)	Families Istiophoridae and Xiphiidae	1
Cods – including coral trout, coronation trout and coral cod (combined)	Family Serranidae	4
Snappers – including jobfish, ruby snapper and rosy snapper (combined)	Family Lutjanidae	4
Trevally – Giant, bluefin (combined)	Family Carangidae	4
Wahoo, Mackerel, Mahi mahi and Tuna (combined)	Family Scombridae	4

Proposal 7b: Category 2 Fish

Category 2 Fish – total mixed bag limit of 16		
Category 2 fish are primarily deepwater demersal "bottom-dwelling" species. These species form resident populations around Christmas Island and are likely to rely heavily on local breeding stock levels as a source of recruitment. Many fish in this category are highly valued for their eating qualities.		
Species	**Scientific Name**	**Mixed bag limit**
Barracuda	Family Sphyraenidae	16
Cave sweeper	*Pempheris oualensis*	
Emperors and Sweetlips	Family Lethrinidae	
Bigeyes	Family Priacanthidae	
Soldier fish	*Myripristis* and *Plectrypops* spp.	
Squirrel fish	*Sargocentron* spp	
Wrasses	Family Labridae	

Proposal 7c: Category 3 Fish

Category 3 Fish – no bag limit		
Category 3 fish are primarily common "baitfish" species. These species are generally in high abundance, often forming large schooling aggregations.		
Species	**Scientific Name**	
Flying fish	*Cypselurus spp.*	No bag limit
Mackerel scad	*Decapterus macarellus*	
All other unlisted species		

Proposal 7d: Crustaceans and Shellfish

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. Catch guidelines apply to each species, due to the high risk of localised depletion.		
Species	**Scientific Name**	**Bag limit**
Rock Lobster	*Panulirus spp.*	2
Bugs	*Parribacus antarcticus*	2
Squid, cuttlefish and octopus	Class Cephalopoda	15

Proposal 7e: Protected species

Protected species	
Consideration should be given to protecting species that are low in abundance or highly valued as iconic species for tourism.	
Species	**Scientific Name**
Humpheaded maori wrasse	*Cheilinus undulatus*
Whale Shark	*Rhincodon typus*
Community comment should be sought on other species that may be appropriate for protection (e.g. sharks). Sharks are abundant and currently not targeted, but they could provide a major tourism drawcard for the diving industry.	

6.3.2 Size Limit Guidelines

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 increase the average size of fish available.

The effectiveness of size limits 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.

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. 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.

Like minimum sizes and bag limits, the issue of mortality of fish returned to the water is of great importance. Minimum sizes may be effective for fringing reef and pelagic species – but not for deep-water species.

Size limits for finfish are measured from the nose of the fish to the tip of the tail, whereas species such as rock lobster are measured from between the horns to the back of the carapace.

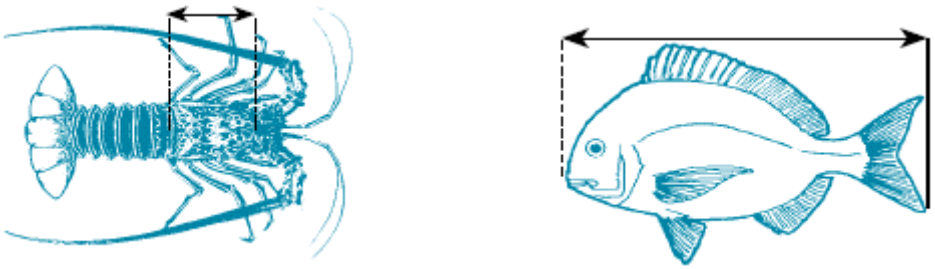


Figure 2: How to measure rock lobsters and finfish.

Proposal 8: Size limit guidelines

Size limit guidelines	
Consideration should be given to adopting minimum size limit guidelines for Christmas Islands, based on those which have been developed for similar species at the Cocos (Keeling) Islands, as follows.	
Species	**Minimum size limits**
Rock Lobsters	76mm
Coral and Coronation trout	45cm
Wahoo	90cm

6.3.3 Fishing Gear

In Western Australia restrictions apply to the gear that can be used by recreational fishers. Restrictions, which could have some application in the context of Christmas Island, include:

- no more that three hooks or gangs of hooks per line;
- no unattended set lines;
- no spearing rock lobster or other crustaceans; and
- no spearfishing on compressed air.

Proposal 9: Fishing gear controls
Community input is being sought on the need for fishing gear controls.

6.3.4 Fish Observation Areas

Some people visit the Christmas Islands primarily to observe fish in their natural environment. People who are diving or snorkelling like to see large fish, as well as an abundance of different species. This is important both for locals and as an attraction for visitors.

Local dive operators have highlighted that the abundance of sharks around the fringing reefs was a drawcard for diving around Christmas Island. In many parts of the world, the opportunity to dive with sharks is diminishing, as shark populations are overfished.

To ensure high quality diving experiences are maintained around Christmas Island, it is proposed that fishing for demersal species and sharks around key dive sites is discouraged.

Proposal 10: Fish observation areas
Comment is being sought from the local community on areas they believe should be managed primarily for the purpose of snorkelling and diving. Suggested locations include Flying Fish Cove.

6.3.5 Community Education Strategy

The future quality of the recreational fishing resource is dependent on the majority of community voluntarily complying with these fishing guidelines. A structured community education plan is needed to ensure the community is informed of the reasons for management decisions.

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

Proposal 11: Education and voluntary compliance
The following proposals are recommended for education and voluntary compliance.

Proposal 11a: Fishing Guide
A brochure on Recreational Fishing Guidelines on Christmas Island to inform and educate local and visiting fishers about recreational fishing management, and to promote stewardship for fish stocks and the environment. All guides and educational material could be available in Chinese, Malay and English.

Proposal 11b: Educational resource materials
Practical educational tools such as fish measuring rulers, measuring gauges for rock lobster and crabs, adhesive bag limit guides should be produced to support the Christmas Island fishing guidelines.

Proposal 11c: Schools program
A school education program to promote awareness of fishing guidelines, the need to protect breeding stocks, and the best methods for handling fish.

6.3.6 Fishing Competitions

Fishing competitions are held between the islands residents on a regular basis. The Department of Fisheries recognises that these competitions have value as a social activity for the community. To ensure these competitions are conducted with an

appropriate conservation ethos, the Department supports establishing a code of conduct for fishing competitions.

Proposal 12: Fishing Competitions
A code of conduct should be established for fishing competitions which includes the following elements:

- The competition should be limited to edible species only.
- Promote species based competitions rather than heaviest bag.
- Dumping of any fish should not be condoned.
- Fish should be stored in a way to ensure they are kept in the best possible quality for eating.

6.4 Future Management Arrangements for the Charter Industry

Charter activities in the Indian Ocean Territories have been low-key, *ad-hoc* operations that have reflected the small annual tourism flow.

Typically, charter operations have been set up by island residents to supplement other income. However, because of the fact that residents on Christmas Island have access to boats for recreational fishing, coupled with the high cost of getting to the island limiting the flow of tourism clientele, the demand for charter activities is not, at this point, constant enough to provide a steady income stream for more than a couple of operators.

Historically, there has not been any legislative or policy control over charter operations on Christmas Island. Consequently, in the past operations have set up, operated for a period and ceased, without record being kept of their existence.

In 2003 there were two dive tour operators, both eco-tour in their focus and totally non-extractive, catering to the European and Japanese dive-tour market. A third operator ran fishing charters part of the time and fished commercially for the remainder.

In Western Australia, the aquatic tour (charter) industry has been under licensing and management arrangements since 2001. These arrangements limit the number of charter licences, set environmental and safety criteria, and require licence holders to fill in research logbooks that detail fishing catch and effort.

Regulations set out the industry's rights and responsibilities, while a Ministerial Policy Guideline sets out criteria against licence applicants can be assessed. It is envisaged that a similar arrangement would ultimately be adopted for both Christmas and Cocos Islands, however both the regulations and the guidelines would be tailored to meet the environmental, social and economic requirements of the communities.

