

***DRAFT***



**TORRES STRAIT FINFISH FISHERY**  
**(incorporating the Spanish mackerel and Reef-line Fisheries)**

**BYCATCH ACTION PLAN**

**2005**

*Developed by the Australian Fisheries Management Authority in consultation with Queensland Department of Primary Industries and Fisheries and the Torres Strait Finfish Fishery Working Group.*

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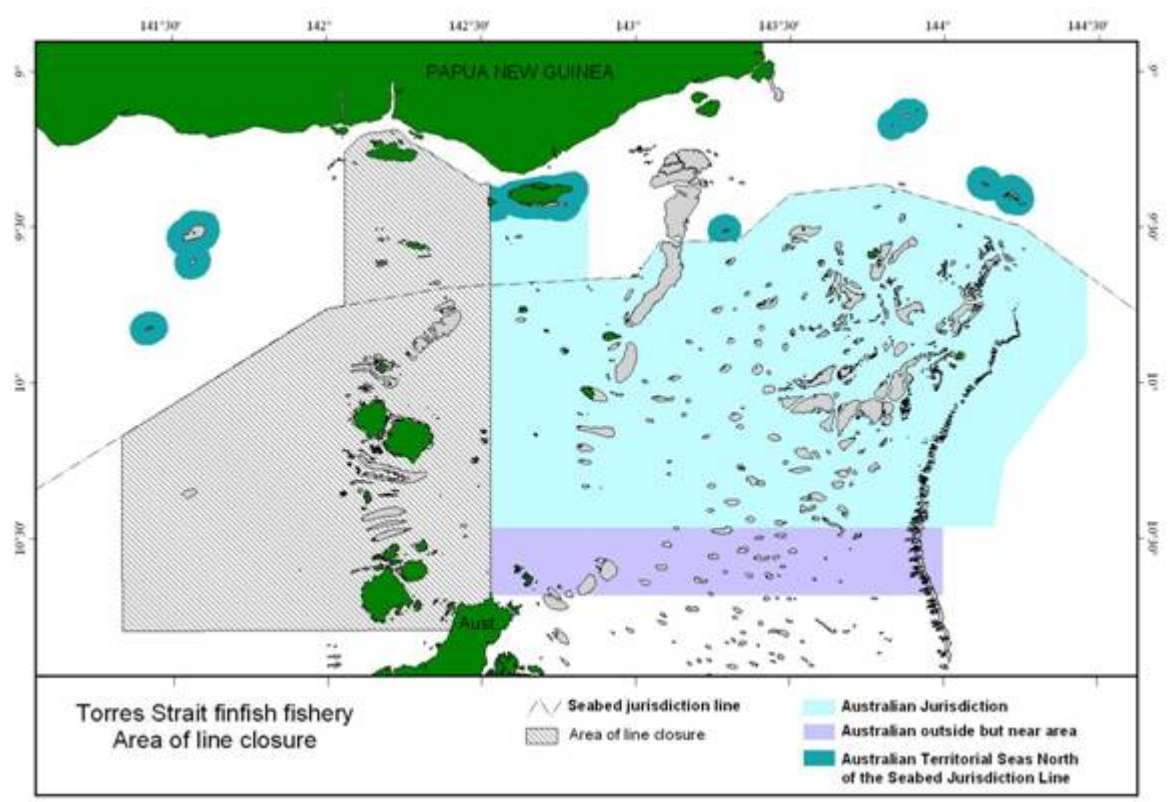


Figure 2 Area of the reef line fishery

### Target Species

In the Spanish mackerel fishery operators target mainly one species, the narrow barred Spanish mackerel (*Scomberomorus commerson*) referred to as Spanish mackerel. Also occurring in catches are school mackerel (*S. queenslandicus*), grey mackerel (*S. semifasciatus*), spotted mackerel (*S. munroi*) and shark or double-lined mackerel (*Grammatorcynus bicarinatus*).

In the reef line fishery focus is primarily on the highly valued coral trout (*Plectropomus* spp.), but mixed reef fish (*Lutjanus* spp. and *Lethrinus* spp.) and numerous species of rock cods (*Epinephelus* spp.) are also taken.