APPENDIX 1 SUMMARY OF COCOS (KEELING) ISLANDS RECREATIONAL FISHING STRATEGY – BAG AND SIZE LIMITS

COCOS (KEELING) ISLANDS BAG AND SIZE LIMITS

CATEGORY ONE - HIGHEST RISK

MIXED DAILY BAG LIMIT - 7 PER ANGLER

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

SPECIES	SCIENTIFIC NAME	MINIMUM LEGAL SIZE	BAG LIMIT
Billfish (sailfish, swordfish, marlins) Ikan Layer dan Ikan Pedang	Families Istiophoridae and Xiphiidae	N/A	1
Coral trout and coronation trout (combined bag limit) Ikan Gelek Burik dan Ikan Gelek Berekor	*Plectropomus* spp. and *Variola louti*	450mm	2
Hump headed maori wrasse – greenfish Ikan Hiju	*Cheilinus undulatus*	N/A	2
Wahoo, mahi mahi (dolphinfish), yellowfin tuna and dogtooth tuna – combined bag limit Ikan Tengiri, Ikan Dolfin dan Ikan Tuna	*Acanthocybium solandri*, *Coryphaena hippurus*, *Thunnus albacares* and *Gymnosarda unicolour*	Wahoo (Ikan Tengiri)– 900mm	4

CATEGORY TWO - MEDIUM RISK

MIXED DAILY BAG LIMIT - 16 PER ANGLER

Species generally mature at two to three years, are of moderate abundance, are highly targeted and often found in the protected habitat of the islands lagoons.

SPECIES	SCIENTIFIC NAME	MINIMUM LEGAL SIZE	BAG LIMIT
Bone fish Ikan Bangang	*Albula* spp.	N/A	4
Bonito and tunas – (other) Ikan Tuna	Family Scombridae	N/A	8
Cod – combined Gerapu Atau Ikan Gelek	Family Serranidae	N/A	8
Dart Ikan Bawal	*Trachinotus* spp.	N/A	8
Parrot fish – napoleon fish Ikan Dongol	Family Scaridae	N/A	8
Snapper, sea perch and emperors - including sweetlip, redthroat, paddletail and moses perch – combined bag limit Ikan Kapkuning, Ikan Merah, Ikan Raja dan Ikan Karang	*Lethrinus* spp. and *Lutjanus* spp.	280mm	8

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COCOS (KEELING) ISLANDS BAG AND SIZE LIMITS

CATEGORY THREE - LOW RISK

MIXED DAILY BAG LIMIT - 40 PER ANGLER

Species generally mature at one to two years, are of high abundance, distributed widely and generally pelagic. Species not listed have little known about their biology or abundance and are generally not targeted by anglers.

SPECIES	SCIENTIFIC NAME	BAG LIMIT
Garfish Ikan Julung-Julung	Family Hemirhamphidae	40
Mullet, sea Ikan Belanak	*Mugil cephalus*	40
Mullet, diamond scale Ikan Sayap Hitam	*Liza vaigiensis*	30
Rabbit fish Ikan Menyerat	*Siganus* spp.	40
Silverlies Ikan Bodas	*Gerres* spp.	40
All other unlisted species of fish		40

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 the high risk of localised depletion.

SPECIES	SCIENTIFIC NAME	MINIMUM LEGAL SIZE	BAG LIMIT	BOAT LIMIT#
CRUSTACEANS				
Mud crab Rajunan	*Scylla* spp.	150mm carapace	5	10
Rock lobster Udang dan Udang Galah	*Panulirus* spp	76mm carapace	4	8
Slipper lobsters Udang Lepeh	*Scillarides* spp.		4	8
Ghost, hermit and sand crabs – All other crab species	*Families Ocypodidae, Diogenidae* and *Portunidae*		20	
MOLLUSCS AND OTHER REEF ANIMALS				
All species of edible mollusc including gong gong and turban shell – combined bag limit Siput Kepala biola	Class Gastropoda inc Families Strombidae and Turninidae		9 litres* - in shells	
Squid and large octopus – combined bag limit Sotong dan Gerita	Class Cephalopoda		15	
Small octopus caught during doldrums	*Octopus* spp.		9 litres*	

*9 litres is approximately 1 standard sized bucket full.

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APPENDIX 2 LIST OF KNOWN FISH SPECIES AT CHRISTMAS ISLAND

Malay Name	Common Name	Species Name
Ikan puteh besar:	***Large trevallies:***	***Carangidae:***
Ikan puteh bongkok (hitam)	Black trevally	*Caranx lugubris*
Ikan puteh biru	Bluefin trevally	*Caranx melampygus*
Ikan puteh kayu	Giant trevally	*Caranx ignobolis*
Ikan puteh	Other trevallies in the genus	*Caranx* spp.
Ikan Lumadang:	***Dolphinfish:***	***Coryphaenidae:***
Ikan lumadang	Dolphinfish	*Coryphaena hippurus*
Ikan alon tasek:	***Dog-tooth Tuna:***	***Scombridae:***
Alon tasek	Dog-tooth tuna	*Gymnosardia unicolor*
Salaman:	***Snappers:***	***Lutjanidae:***
Salaman karang	Small-toothed jobfish	*Aphareus rutilans*
Salaman biru	Green jobfish	*Aprion virescens*
Salaman kuning	Yellow margined seaperch	*Lutjanus fulvus*
Salaman	Maori (blubberlip) seaperch	*Lutjanus rivulatus*
Ikan tanther	Blackspot snapper	*Lutjanus fulviflamma*
Ikan nonya ('brazil')	Bluestripe snapper	*Lutjanus kasmira*
Ikan merah ayer dalum	Paddletail	*Lutjanus gibbus*
Ikan lala ayer dalum	Blue snapper	*Paracaesio sordidus*
Salaman karang kuning	Goldflag jobfish	*Pristipomoides auricilla*
Salaman air dalam:	***Deepwater snappers:***	***Lutjanidae:***
Salaman merah	Ruby snapper	*Etelis coruscans*
Salaman merah	Ruby snapper	*Etelis carbunculus*
Salaman merah	Pale snapper	*Etelis radiosus*
Ikan merah besar	Red bass	*Lutjanus bohar*
Ikan krisi	Oblique banded snapper	*Pristipomoides zonatus*
Salaman karang	Rosy snapper	*Pristipomoides filamentosus*
Kerapu:	***Cods:***	***Serranidae:***
Kerapu nonya	Strawberry cod	*Cephalopholis spiloparea*
Kerapu nonya	Orange cod	*Cephalopholis analis*
Kerapu cicak	White-lined cod	*Anyperodon leucogrammicus*
Kerapu cicak	Spotty cod	*Epinephelus spilotoceps*
Kerapu cicak	Reef cod	*Epinephelus tauvina*
Kerapu cicak	Honeycomb cod	*Epinephelus merra*
Kerapu cicak	Wirenetting cod	*Epinephelus hexagonatus*
Kerapu kuning	Brownback cod	*Epinephelus retouti*
Kerapu kuning	Deepsea cod	*Saloptia powelli*
Kerapu air dalam:	***Deepwater cods:***	***Serranidae:***
Kerapu merah	Blacktipped cod	*Epinephelus fasciatus*
Kerapu puteh (morrhua)	Comet cod	*Epinephelus morrhua*
Kerapu bintang	Sixband cod	*Epinephelus sexmaculatus*
Kerapu bintang	Coral cod	*Cephalopholis miniatus*
Kerapu hitam	Peacock cod	*Cephalopholis argus*
Kerapu boronok	Lunar-tailed cod	*Variola louti*

Ikan belang:	***Emperors & Sweetlips:***	***Lethrinidae/Haemulidae:***
Ikan gigi orang	Large-eyed seabream	*Monotaxis grandoculis*
Ikan belang	Oriental Sweetlips	*Plectorhinchus gibbosus*
Ikan belang	Dusky sweetlips	*Plectorhinchus gibbosus*

Deepwater Fish:	***Deepwater Fish:***	***Species Name:***
Sepat	Cave Sweeper	*Pempheris oualensis*
Batik	Glass Big-eye	*Heteropriacanthus cruentatus*
Ikan merah	Soldier fishes	*Myripristis* and *Plectrypops* spp.
Samsing (gangsters)	Squirrel fishes	*Sargocentron* spp.