### Methods

Mackerel are generally fished by using dories operating in association with primary vessels. Primary vessels have freezing facilities and can stay at sea for over a month. The dories are around 5 metres long and are operated by one person. Troll fishing remains the major method used for taking mackerel in the Torres Straits. Trolling is done at low speed and fishers find it more economical and practical to use slow diesel powered displacement hulled dories rather than outboard powered dinghies.

Trolling uses lines of variable length with hooks baited with garfish, or less frequently, an artificial lure. A number of lines may be used to fish the surface or they can be weighted to fish deeper waters. When catch rates increase the number of lines used is usually reduced. Fishing begins at first light and stops mid-morning when the fish stop biting or the catch requires processing. Fishing restarts in mid afternoon and continues to dark.

As in the mackerel fishery, reef line fishers generally fish by using dories operating in association with primary vessels. The dories are also around 5 metres long and are powered by outboard motors and operated by one person.

In the reef line sector finfish may be taken by either hand held fishing lines, fishing rods, or mechanically operated reels. Hand held fishing lines are the most commonly used.

## *Catch*

Catch rates in the Spanish mackerel fishery have been fairly consistent over the past five years in the non-indigenous sector. Approximately 77 tonnes of fillet (down from 124 tonnes in 2002-2003) was landed in 2003-2004 which was worth around \$0.919 million. Landings from the northern Territorial Seas are usually greater than from the TSPZ with the waters surrounding Bramble Cay being the most productive.

In the reef line fishery catches have varied from 25 tonnes to 163 tonnes during the period 1989 to 2002. For 2003-2004 the catch was 136 tonnes with a value of approximately \$1.52 million. Total catch and effort closely correlate throughout this period. The level of catch in the fishery is generally at its peak during the spring, with catches being moderate in autumn and winter, and low during the months December to February.

## *Effort*

In April 2004 there were around 277 boats (which includes primary boats and tenders) licensed to fish for Spanish mackerel in the Australian waters of the Protected Zone. Of these there are 88 non-indigenous boat licences attached to primary and tenders, and approximately 189 licences held by Traditional Inhabitants. While Spanish mackerel fishing is an important source of income for some Traditional Inhabitants, the level of participation remains low due to other fisheries, such as tropical rock lobster, being more profitable and more amenable to the dinghies operated by Traditional Inhabitants.

In the reef line fishery, prior to the introduction of single jurisdiction in April 1999, there were 1,653 vessels licensed under Queensland jurisdiction who could potentially fish the TSPZ. When the fishery came under Commonwealth jurisdiction in 1999, this number was substantially reduced. As of April 2004 the reefline fishery comprised of 175 fully transferable licences (this figure includes primaries and their respective tenders) and 176 Traditional Inhabitant Boat licences (TIBs).

Since 2000 between 9 and 13 fully transferable licence packages have been active in the fishery (ie. primaries with their respective tenders). The number of Traditional Inhabitants active in the fishery was not known at the time of writing but with the introduction of the AFMA docket book, quantifying the number of Traditional Inhabitants active in the fishery will be possible.

## *Stock status*

In both the Spanish mackerel and the reefline fisheries one of the highest priorities is to establish the status of their respective stocks. There is little knowledge of what impact existing boats are having on the resource. As no formal stock assessment has been undertaken in either fishery, the status of the stocks are unknown.

There is however a research project titled “Status assessment of the eastern Torres Strait Spanish mackerel Fishery” that commenced in 2004. This project will include retrieving and collating all available information on the Spanish mackerel fishery which will be used to determine a suitable model for a status assessment. This will be followed with a status assessment of the fishery. This project is expected to be completed by June 2006. In addition, an assessment of the reef line fishery is being undertaken through a CRC Torres Strait research project titled “Evaluation of the Eastern Torres Strait Reef Line Fishery”. This project is also expected to be completed by June 2006.

## *Logbook Data*

Fishers have been required to complete logbooks in the Spanish mackerel fishery since 1985. In the reef line fishery, prior to 2003 the recording of commercial catch was through the use of the Queensland Reef Line Logbook.