Pelagic Fishes:	***Pelagic Fishes:***	***Species Name:***
Ikan terbang	Flying fishes	*Cypselurus* spp.
Ikan benggol	Mackerel scad	*Decapterus macarellus*
Coco lendih	Island trevally	*Camgoides orthogrammus*
Salaman puteh	Rainbow runner	*Elegatis bipinnulata*
Ikan talang	Queenfish	*Scomberoides lysan*
Ikan tongkol (Alon kuning)	Yellowfin Tuna	*Thunnus albacares*
Ikan alon	Big Eye Tuna	*Thunnus obsesus*
Tengiri belang	Wahoo	*Acanthocybium solandri*

Crustaceans:	***Crustaceans:***	***Species Name:***
Udang	Green crayfish	*Panulirus pencillatus*
Udang biasa (hijuh/hijau)	Painted crayfish	*Panulirus versicolor*
Udang galah	Ornate ('leopard') crayfish	*Panulirus ornatus*
Udang lepeh	Spanish lobster ('bug')	*Parribacus antarcticus*

List of Fisheries Management Papers

Not all have been listed here. A complete list is available online at http://www.fish.wa.gov.au

141 Fish Protection Measures in Western Australia (June 2001)

142 Fisheries Environmental Management Plan for the Gascoyne Region (June 2002)

143 Western Rock Lobster. Discussion paper for seasons 2001/2002 and 2002/2003 (July 2000)

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)

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.

146 Sustainable Tourism Plan for the Houtman Abrolhos Islands (February 2001)

147 Draft Bycatch Action Plan for the Shark Bay Prawn Managed Fishery (Full Report) (April 2002)

148 Draft Bycatch Action Plan for the Shark Bay Prawn Managed Fishery (Summary Report) (April 2002)

149 Final Plan of Management for the Lancelin Island Lagoon Fish Habitat Protection Area (March 2001)

150 Draft Plan of Management for the Cottesloe Reef Proposed Fish Habitat Protection Area (April 2001)

151 Inventory of the Land Conservation Values of the Houtman Abrolhos Islands (July 2003)

152 Guidelines for the Establishment of Fish Habitat Protection Areas (June 2001)

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).

154 A Five-Year Management Strategy for Recreational Fishing in the Gascoyne. Final Report of the Gascoyne Recreational Fishing Working Group (September 2001)

155 Plan of Management for the Cottesloe Reef Fish Habitat Protection Area (September 2001)

156 The Translocation of Brown Trout (Salmo Trutta) and Rainbow Trout (Oncorhynchus mykiss) into and within Western Australia (June 2002)

157 Policy for the Implementation of Ecologically Sustainable Development for Fisheries and Aquaculture within Western Australia. By W.J. Fletcher (May 2002)

158 Draft Plan of Management for the Miaboolya Beach Fish Habitat Protection Area (March 2002)

159 The Translocation of Barramundi (Lates calcarifer) for Aquaculture and Recreational Fishery Enhancement in Western Australia. By Tina Thorne.

160 The Introduction and Aquaculture of Non-endemic Species in Western Australia: the 'Rotund' Yabby Cherax rotundus and the All-male Hybrid Yabby. A Discussion Paper. (June 2002)

161 Plan of Management for the Miaboolya Beach Fish Habitat Protection Area (September 2002)

162 Reseeding of grazing gastropods and bivalves into the marine environment in Western Australia – a discussion paper. By Jane Borg.

163 Review of recreational take of coral in Western Australia – a discussion paper October 2002.

164 Report of the Mackerel Independent Advisory Panel to the Executive Director, Department of Fisheries, on criteria for access to, and management arrangements for, the proposed Mackerel Fishery (Interim) Management Plan (November 2002)

165 Report to the Minister for Agriculture, Forestry and Fisheries by the Integrated Fisheries Management Review Committee (November 2002)

166 Fisheries Statutory Management Authority Inquiry. A background paper (February 2003)

167 Draft Fisheries Environmental Management Plan for the Northern Region (in press)

168 Aboriginal Fishing Strategy: Report to the Minister for Agriculture, Forestry and Fisheries by the Hon E. M. Franklyn QC, Chairman of the Aboriginal Fishing Strategy Working Group (May 2003)

169 Hardy Inlet discussion paper (February 2004)

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173 Draft Plan of Management for the proposed Point Quobba Fish Habitat Protection Area (August 2003)

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177 Fisheries Environmental Management Plan for the Gascoyne Region (in press)

178 Draft Plan of Management for the Kalbarri Blue Holes Fish Habitat Protection Area (March 2004)

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180 The Sustainable Management of Western Australia's Temperate Shark Fisheries (July 2004).

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 (July 2004)

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185 Plan of Management for the Point Quobba Fish Habitat Protection Area (July 2004)

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197 Proposed Implementation of Sea Lion Exclusion Devices in the Western Rock Lobster Fishery (June 2005). Internet publication.

198 A Quality Future for the Recreational Marron Fishery – Proposals for Community Discussion. A Draft Five-Year Strategy to Ensure the Long Term Sustainability of the Marron Fishery. Produced by the RFAC Recreational Freshwater Fisheries Stakeholder Sub-Committee (August 2005).

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206 Management Arrangements for the West Coast Commercial 'Wetline' Fishery. Prepared By The West Coast And Gascoyne Management Planning Panel (January 2006).

207 Access And Allocation Arrangements For The Commercial 'Wetline' Fisheries. A Report To The Minister For Fisheries Prepared By The Commercial Access Panel (January 2006).

208 Review of the Fish Resources Management Act 1994. A discussion paper (May 2006)

209 Assessment of Western Rock Lobster Strategic Management Options. An Overview of Bio-Economic, Sociological and Comparative Analyses (Volume 1 of 4) (January 2006).

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圣诞岛渔业的未来可持续发展

姓名：_____

居住地址：_____

_____

_____ 邮政编码：_____

请用(✓)将您的答案标于相应方框内

您希望做出的补充意见可填于所提供空白处。

如空白处不够，请另附纸。

阅读本文时，请参照渔业管理文件第223号

‘圣诞岛渔业的未来可持续发展’

请给出您的意见

本调查问卷为您提供一个就如何管理圣诞岛周边商业捕捞、休渔管理发表意见的机会。阅读本问卷时，必须参照讨论文件——《圣诞岛渔业的未来可持续发展》。您在考虑讨论文件中的提议时，可能会用到本问卷中的预设答案或完成一份书面建议。不管您对各类管理提议同意与否，您的答案都同等重要。请将对提议的书面意见写于预留空白处。

提议 1——渔业管理的原则与目标

圣诞岛渔业管理策略的总体目标是由社会所有部门来确保鱼产品持续获得丰收，同时从鱼类资源中获得最大的环境、经济与社会效益。在这一总体目标的指导下，提出了若干具体的渔业管理原则与目标：

提议 1a——渔业管理的原则

	完全赞同	同意	不知道	不同意	强烈反对
圣诞岛渔业资源的管理应首先立足于将其作为岛上居民的食物来源。					
岛上居民应当参与到与本岛渔业资源管理有关的决策过程中来。					
社会成员应当获得从事商业捕捞的机会。					
圣诞岛上用于出售的所有渔业产品均应达到海产品的最低质量要求。					
应当为休渔制定明确的方针，同时应顾及圣诞岛居民的观念与期望值，并确保可持续发展。					

意见：

_____

_____

_____

提议 1b——渔业管理的目标

	完全赞同	同意	不知道	不同意	强烈反对
为了了解圣诞岛周边鱼类资源状况。					
为了在可持续发展的基础上管理圣诞岛周边鱼类资源捕捞总量，保证栖息于本地或半栖息于本地的鱼类保留足量的繁殖群。					

意见：

_____

_____

_____

提议 2——现有文献总结

	完全赞同	同意	不知道	不同意	强烈反对
对圣诞岛鱼类的现有渔业文献进行了详细的案头研究，以将全部现有信息汇总为为一个原始资料，其中包括： • 现有鱼类物种的鉴定； • 丰富程度；以及 • 目标物种的鉴定。					

意见：

_____

_____

_____

提议 3——休渔捕捞调查

定期捕捞调查可提供捕捞活动的空间与时间分布信息，在此基础上做出管理决定。

应搜集指示鱼种及栖息区域的信息，以便对休渔期的捕捞活动进行监控。这些指示信息应包括取样鱼种的最小数量与长度值。这些信息可在自愿的基础上通过捕捞日志搜集、或作为学校活动的一部分进行收集。指示鱼种应包括那些作为近岸和渔船捕捞目标的种类。

提议将下述物种作为重要指示鱼种：

	物种经常出没的环境	
指示种	**渔船**	**近岸**
	深海底栖鱼种 刺鲅 犬牙鮪 黄鳍金枪鱼 石斑鱼	双带 大鱼仔

	完全赞同	同意	不知道	不同意	强烈反对
进行捕捞调查以便提供捕捞程度的有关信息					
上述物种用作指示鱼种，以便对重要物种的丰富程度与大小进行监控。					

意见：

_____

_____

_____

提议 4——用于研究的优先物种

优先对下述重点物种进行研究，以提供物种生态与资源状况方面的信息。

物种

1. 深坡底栖物种
2. 犬牙鮪
3. 刺鲛
4. 石斑鱼
5. 黄鳍金枪鱼
6. N/A——不适用

	完全赞同	同意	不知道	不同意	强烈反对
对所列重点物种进行研究。					

意见：

提议 5：圣诞岛商业捕捞模式

圣诞岛商业捕捞模式有以下三种选项，请您分别给出意见（详情请参照 6.1 节的“渔业管理文件第 223 号”）

	完全赞同	同意	不知道	不同意	强烈反对
5a——沿用现有商业捕鱼许可体系 现有的商业捕鱼许可体系继续采用许可证相关许可条件，以保证许可证有效（捕鱼的固定期限或最低捕捞量）。当前闲置的许可证可在当地居民中重新进行分配。					
或					
5b——居民从事的商业捕鱼许可证（限制捕鱼者） 可建立居民商业捕鱼许可证体系，为限量个人（通过居民协作机构推选出的个人）提供在指定日期内捕捞规定数量的机会。					

意见：

提议 6——休渔指导方针

	完全赞同	同意	不知道	不同意	强烈反对
制定休渔指导方针是为了概述可持续发展的原则，以及在合理时间内仅取您所需或所能消费鱼类的益处。在第一种情况下，可自愿遵守这一指导方针。					

意见：

提议 7——休渔“捕捞指导方针”

西澳大利亚鱼种的管理是针对过度捕捞风险而进行的。许多鱼种在每年的同一时间都不进行繁殖。在繁殖率低的繁殖季节，仅有极少量鱼苗进入渔场，几个这样的季节之后，会出现繁殖出大量鱼苗的成功繁殖季节。

虽然在这一阶段将它们作为自愿遵守的方针提出来，这些诸如限制袋数与鱼类尺寸的管理手段依然有助于保证圣诞岛居民在下一个鱼苗补充期来临前的数年中有鱼可捕。如果没有这些指导方针，在繁殖旺季后不久，大量的鱼就被立即捕光，随后几年，就会无鱼可捕。

7(a) 1 类鱼

1 类鱼——混合鱼种袋数限制		
1 类鱼通常为寿命长，生长缓慢，四年以后才发育成熟；是半栖息于当地的物种；较长生长期易造成其局部数量减损；或者量少或极易成为捕捞对象。		
物种	**学名**	**限制捕捞袋数**
尖嘴鱼——旗鱼、箭鱼、枪鱼（混合）	旗鱼科与箭鱼科	1
鳕鱼——包括珊瑚鱼、石斑鱼、镶点石斑鱼（混合）	鲈科	4
甲鱼——包括笛鲷、红钻鱼和红笛鲷（混合）	笛鲷科	4
鲹——大仔鱼、金枪鱼（混合）	鲹科	4
刺鲅、鲭、马哈鱼和金枪鱼（混合）	鲭科	4

	完全赞同	同意	不知道	不同意	强烈反对
您是否同意 1 类中所包括的物种？					
您是否同意 1 类鱼中每天的捕捞限制量？					

意见：

7(b)　2 类鱼

2 类鱼——混合袋总量限制 16 袋		
2 类鱼主要为深水“底栖”物种。这些物种构成圣诞岛周边的本地栖息鱼种，很大程度上依赖本地繁殖作为补充源。本类中的许多鱼因其食用价值而倍受推崇。		
物种	**学名**	**限制捕捞混合袋数**
梭鱼	梭鱼科	16
黑边单鳍鱼	*黑边单鳍鱼*	
帝王鱼和包公鱼	裸颊鲷科	
大眼鲷	大眼鲷科	
鳞鱼	多锯鱼属和 Plectrypops 属	
松鼠鱼	赤鳍棘鳞鱼	
濑鱼	隆头鱼科	

	完全赞同	同意	不知道	不同意	强烈反对
您是否同意将 2 类鱼的每日限量定为混合袋 16 袋？					
您是否同意 2 类中所包括的物种？					

意见：

7（c） 3 类鱼

3 类鱼——无限制		
3 类鱼主要为普通“钓饵鱼”物种。这些物种资源丰富，常形成大规模鱼群。		
物种	学名	无限制
飞鱼	*燕鳐属*	
细鳞圆鲹	*细鳞圆鲹*	
所有其他未列物种		

关于提案的评论

	完全赞同	同意	不知道	不同意	强烈反对
您是否同意不限制 3 类鱼的捕捞量？					
您是否同意 3 类中所包括的物种？					

意见：

(7d)　甲壳类与贝类

甲壳类与贝类		
虽然实际上它们是驻留或非移栖类，但在生命周期中可能有迁徙阶段，洋流可使其仔鱼或鱼卵大面积分布。由于局部损耗的风险性很高，因此捕捞指导方针适用于所有物种。		
物种	**学名**	**捕捞量限制**
岩龙虾	*龙虾属*	2
小虾	*南极岩扇虾*	2
鱿鱼、墨鱼、章鱼	头足纲	15

	完全赞同	同意	不知道	不同意	强烈反对
您是否同意甲壳类与贝类单个物种的捕捞限制量？					
您是否同意甲壳类与贝类中所包括的物种？					

意见：

7e——受保持物种

受保护物种	
应考虑对产量低或观光价值高的物种给予保护。	
物种	**学名**
毛利波纹鹦鲷	*波纹唇鱼*
鲸鲨	鲸鲨
征询居民对其他适当鱼种的建议：例如，鲨鱼量多，目前尚未列入目标物种范围内，但是鲨鱼可作为潜水业的主要观光物种。	

	完全赞同	同意	不知道	不同意	强烈反对
您是否同意受保护物种清单？					

意见：

提议 8——尺寸限制指导方针

最小尺寸限制往往以物种的繁殖生态为基础，设定这一限制是为了保持鱼类，直至其发育成熟，并至少产卵一次。设定这一限制也是为了帮助增大可捕鱼类的平均尺寸。

尺寸限制指导方针	
应考虑以已制定的科科斯（基灵）岛捕鱼尺寸限制指导方针为基础，在圣诞岛也采纳类似捕捞限制措施：	
物种	**最小尺寸限制**
岩龙虾	76mm
珊瑚与石斑鱼	45cm
刺鲛	90cm

	完全赞同	**同意**	**不知道**	**不同意**	**强烈反对**
您是否同意将岩龙虾的最小尺寸限制定为 76mm？					
您是否同意将珊瑚和石斑鱼的最小尺寸限制定为 45cm？					
您是否同意将刺鲛的最小尺寸限制定为 90cm？					