Both logbooks were reviewed in 2002 which resulted in a new logbook, known as the Torres Strait Finfish Log – TSF01, being introduced at the commencement of the 2003 fishing season into both the Spanish mackerel and reef line fisheries. The new logbook includes provisions for the recording of byproduct and interactions with wildlife and protected species.

## **Summary of Bycatch Issues in the Spanish Mackerel Fishery**

### *Selectivity of the method*

Trolling for mackerel is regarded as a relatively selective fishing method. However logbook data does show that there is a small quantity of reef fish bycatch most of which are retained as byproduct. The most common species caught while fishing for Spanish mackerel is coral trout. The coral trout is a valuable table species and has therefore tended to be retained.

### *Bycatch*

The major bycatch in the Spanish mackerel fishery are reported to be:

- tuna species of a small size (longtail tuna, mackerel tuna, and juvenile yellowfin),
  - these are generally readily and safely returned to the water with no damage to fish or fishermen;
- trevally (of a range of species) some reaching 30-40 kg,
  - which are generally released with little apparent damage, although with some difficulty but with no real danger to fishermen;
- barracuda species (probably 2 species),
  - which can pose extreme danger to fishermen in attempts to ensure release in good condition; and
- sharks, rays and sawfish,
  - sharks are generally hooked not from taking the bait but rather the Spanish mackerel and are, in turn, hooked themselves. Sharks will invariably break the troll lines and the tinned hooks used ultimately rust. Their survival rate is probably high.

Bycatch are not currently required to be recorded in logbooks.

## *Spanish mackerel size limit*

Minimum legal size for Spanish mackerel in Torres Strait is 75 cm measured from the snout tip (upper or lower jaw) to the extremity of the tail or caudal fin. The same minimum size limit applies in the Queensland East Coast and Gulf of Carpentaria fisheries. This length corresponds to a fork length of approximately 65cm.

Juvenile fish just less than 2 years of age which correspond to a fork length of <80 cm usually do not bring a high market price due to the small size of the fillet. Fishers will usually move away from fishing grounds where small fish are abundant.

## *Reef fish size limits*

In the line fishery minimum size limits exist for most species taken, and for some species a maximum size limit also applies. Fish outside these minimum and maximum sizes are discarded. The size limits are adopted from those used by the Queensland Department of Primary Industries and Fisheries.

## *Birds*

Seabirds known to frequent the Torres Strait are primarily Boobies and Shearwaters (mutton birds).

- Boobies of the species Brown Booby (*Sula leucogaster*), Masked Booby (*Sula dactylatra*), and Redfooted Booby (*Sula sula*), are plunge divers and are known to have the potential to be caught by fishers.
- The Streak Shearwater (*Calonectris leucomelas*) can occur in Torres Strait during November to May. It is a diver and has potential to take baits. They are often seen over schools of small fish.
- The Wedgetail shearwater (*Puffinus pacificus*) is a colonial breeder on oceanic islands however it is not known to follow vessels.

These bird species are listed as migratory species under *the Environment Protection and Biodiversity Protection Act 1999 (EPBC Act)* however none are considered as threatened species.

Most birds that have been observed to show interest in baits are capable of diving from height and are capable of reaching the depths that baits are trolled. Anecdotal information indicates that the catching of birds during fishing operations is uncommon. Troll fishermen may go for several years without catching a bird. Although trolling for Spanish mackerel may occur around major bird rookeries such as Bramble Cay, based on existing anecdotal reports, bird strikes are currently not a problem.

## *Turtle and dugong*

Turtle and Dugong are protected species under the EPBC Act. They may be taken by traditional inhabitants but only in the course of traditional fishing. Given the nature of the gear used, the risk of interaction with turtle or dugong is considered to be very low in the Spanish mackerel Fishery.

The dugong is a herbivore, feeding off sea grass beds and will not take Spanish Mackerel baits or lures. The risk of dugong being snagged while trolling or being hit by the trolling dinghy is low due to the tendency for Spanish Mackerel and dugongs to inhabit different environments. The distribution of the dugong in Torres Strait broadly coincides with that of seagrass. Trolling for Spanish mackerel occurs off reef fringes and rock shoals, with over half the total catch caught off Bramble Cay.