意见：

提议 9——捕捞设备管理

在西澳大利亚，对休渔捕捞设备适用限制规定。这些限制规定适用于圣诞岛的周边区域，包括：

- 每条鱼线上不得超过三个鱼钩或三组鱼钩。
- 不得在无人看管情况下放置鱼线。
- 不得用矛尖刺捕岩龙虾或其他甲壳类动物。
- 不得使用压缩空气鱼叉。

您是否认为有必要考虑为圣诞岛制定其他捕鱼设备限制规定？

意见：

提议 10——鱼类观察区

我们正在征询当地居民对主要应当用于潜水送气管与潜水区域的意见。建议地点包括飞鱼湾。

意见：

提议 11：教育与自愿遵守

应为圣诞岛制定一个渔业社区教育与遵守计划，重点针对该岛最重要的问题与物种。这一计划应尽力协助保持管理决策的公众知情权，明确引导树立有助于鱼类可持续发展的价值观与观念，确定自愿遵守捕捞指导方针的策略。

该计划至少应包括下述内容：

	完全赞同	同意	不知道	不同意	强烈反对
11a：捕鱼指南 《圣诞岛休渔指导议会》手册用于将休渔政策告知当地居民和过路捕鱼者，并对其进行教育，以便提高鱼种数量、改善环境。所有指南和教育性资料均备有汉语、马来语与英语版本。					
11b：教育用资料 实用教育手段包括测量岩龙虾与螃蟹用的鱼类测量尺、量规；为支持圣诞岛捕鱼指导方针，应当制定胶袋限制指南。					
11c：学校计划 制定学校教育计划，促进人们对捕鱼指导方针、保护繁殖群的重要性以及鱼类加工最佳方法的认识。					

意见：

提议 12——捕鱼竞争

为捕鱼竞争制定管理规范，规范包括下述内容：

	完全赞同	同意	不知道	不同意	强烈反对
竞争应当仅限于可食用物种。					
提倡物种竞争，而不是捕获量竞争。					
决不允许有意压低任何鱼的价格。					
应当以最宜于保持鱼类食用品质的方法对其进行存储。					

意见：

A sustainable future for

FISHING

on

Christmas Island

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: 223

'A sustainable future for

FISHING ON CHRISTMAS ISLAND'

HAVE YOUR SAY

This questionnaire provides an opportunity for you to express your opinion on how commercial and recreational fisheries should be managed around Christmas Island. This questionnaire must be read in conjunction with the discussion paper *'A sustainable future for Fishing on Christmas Island'*. You may use this proforma 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 proforma space is provided for written comments on the proposals.

Proposal 1 – Fisheries management principles and objectives

The overall objective of the Christmas Island fisheries management strategy is to ensure the sustainable harvest of fish stocks by all sectors of the community while maximizing the environmental, economic and social benefits that can be derived from these resources. Within this overarching objective, a number of specific fisheries management principles and objectives have been proposed:

Proposal 1a – Fisheries management principles

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Fish resources of Christmas Island should be managed primarily as a food source for the Christmas Island community.					
The Island community should be engaged in any associated decision-making processes with respect to managing the fish resources around the island.					
Members of the community should have the opportunity to fish for a commercial purpose.					
All fish sold for a commercial purpose on Christmas Island should meet minimum seafood quality requirements.					
Clear guidelines for recreational fishers should be developed, taking into account the values and expectations of the Christmas Island community and ensuring sustainability.					

Comments:

Comments on proposals

Proposal 1b – Fisheries management objectives

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
To gain an understanding of the status of fish stocks around Christmas Island.					
To manage the total take of fish resources around Christmas Island at a sustainable level, and ensure adequate breeding stock levels of residential and semi-residential species are maintained.					

Comments:

Proposal 2 – Review of existing literature

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
A detailed desk study of existing fisheries literature on Christmas Island fish stocks to incorporate all available information into a single source including: • Identification of fish species present; • Levels of abundance; and • Identification of target species.					

Comments:

Proposal 3 – Recreational catch survey

Periodic catch surveys provide detailed information about the spatial and temporal distribution of fishing activity and catch, on which to base management decisions.

Information should be collected on indicator species and habitat zones to monitor recreational fishing activity and catch. These indicators should cover at a minimum the number and length of fish taken. This information could be collected on a voluntary basis through a logbook program or could be run as part of a school-based project. The indicator species should encompass those targeted by both shore and boat fishing.

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

	Environment where species is most often found	
	Boat based	**Shore based**
Indicator species	Deep-sea demersal species Wahoo Dogtooth tuna Yellowfin tuna Coronation trout	Rainbow runner Giant trevally

	Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**
A catch survey be undertaken to provide information about the level of catch.					
The species listed above be used as indicator species to monitor levels of abundance and size of key species.					

Comments:

Proposal 4 – Priority species for research

Research be undertaken on the following key species in the order of priority to provide information on species biology and the status of the stock.

Species

1. Deep-slope demersal species
2. Dogtooth tuna
3. Wahoo
4. Coronation trout
5. Yellowfin tuna
6. N/A – Not Available

	Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**
Research be undertaken on the listed key species.					

Comments:

Comments on proposals

Proposal 5: Models for commercial fishing on Christmas Island

Comment is being sought on the following three options for a commercial fishing model for Christmas Island (refer to Section 6.1 of Fisheries Management Paper No. 223 for details)

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
5a - Continuation of existing commercial fishing licensing framework The existing commercial fishing licensing framework be continued with conditions on licences to ensure they remain operational (fish a certain number of days or catch minimum quantities of fish). Current inactive licences could be redistributed within the local community.					
OR					
5b – Community based commercial fishing licence (restricted operators) A community based commercial fishing licence be created which would provide the opportunity for a limited number of individual people (selected via a community co-operative) to fish on any given day for a specified number of fish.					

Comments:

Proposal 6 – Guidelines for recreational fishing

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
Recreational fishing guidelines be developed to outline sustainability principles and the benefits of only taking what you need or can consume within a reasonable time. In the first instance, compliance to the guidelines will be voluntary.					

Comments:

Proposal 7 – 'Catch Guidelines' for recreational fishing

Fish stocks in Western Australia are managed on the basis of the level of risk of overexploitation. Many fish species do not breed at the same time each year. A successful breeding season which results in large numbers of small fish may be followed by several poor breeding years where very few small fish enter the fishery.

While being proposed as voluntary guidelines only at this stage, management tools such as bag and size limits can help ensure Christmas Islanders can continue to catch fish over a number of years until the next big recruitment occurs. In the absence of these guidelines, a large number of fish may be caught immediately following a good year of recruitment, but catches may be poor for the following few years.

7(a) Category 1 Fish

Category 1 Fish – combined species bag limits		
Category 1 fish are generally long-lived, slow growing, mature at four-plus years, form semi-resident populations, are vulnerable to localised depletion due to their life history, or are of low abundance or highly targeted.		
Species	**Scientific Name**	**Bag Limit**
Billfish - sailfish, swordfish, marlins (combined)	Families Istiophoridae and Xiphiidae	1
Cods – including coral trout, coronation trout and coral cod (combined)	Family Serranidae	4
Snappers – including jobfish, ruby snapper and rosy snapper (combined)	Family Lutjanidae	4
Trevally – Giant, bluefin (combined)	Family Carangidae	4
Wahoo, Mackerel, Mahi mahi and Tuna (combined)	Family Scombridae	4

	Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**
Do you agree with the list of species included in Category 1?					
Do you agree with the daily bag limits for Category 1 Fish?					

Comments:

Comments on proposals

7(b) Category 2 Fish

Category 2 Fish – total mixed bag limit of 16		
Category 2 fish are primarily deepwater demersal 'bottom dwelling' species. These species form resident populations around Christmas Island and are likely to rely heavily on local breeding stock levels as a source of recruitment. Many fish in this category are highly valued for their eating qualities.		
Species	**Scientific Name**	**Mixed bag limit**
Barracuda	Family Sphyraenidae	16
Cave sweeper	*Pempheris oualensis*	
Emperors and Sweetlips	Family Lethrinidae	
Bigeyes	Family Priacanthidae	
Soldier fish	*Myripristis* and *Plectrypops* spp.	
Squirrel fish	*Sargocentron* spp	
Wrasses	Family Labridae	

	Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**
Do you agree with a mixed daily bag limit of 16 for Category 2 Fish?					
Do you agree with the list of species included in Category 2?					

Comments:

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7(c) Category 3 Fish

Category 3 Fish – no bag limit		
Category 3 fish are primarily common 'baitfish' species. These species generally in high abundance often forming large schooling aggregations.		
Species	Scientific Name	No bag limit
Flying fish	*Cypselurus spp.*	
Mackerel scad	*Decapterus macarellus*	
All other unlisted species		

	Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**
Do you agree with no bag limit for Category 3 Fish?					
Do you agree with the list of species included in Category 3?					

Comments:

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(7d) Crustaceans and Shellfish

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. Catch Guidelines apply to each species due to the high risk of localised depletion.		
Species	**Scientific Name**	**Bag limit**
Rock Lobster	*Panulirus spp.*	2
Bugs	*Parribacus antarcticus*	2
Squid, cuttlefish and octopus	Class Cephalopoda	15

	Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**
Do you agree with the individual species bag limits for crustaceans and shellfish?					
Do you agree with the list of species included in crustaceans and shellfish?					

Comments:

7e – Protected species

Protected species	
Consideration should be given to protecting species that are low in abundance or highly valued as iconic species for tourism.	
Species	**Scientific Name**
Humpheaded maori wrasse	*Cheilinus undulatus*
Whale Shark	*Rhincodon typus*
Community comment sought on other species that may be appropriate: eg Sharks are abundant and currently not targeted, however, they could provide a major tourism drawcard for the diving industry.	

	Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**
Do you agree with the list of protected species?					

Comments:

Comments on proposals

Proposal 8 – Size limit guidelines

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 increase the average size of fish available.

Size limit guidelines	
Consideration should be given to adopting minimum size limit guidelines for Christmas Islands size limits based on those which have been developed for similar species at the Cocos (Keeling) Islands as follows;	
Species	**Minimum size limits**
Rock Lobsters	76mm
Coral and Coronation trout	45cm
Wahoo	90cm

	Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**
Do you agree with a minimum size limit of 76mm for rock lobsters?					
Do you agree with a minimum size limit of 45cm for coral trout and coronation trout??					
Do you agree with a minimum size limit of 90cm for wahoo?					

Comments:

Proposal 9 – Fishing gear controls

In Western Australia restrictions apply to the gear that can be used by recreational fishers. Restrictions, which could have some application in the context of Christmas Island, include:

- No more that three hooks or gangs of hooks per line.
- No unattended set lines.
- No spearing rock lobster or other crustaceans.
- No spearfishing on compressed air.

Do you believe there is a need to consider any fish gear restrictions for Christmas Island?

Comments:

Proposal 10 – Fish observation areas

Comment is being sought from the local community on areas they believe should be managed primarily for the purpose of snorkelling and diving. Suggested locations include Flying Fish Cove.

Comments:
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Proposal 11: Education and voluntary compliance

A fisheries community education and compliance plan should be developed for Christmas Island which focuses on the issues and species most important to the region. Such a plan should seek to help to keep the community informed of management decisions, give a clear lead on the values and attitudes which will assist in sustaining fish stocks, and identify strategies for voluntary compliance of the fishing guidelines.

The plan should, at a minimum, contain the following elements;

	Strongly Agree	**Agree**	**Don't Know**	**Disagree**	**Strongly Disagree**
11a: Fishing Guide A brochure on Recreational Fishing Guidelines on Christmas Island to inform and educate local and visiting fishers about recreational fishing management, and to promote stewardship for fish stocks and the environment. All guides and educational material could be available in Chinese, Malay and English.					
11b: Educational resource materials Practical educational tools such as fish measuring rulers, measuring gauges for rock lobster and crabs, adhesive bag limit guides should be produced to support the Christmas Island fishing guidelines.					
11c: Schools program A school education program to promote awareness of fishing guidelines, the need to protect breeding stocks, and the best methods for handling fish.					

Comments:
_____
_____
_____

Comments on proposals

Proposal 12 - Fishing Competitions

A code of conduct be established for fishing competitions which includes the following elements:

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
The competition should be limited to edible species only.					
Promote species based competitions rather than heaviest bag.					
Dumping of any fish should not be condoned.					
Fish should be stored in a way to ensure they are kept in the best possible quality for eating					

Comments:

Masa depan yang berlanjutan bagi

PENANGKAPAN IKAN

di

Christmas Island

NAMA: _____

ALAMAT RUMAH: _____

_____

_____ POSKOD: _____

Sila nyatakan jawapan anda dengan menulis tanda betul (✓) di dalam satu petak

Apa-apa komen tambahan yang ingin anda kemukakan boleh ditulis di ruang yang disediakan.
Sila kepilkan kertas tambahan untuk menulis komen anda jika ruang yang disediakan tidak cukup besar.

Hendaklah dibaca bersama dengan
Kertas Pengurusan Perikanan No: 223

'Masa depan yang berlanjutan bagi

PENANGKAPAN IKAN DI CHRISTMAS ISLAND'

SUARAKAN PENDAPAT ANDA

Soal selidik ini memberi anda peluang untuk melahirkan pendapat anda tentang cara perikanan perdagangan dan perikanan rekreasi seharusnya diuruskan di sekitar Christmas Island. Soal selidik ini mestilah dibaca bersama dengan kertas perbincangan '*Masa depan yang berlanjutan bagi Penangkapan Ikan di Christmas Island'*. Anda boleh menulis jawapan anda di sini atau mengemukakan jawapan bertulis yang lengkap apabila mempertimbangkan cadangan-cadangan dalam kertas perbincangan tersebut. Juga sama pentingnya agar anda menjawab sama ada anda bersetuju ataupun tidak dengan setiap cadangan pengurusan. Dalam soal selidik ini, ruang juga disediakan untuk anda menulis komen tentang cadangan-cadangan tersebut.

Cadangan 1 – Prinsip dan objektif pengurusan perikanan

Objektif keseluruhan strategi pengurusan perikanan Christmas Island adalah untuk memastikan tangkapan stok ikan yang berlanjutan oleh semua sektor komuniti sambil memaksimumkan manfaat persekitaran, ekonomi dan sosial yang boleh diraih daripada sumber-sumber ini. Dalam objektif yang utama ini, beberapa prinsip dan objektif pengurusan perikanan yang tertentu telah dicadangkan:

Cadangan 1a – Prinsip pengurusan perikanan

	Sangat Setuju	**Setuju**	**Tidak Tahu**	**Tidak Setuju**	**Sangat Tidak Setuju**
Sumber ikan Christmas Island harus diuruskan terutamanya sebagai sumber makanan bagi masyarakat Christmas Island.					
Masyarakat Christmas Island harus dilibatkan dengan mana-mana proses membuat keputusan yang berkaitan dengan pengurusan sumber ikan di sekitar pulau.					
Anggota masyarakat harus diberi peluang untuk menangkap ikan bagi tujuan perdagangan.					
Semua ikan yang dijual bagi tujuan perdagangan di Christmas Island harus memenuhi keperluan minimum bagi mutu makanan laut.					
Garis panduan yang jelas bagi pemancing rekreasi harus disediakan, dengan mengambil kira nilai dan kehendak masyarakat Christmas Island dan memastikan kebolehlanjutannya.					

Komen:

Komen tentang cadangan

Cadangan 1b – Objektif pengurusan perikanan

	Sangat Setuju	Setuju	Tidak Tahu	Tidak Setuju	Sangat Tidak Setuju
Untuk memperoleh pemahaman tentang status stok ikan di sekitar Christmas Island.					
Untuk menguruskan jumlah penangkapan sumber ikan di sekitar Christmas Island pada aras yang boleh dikekalkan, dan memastikan bahawa aras stok pembiakbakaan yang secukupnya dikekalkan bagi spesies huni dan separa huni.					

Komen:

Cadangan 2 – Kajian semula terbitan yang ada

	Sangat Setuju	Setuju	Tidak Tahu	Tidak Setuju	Sangat Tidak Setuju
Kajian terperinci terhadap kandungan terbitan perikanan yang sedia ada tentang stok ikan di Christmas Island untuk menggabungkan semua maklumat yang ada ke dalam satu sumber yang mengandungi: • Pengenalpastian spesies ikan yang ada; • Banyaknya; dan • Pengenalpastian spesies sasaran.					