Turtles have been known to be accidentally hooked or snagged by troll lines although incidents are extremely rare even in areas adjacent to major turtle nesting sites. The most practical way of releasing snagged turtles by a single operator on a fishing dory would be to hold the wire trace taught and remove the hook backwards by pulling the hook with a gaff. However, for a single person to bring a turtle along side a small dory and perform such an operation in open waters may be hazardous. An easier solution in some situations is to cut the trace as close to the hook as possible and release the turtle leaving the hook to rust.

## **Summary of Bycatch Issues in the Reef Line Fishery**

### *Selectivity of the method*

The small scale handlining method used in the Reef Line Fishery lends itself to a relatively low level of bycatch. The lack of automated or mass production fishing processes allows for an operator to closely control the fishing operations and intervene when interactions with non-target species occur.

### *Size limits*

In the reef line fishery minimum size limits exist for over 50 species, with some species also having a maximum size limit. Fish outside these minimum and maximum sizes are discarded. Bycatch is not currently required to be recorded in logbooks. Size limits are adopted from those used by the Queensland Department of Primary Industries and Fisheries.

### *Birds*

As in the Spanish Mackerel Fishery, birds such as shearwaters and boobies do have the potential to dive for bait and become hooked. However, as line fishers tend to use weighted lines over reefs and are under the direct control of the fishers, risk of incidental bird capture is considered to be very low. Anecdotal evidence from fishers confirms this and no data exists to suggest otherwise.

### *Dugong*

The risk of interaction with dugong is considered low as line fishing occurs around reef environments whereas dugongs inhabit sea grass beds. In addition, as dugongs are herbivores it is extremely unlikely that they will take baits.

### *Turtles*

Turtles are encountered in the reef environments where line fishing occurs. The Recovery Plan for Marine Turtles in Australia (Department of the Environment and Heritage 2003) recognises that a low risk of turtle catch exists in the Queensland Line Fishery (which has similar gear regulations as the Torres Strait Reef Line Fishery). The Plan also acknowledges that if a turtle were hooked it would be easily released.

## OBJECTIVE

The objective of bycatch action plans for Commonwealth fisheries including the Torres Strait Finfish Fishery is:

*‘To ensure that the impacts of the fishery’s bycatch on the ecosystem are sustainable and consistent with legislative requirements’*

## FISHERY SPECIFIC ISSUES / RISKS

### *Protected species and threatened ecological communities*

There are no ecological communities within the marine environment that are listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

All species of marine turtle, seabird and marine mammal, including dugongs, are classified as protected under the EPBC Act. The risk of interactions with these protected species is considered low. To date there have been no reported incidents of interaction with protected species.

### *High risk and other bycatch species*

Based on the data collected to date it appears that there are no species at high risk as a result of fishing activities carried out in the reef line or mackerel fisheries.

Should any high risk by-catch species be identified in the ecological risk assessment (ERA) process, appropriate management measures will be implemented to reduce the risk to the identified by-catch species.

### *Ecological Risk Assessment (ERA) project*

*AFMA is committed to the ERA process which will help prioritise species, habitats and communities that are most at risk from fishing in the Torres Strait Finfish Fishery. The ERA is a two-phase project. Phase I ran from October 2001 to July 2004 and consisted of two levels of assessment aimed at assessing the risk fisheries pose to the sustainability of species it interacts with. There was limited analysis of the Torres Finfish Fishery in Phase I. Phase II will run for two years from August 2004 and will finalise the risk assessment for AFMA managed fisheries using a refined methodology. AFMA management and fishery advisory groups will respond to the outcomes of the ERA. The ERA project will enable better targeting of management actions, research and monitoring needs to high risk areas.*

## *Removal of habitat*

As a result of the fishing methods used in the reef line and mackerel fisheries, the risk of the removal of habitat is considered to be extremely low.

## *Impact of total bycatch on the broader ecosystem*

The small scale methods used in the reef line and mackerel fisheries lends the fishery to a relatively low level of bycatch. The methods used allow for operators to closely control the fishing operations and intervene when interactions with non-target species occur.

The results of the ERA will inform management of the priorities for research, data collection, monitoring and management in the fishery.

## **STRATEGIES / ACTIONS**

In developing strategies and actions it is important to note that the 2000 *Commonwealth Policy on Fisheries Bycatch* includes the following core objectives:

- to reduce bycatch
- to improve protection for vulnerable species
- to arrive at decisions on the acceptable extent of ecological impacts

### **Issue: Need to improve the level of information on interactions between the fishery and non target and protected species.**

#### *Strategy 1: Quantify the level of bycatch taken in the Finfish Fishery.*

##### *Actions*

###### *Data Collection*

- Review existing logbook by 30 June 2005 with the aim of adding a provision for the recording of bycatch in the fishery.
- Holders of fully transferable licences who partake in the reef line or Spanish mackerel fisheries at any level will be provided with and required to complete the Torres Strait Finfish Log – TSF01.
- Fishers will be educated on the value of providing accurate catch information in the Torres Strait Finfish Log - TSF01 and Torres Strait Seafood Buyers & Processors Docket Book – TDB01 and in respect to the TSF01 particular focus on recording interactions with wildlife .
- The Torres Strait Finfish Working Group will request that any research being undertaken note any interactions that occur with wildlife or protected species.

###### *Data Analysis*

- Logbook data and any additional information obtained through other sources, eg. research, observers etc., will be analysed by AFMA to identify levels of bycatch and risks to protected species, and to monitor any trends. Findings will then be considered by the Finfish Working Group annually and appropriate measures devised.

## *Management Response*

- AFMA and the Finfish Working Group will address risks identified through the ERA. The results of the ERA will also inform management of the priorities for research, data collection, monitoring and management in the fishery.
- For protected species, the Finfish Working Group will consider appropriate measures within six months of the risk being identified and will implement appropriate measures to reduce the interaction to a level that does not pose a threat to that species within a further six months.

## *Performance Indicators*

### *Outputs*

- A strategy for educating fishers on the value of providing accurate catch information is implemented by AFMA by 30 June 2005.
- A strategy to ensure that reliable information is collected on interactions with protected species is implemented by AFMA by 30 June 2005.
- Bycatch information collated and summarised and a report prepared for the Finfish Working Group within twelve months of commencement of this BAP.
- The Finfish Working Group considers appropriate measures to reduce interactions with protected species within six months of the risk being identified and implements them within a further six months.

### *Outcome*

- Improved information on bycatch in the Finfish Fishery and thus enable more informed management decisions.

## *Funding*

- This will be achieved through the existing logbook program budget and staff salaries budget. The combined budget for Torres Strait finfish(mackerel and reef fish), rock lobster and docket book for 2004/05 is \$46,591. These items exist in a combined Torres Administration budget. The TSF01 logbook will be re-printed in 2004/2005 for which \$2800 has been allocated.

## **Issue: There is limited information on the biological characteristics of most species taken as bycatch in the Finfish Fishery.**

### ***Strategy 2: Research to increase the biological information of bycatch species in the Finfish Fishery***

#### *Actions*

##### *Data Collection*

- The Finfish Fishery research priorities will be reviewed on an annual basis by the Finfish Working Group.

- The Evaluation of the Eastern Torres Strait (ETS) Reef Line Fishery project includes a series of observer trips which will identify and record catch information for all fish captured including species, size, condition and bycatch.
- Where a species is identified as medium to high risk through the ERA, that species, will be nominated as a research priority for the fishery by the Finfish Working Group. The Finfish Working group will also decide, within 6 months of risks being identified, what interim measures can be put in place to reduce the identified risk pending results from research.
- Where the collection of biological information for a particular species cannot be incorporated into an existing research task, the Finfish Working Group will encourage researchers to develop proposals which secure funding to address research needs.

### *Data Analysis*

- The Finfish Working Group will assess the information obtained through research, such as the ETS project, to assess the appropriateness of existing measures as it becomes available.
- The Finfish Working Group will review the appropriateness of the current size limits in the reef line and mackerel fisheries biennially.

### *Management Response*

- Make adjustments to size limits as required.
- AFMA will incorporate the findings of the ERA project through implementing targeted management/mitigation regimes for any species identified as being at a high risk.

### *Performance Indicators*

#### *Outputs*

- Interim measures to reduce risk to bycatch species recognised as high and medium risk to be identified and implemented within 8 months of risk being identified.
- Researchers encouraged to submit proposals that will address identified research priorities.
- Appropriate size limits implemented.
- Findings from the ERA project have been incorporated into future management arrangements of the Finfish Fishery.

#### *Outcome*

Improved information on medium to high risk bycatch species and management measures introduced to mitigate identified risks.

### *Funding*

- Research in the Torres Strait is co-ordinated through the Torres Strait Scientific Advisory Committee (TSSAC). Funding is obtained through the research proposal application process, ie. CRC Torres Strait, FRDC. AFMA has committed \$450K per year to the Torres Strait Cooperative Research Centre (CRC) for research into the marine

environment, major commercial fisheries and traditional fishing in the Torres Strait. This arrangement is in place through to 2005/06.

**Issue: Bycatch species have been identified as being significantly impacted by fishing activity.**

*Strategy 3 – Implement management actions where appropriate to reduce bycatch taken within the Spanish mackerel and line fisheries.*

*Actions*

*Data Collection*

- Bycatch information from available sources will be collated and provided to the Finfish Working Group for consideration annually.

*Data Analysis*

- The Finfish Working Group will assess bycatch information provided to determine the likely impacts fishing activity may be having on bycatch species populations and habitats.

*Management Response*

- The Finfish Working Group will assess and implement as a priority, appropriate actions to address any bycatch issues identified.
- Through the Finfish Working Group, Industry will develop and implement fishery code of practice to minimise the incidental capture of protected species.

*Performance Indicators*

*Outputs*

- The Finfish Working Group assesses and implements appropriate actions to address identified bycatch issues.
- A fisher's code of conduct developed by industry and implemented to minimise the potential for incidental capture of protected species within 18 months of implementation of this BAP?

*Outcome*

- Bycatch is reduced.

*Funding*

- Through existing salaries budget and Finfish Working Group budget.

## COMMUNICATION STRATEGY

**Issue: Communicating the Bycatch Action Plan to industry.**

*Strategy 4 – Communication and Extension*

## ***Actions***

### ***Management Response***

- Distribute the BAP to operators in the Finfish Fishery to encourage greater awareness of the bycatch issues and the need to record bycatch information.
- Develop handout which includes relevant information on bycatch issues including bird and other wildlife recovery procedures.
- Undertake island community extension program with the aim to educate as to the positive benefits arising from the recording of fisheries catch data with particular focus on interactions with wildlife including turtle recovery information.
- Ensure that any research proposals include a component for extension and communication of results to all user groups.

### ***Performance Indicators***

#### ***Outputs***

- Within one year of revising the BAP, measures to communicate the BAP to industry are in place.
- All fishers have been provided with a copy of the handout.
- Island community extension program conducted and information on dugong and turtle recovery distributed.
- All approved research proposals have an extension component.

#### ***Outcome***

- There is increased industry awareness about BAPs and their aims.

## ***Funding***

Most of the costs associated with this strategy can be covered within exist salaries budget. Some additional costs will be incurred as a result of printing and travel costs (some savings may be made by incorporating travel with other travel requirements).

## **PRIORITIES**

1. Continue collection and analysis of data.
2. Monitor bycatch levels and composition.
3. Encourage research.

## **PROGRESS REPORTS AND REVIEW**

***Strategy 5 – Conduct biennial review of the Bycatch Action Plan***

The Finfish Working Group will provide the Environment Committee with six-monthly reports. The format for the progress report will follow that endorsed by the Environment Committee in August 2004. The report format requires the Working Group to suggest alternative approaches when strategies have not been implemented if for example research funding has not been provided. The reports will be publicly available once considered by the Environment Committee.

A full review of the BAP will be undertaken in 2007.

## **FURTHER INFORMATION SOURCES**

- AFMA, *Torres Strait Finfish Fishery Draft Strategic Assessment Report*. Australian Fisheries Management Authority, Canberra.
- AFMA, *Torres Strait Protected Zone Joint Authority Annual Report 2001-02*, Australian Fisheries Management Authority, Canberra.
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