Komen:

Cadangan 3 – Kaji selidik tangkapan rekreasi

Kaji selidik tangkapan secara berkala memberikan maklumat terperinci tentang taburan kegiatan menangkap ikan dan tangkapan dari segi ruang dan masa, untuk dijadikan asas bagi keputusan pengurusan.

Maklumat harus dikumpulkan bagi spesies penunjuk dan zon-zon habitat untuk memantau kegiatan penangkapan ikan rekreasi dan tangkapannya. Penunjuk ini haruslah merangkumi sekurang-kurangnya bilangan dan panjang ikan yang diambil. Maklumat ini boleh dikumpulkan secara sukarela melalui program buku log atau boleh dikendalikan sebagai sebahagian daripada projek sekolah. Spesies penunjuk haruslah merangkumi spesies yang disasarkan oleh penangkapan ikan di pesisir dan penangkapan ikan dari bot.

Spesies yang berikut dicadangkan sebagai spesies penunjuk yang penting:

	Persekitaran yang paling kerap ditemui spesies ini	
	Dari bot	**Di pesisir**
Spesies penunjuk	Spesies dasar laut dalam Tenggiri batang Tuna gigi anjing Tuna sirip kuning Kerapu merah	Pisang-pisang Belitong

	Sangat Setuju	**Setuju**	**Tidak Tahu**	**Tidak Setuju**	**Sangat Tidak Setuju**
Kaji selidik tangkapan dijalankan untuk memberikan maklumat tentang tahap tangkapan.					
Spesies yang disenaraikan di atas digunakan sebagai spesies penunjuk untuk memantau jumlah banyaknya dan saiz spesies-spesies penting.					

Komen:

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_____

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Cadangan 4 – Spesies keutamaan bagi penyelidikan

Penyelidikan dijalankan terhadap spesies penting yang berikut mengikut susunan keutamaannya untuk mendapatkan maklumat mengenai biologi spesies dan kedudukan stok.

Spesies

1. Spesies dasar cerun dalam
2. Tuna gigi anjing
3. Tenggiri batang
4. Kerapu merah
5. Tuna sirip kuning
6. T/D – Tidak Didapati

Komen tentang cadangan

	Sangat Setuju	Setuju	Tidak Tahu	Tidak Setuju	Sangat Tidak Setuju
Penyelidikan dijalankan terhadap spesies penting yang disenaraikan.					

Komen:

Cadangan 5: Model bagi penangkapan ikan perdagangan di Christmas Island

Komen dikehendaki mengenai tiga pilihan yang berikut bagi model penangkapan ikan perdagangan untuk Christmas Island (rujuk kepada Seksyen 6.1 Kertas Pengurusan Perikanan No. 223 untuk mendapatkan maklumat perinci)

	Sangat Setuju	Setuju	Tidak Tahu	Tidak Setuju	Sangat Tidak Setuju
5a – Penerusan rangka kerja pelesenan penangkapan ikan perdagangan yang sedia ada Rangka kerja pelesenan penangkapan ikan perdagangan yang sedia ada diteruskan dengan syarat dikenakan terhadap pemegang lesen untuk memastikan mereka kekal beroperasi (menangkap ikan pada bilangan hari yang tertentu atau menangkap kuantiti minimum ikan). Lesen yang tidak aktif pada masa ini boleh diagihkan semula kepada masyarakat tempatan.					
ATAU					
5b – Lesen penangkapan ikan perdagangan berasaskan masyarakat (pengendali terhad) Lesen penangkapan ikan perdagangan berasaskan masyarakat diwujudkan, yang akan memberi peluang kepada bilangan terhad individu (yang dipilih melalui koperasi komuniti) untuk menangkap bilangan ikan yang tertentu pada sesuatu hari.					

Komen:

Cadangan 6 – Garis panduan bagi penangkapan ikan rekreasi

	Sangat Setuju	Setuju	Tidak Tahu	Tidak Setuju	Sangat Tidak Setuju
Garis panduan penangkapan ikan rekreasi disediakan untuk menggariskasarkan prinsip-prinsip kebolehlanjutan dan manfaat mengambil hanya apa yang anda perlukan atau yang boleh anda makan dalam sesuatu tempoh yang berpatutan. Sebagai permulaan, pematuhan garis panduan adalah secara sukarela.					

Komen:

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Cadangan 7 – 'Garis Panduan Tangkapan' bagi penangkapan ikan rekreasi

Stok ikan di Australia Barat diuruskan atas dasar tahap risiko eksploitasi yang berlebihan. Kebanyakan spesies ikan tidak membiak pada waktu yang sama setiap tahun. Musim pembiakbakaan yang berjaya yang menghasilkan bilangan ikan kecil yang banyak boleh diikuti dengan beberapa tahun pembiakbakaan yang mengecewakan yang menghasilkan bilangan ikan kecil yang sangat sedikit memasuki kawasan menangkap ikan.

Walaupun dicadangkan hanya sebagai garis panduan secara sukarela pada peringkat ini, peralatan pengurusan seperti had bakul dan had saiz boleh membantu memastikan bahawa penduduk Christmas Island boleh terus menangkap ikan selama beberapa tahun sehingga berlakunya penambahan bilangan secara besar-besaran yang seterusnya. Tanpa garis panduan ini, bilangan besar ikan mungkin ditangkap sejurus selepas tahun penambahan bilangan yang baik, tetapi tangkapan mungkin tidak berapa baik pada beberapa tahun selepas itu.

7(a) Ikan Kategori 1

Ikan Kategori 1 – had bakul spesies tergabung		
Ikan kategori 1 pada amnya hidup lama, membesar dengan perlahan, matang pada umur empat tahun lebih, membentuk populasi separa huni, rentan kepada susutan setempat disebabkan sejarah hidupnya, atau tidak banyak bilangannya atau sangat disasarkan.		
Spesies	**Nama Saintifik**	**Had Bakul**
Ikan berparuh – layaran / gergaji, todak, mersuji (tergabung)	Keluarga Istiophoridae dan Xiphiidae	1
Kod – termasuk kerapu sunuh, kerapu merah dan kerapu bintang (tergabung)	Keluarga Serranidae	4
Ikan merah – termasuk jenahak, salaman dan kerisi (tergabung)	Keluarga Lutjanidae	4
Demudok / Ikan putih – belitong, sirip biru (tergabung)	Keluarga Carangidae	4
Tenggiri Batang, Kembung, Lumadang dan Tongkol (tergabung)	Keluarga Scombridae	4

Komen tentang cadangan

	Sangat Setuju	**Setuju**	**Tidak Tahu**	**Tidak Setuju**	**Sangat Tidak Setuju**
Adakah anda bersetuju dengan senarai spesies yang dimasukkan ke dalam Kategori 1?					
Adakah anda bersetuju dengan had bakul harian bagi Ikan Kategori 1?					

Komen:

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7(b) Ikan Kategori 2

Ikan kategori 2 – jumlah had bakul campuran sebanyak 16		
Ikan kategori 2 terdiri terutamanya daripada spesies yang hidup di dasar laut dalam. Spesies ini membentuk populasi huni di sekitar Christmas Island dan berkemungkinan besar banyak bergantung pada aras stok pembiakbakaan tempatan sebagai sumber penambahan bilangannya. Banyak jenis ikan dalam kategori ini bernilai tinggi kerana mutunya sebagai makanan.		
Spesies	**Nama Saintifik**	**Had bakul campuran**
Aru-aru / Barakuda	Keluarga *Sphyraenidae*	16
Temelian	*Pempheris oualensis*	
Ketambak dan Kaci	Keluarga *Lethrinidae*	
Lolong bara	Keluarga *Priacanthidae*	
Lambi	*Myripristis* dan *Plectrypops* spp.	
Selambakal	*Sargocentron spp*	
Selicin / Belodok Karang	Keluarga *Labridae*	

	Sangat Setuju	**Setuju**	**Tidak Tahu**	**Tidak Setuju**	**Sangat Tidak Setuju**
Adakah anda bersetuju dengan had bakul campuran harian sebanyak 16 bagi Ikan Kategori 2?					
Adakah anda bersetuju dengan senarai spesies yang dimasukkan ke dalam Kategori 2?					

Komen:

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7(c) Ikan Kategori 3

Ikan Kategori 3 – tiada had bakul		
Ikan kategori 3 terdiri terutamanya daripada spesies 'ikan umpan' yang biasa. Spesies ini pada amnya banyak bilangannya dan sering membentuk kumpulan-kumpulan besar.		
Spesies	Nama Saintifik	Tiada had bakul
Ikan terbang	*Cypselurus spp.*	
Selayang / Bengol	*Decapterus macarellus*	
Semua spesies lain yang tidak disenaraikan		

	Sangat Setuju	**Setuju**	**Tidak Tahu**	**Tidak Setuju**	**Sangat Tidak Setuju**
Adakah anda bersetuju dengan ketiadaan had bakul bagi Ikan Kategori 3?					
Adakah anda bersetuju dengan senarai spesies yang dimasukkan ke dalam Kategori 3?					

Komen:

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(7d) Krustasea dan Kerang-kerangan

Krustasea dan Kerang-kerangan		
Spesies ini biasanya tidak berpindah atau hidup setempat, tetapi mungkin melalui fasa hidup di lautan luas atau migrasi dalam kitaran hidupnya, dengan jejentiknya atau telurnya diedarkan secara meluas oleh arus lautan. Garis Panduan Tangkapan merangkumi setiap spesies disebabkan risiko tinggi susutan setempat.		
Spesies	**Nama Saintifik**	**Had Bakul**
Udang Karang	*Panulirus spp.*	2
Udang Laut Lebar / Udang Pasir Laut	*Parribacus antarcticus*	2
Sotong, sotong katak dan kurita	Kelas Cephalopoda	15

	Sangat Setuju	**Setuju**	**Tidak Tahu**	**Tidak Setuju**	**Sangat Tidak Setuju**
Adakah anda bersetuju dengan had bakul spesies individu bagi krustasea dan kerang-kerangan?					
Adakah anda bersetuju dengan spesies yang dimasukkan ke dalam senarai krustesea dan kerang-kerangan?					

Komen tentang cadangan

Komen:

7e – Spesies Yang Dilindungi

Spesies Yang Dilindungi	
Pertimbangan seharusnya diberikan terhadap pemeliharaan spesies yang sedikit bilangannya atau yang sangat bernilai sebagai spesies ikonik bagi pelancongan.	
Spesies	**Nama Saintifik**
Becok / Sumpit	*Cheilinus undulatus*
Yu Paus	*Rhincodon typus*
Komen masyarakat yang dikehendaki bagi spesies lain yang mungkin sesuai: misalnya ikan yu banyak bilangannya dan tidak menjadi sasaran pada masa ini, namun boleh menjadi tarikan pelancongan yang besar bagi industri penyelaman.	

	Sangat Setuju	**Setuju**	**Tidak Tahu**	**Tidak Setuju**	**Sangat Tidak Setuju**
Adakah anda bersetuju dengan senarai spesies yang dilindungi?					

Komen:

Cadangan 8 – Garis panduan had saiz

Had saiz minimum lazimnya didasarkan pada biologi pembiakbakaan spesies tersebut, dan dikenakan untuk melindungi ikan sehingga matang dan boleh bertelur sekurang-kurangnya sekali. Had ini juga boleh dikenakan untuk membantu menambahkan saiz purata ikan yang ada.

Garis panduan had saiz	
Pertimbangan harus diberikan untuk menggunakan garis panduan had saiz minimum bagi had saiz Christmas Island berdasarkan garis panduan yang telah disediakan bagi spesies yang serupa di Cocos (Keeling) Islands seperti yang berikut;	
Spesies	**Had saiz minimum**
Udang Karang	76mm
Kerapu Sunuh dan Kerapu Merah	45cm
Tenggiri batang	90cm

	Sangat Setuju	Setuju	Tidak Tahu	Tidak Setuju	Sangat Tidak Setuju
Adakah anda bersetuju dengan had saiz minimum sebanyak 76mm bagi udang karang?					
Adakah anda bersetuju dengan had saiz minimum sebanyak 45cm bagi kerapu sunuh dan kerapu merah?					
Adakah anda bersetuju dengan had saiz minimum sebanyak 90cm bagi tenggiri batang?					

Komen:

Cadangan 9 – Kawalan kelengkapan penangkapan ikan

Di Australia Barat, larangan dikenakan terhadap kelengkapan yang boleh digunakan oleh pemancing rekreasi. Larangan yang mungkin berkenaan dalam konteks Christmas Island merangkumi:

- Tidak melebihi tiga mata kail atau perambut mata kail bagi setiap kajar kaki.
- Tiada kajar kaki yang terbiar.
- Dilarang melembing udang karang dan krustasea yang lain.
- Tidak dibenarkan melembing ikan dengan udara mampat.

Adakah anda percaya bahawa larangan terhadap kelengkapan penangkapan ikan perlu diberi pertimbangan bagi Christmas Island?

Komen:

Cadangan 10 – Kawasan pemerhatian ikan

Komen dikehendaki daripada masyarakat tempatan tentang kawasan yang mereka percaya patut diuruskan terutamanya bagi tujuan bersnorkel atau menyelam. Lokasi yang dicadangkan termasuklah Flying Fish Cove.

Komen:

Komen tentang cadangan

Cadangan 11: Pendidikan dan pematuhan secara sukarela

Rancangan pendidikan dan pematuhan masyarakat perikanan yang bertumpu pada isu-isu dan spesies yang paling penting bagi kawasan ini patut dibentuk bagi Christmas Island. Rancangan ini harus bertujuan untuk membantu memberitahu masyarakat tentang keputusan pengurusan, memberi pimpinan yang jelas mengenai nilai dan sikap yang akan membantu melanjutkan stok ikan, dan mengenal pasti strategi bagi pematuhan sukarela garis panduan penangkapan ikan.

Rancangan ini haruslah sekurang-kurangnya mengandungi unsur-unsur yang berikut;

	Sangat Setuju	**Setuju**	**Tidak Tahu**	**Tidak Setuju**	**Sangat Tidak Setuju**
11a: Panduan Penangkapan Ikan Brosur mengenai Garis Panduan Penangkapan Ikan Rekreasi di Christmas Island untuk memberitahu dan mendidik pemancing tempatan dan pemancing yang melawat tentang pengurusan penangkapan ikan rekreasi, dan menggalakkan pengawasan bagi stok ikan dan persekitaran. Semua panduan dan bahan pendidikan boleh didapati dalam bahasa Cina, Melayu dan Inggeris.					
11b: Bahan sumber pendidikan Alat pendidikan amali seperti pembaris ikan, tolok pengukur udang karang dan ketam, dan panduan had bakul berperekat harus dikeluarkan untuk menyokong garis panduan penangkapan ikan Christmas Island.					
11c: Program sekolah Program pendidikan sekolah yang menggalakkan kesedaran tentang garis panduan penangkapan ikan, keperluan untuk melindungi stok pembiakbakaan, dan cara-cara terbaik untuk mengendalikan ikan.					

Komen:

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_____

Cadangan 12 – Pertandingan Memancing

Tatakelakuan diwujudkan bagi pertandingan memancing yang mengandungi unsur-unsur yang berikut:

	Sangat Setuju	**Setuju**	**Tidak Tahu**	**Tidak Setuju**	**Sangat Tidak Setuju**
Pertandingan hendaklah dihadkan kepada spesies yang boleh dimakan sahaja.					
Galakkan pertandingan yang berasaskan spesies dan bukan yang berasaskan bakul yang paling berat.					
Perbuatan membuang mana-mana ikan tidak patut dimaafkan.					
Ikan hendaklah disimpan dengan cara yang memastikan mutu yang terbaik dapat dikekalkan untuk dimakan					

Komen: