



Australian Government

Australian Fisheries Management Authority

# AFMA submission for Reassessment of the Skipjack Tuna Fishery 2011



September 2011

This report has been prepared by AFMA for consideration by the Department of Sustainability, Environment, Population and Communities in relation to an approved Wildlife Trade Operation under the *Environment Protection and Biodiversity Act 1999*.

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## Introduction

This assessment covers fishing methods in the Skipjack Tuna Fishery (STF) by purse seine and minor line. The STF was declared an approved Wildlife Trade Operation (WTO) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 27 November 2008 for a period of 3 years (to 30 November 2011). A copy of the letter to AFMA, including conditions and recommendations can be found at the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) website.

Under Condition 3 of the EPBC Act approved Wildlife Trade Operation AFMA is to produce and present reports to SEWPaC annually as per Appendix B to the *Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition*.

Management arrangements have varied minimally in the STF since the opening of the fishery. In 2009 AFMA implemented some changes to permit conditions in the Eastern Skipjack Tuna Fishery (ESTF) in response to management measures implemented by the Western and Central Pacific Fisheries Commission (WCPFC). These conditions included net size restrictions, banning of deployment or fishing around Fish Aggregating Devices, all vessels fishing for Skipjack on the high seas must be in the WCPFC vessel register, the prohibition of transshipment at sea, and the closure of high seas pockets wholly enclosed by Exclusive Economic Zones. These changes are discussed in section 1.2 of this report.

## 1 Description of the fishery

Skipjack tuna (*Katsuwonus pelamis*) are widely distributed throughout tropical waters of the Indian Ocean and Pacific Ocean. The Australian fishing zone (AFZ) is at the southern end of their range. Skipjack distribution in the AFZ on the east coast is from far north Queensland to Tasmania, excluding the Great Barrier Reef, off southern Australia from Kangaroo Island in the Great Australian Bight, and up the west coast to Broome.

**Table 1: Statistics and facts of the STF**

At a glance	
<b>Principal species</b>	Skipjack tuna ( <i>Katsuwonus pelamis</i> ) is the only target species in the fishery. The landings of species other than skipjack (which may include bigeye and yellowfin tuna, frigate mackerel, sharks, mahi mahi, rays and marlins) are believed to be much less than 2% of the total landings.
<b>Fishing techniques</b>	Purse Seine and Pole and line are the two fishing techniques applied in the fishery. Purse Seine makes up the majority of the catch however neither method has been used extensively in the fishery since 2002.
<b>Number of Permits</b>	There are 18 holders of Eastern Skipjack Tuna Fishery (ESTF) permits and 14 holders of Western Skipjack Tuna Fishery (WSTF) permits.
<b>Estimated catch and value</b>	The value and catch of the STF is low and variable. The total annual value of the fishery ranged from \$0 to \$8.1m since 2000.
<b>Main markets</b>	Skipjack tuna taken in Australian waters were supplied almost exclusively to a cannery in Port Lincoln. The cannery closed in 2010 as the extremely low catches of skipjack deemed the cannery unprofitable.
<b>Stock status</b>	Not overfished and not subject to overfishing (BRS, 2009)

	<p>A stock assessment for skipjack tuna in the Western and Central Pacific Ocean (WCPO) was carried out in 2010. The stock assessment indicated that for the broader WCPO, skipjack is currently exploited at a moderate level relative to its biological potential.</p> <p>The Indian Ocean Tuna Commission (IOTC) Working Party on Tropical Tunas has not made any specific management recommendations for the skipjack stock. A stock assessment will be conducted in 2012. Current information suggests that there is no need for immediate concern about the status of skipjack tuna in the Indian Ocean.</p>
<b>Global fisheries</b>	<p>Global catches of skipjack tuna have increased steadily since 1950. Skipjack has been the dominant species caught in the WCPO for the past decade, making up over two thirds of the total tuna catch. The 2007 skipjack catch in the WCPO was the highest on record at 1.71 million tonnes (BRS, 2009).</p> <p>In the Indian Ocean, skipjack catches have exceeded 400,000 tonnes each year since 1999 and it has become the most important tuna species in this region. Skipjack catches peaked in 2006 at 605,980 tonnes (BRS, 2009). A large proportion of skipjack caught by purse seiners is taken under fish aggregating devices.</p>
<b>Consultative Mechanism</b>	<p>The Tropical Tuna Resource Assessment Group (TTRAG) and the Tropical Tuna Management Advisory Committee (TTMAC).</p>

## 1.1 Target and by-product species

Skipjack tuna is the only target species in the STF. By-product species include Bigeye tuna, Yellowfin tuna, Southern Bluefin tuna (SBT), Frigate mackerel, sharks, Mahi Mahi, rays and marlins. Bigeye tuna and Yellowfin tuna are managed under the *Eastern Tuna and Billfish Fishery Management Plan 2010* and the *Western Tuna and Billfish Fishery Management Plan 2005*. SBT is formally managed under the *Southern Bluefin Tuna Fishery Management Plan 1995*.

An overview of skipjack fisheries and by-product species can be found in the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES, previously Bureau of Rural Sciences, BRS) Fishery Status Reports.

## 1.2 Management arrangements employed in the Fishery

The ESTF and WSTF are managed through a permit system. Permits are issued to operators on an annual basis. The fishing season extends from 1 July to 30 June each year, however AFMA is looking to change the season dates to align with the Eastern Tuna and Billfish Fishery (ETBF) season dates of 1 March to 28 or 29 February each year. There are currently no catch or effort limits for skipjack tuna as the resource is considered to be underfished at present levels. However, if catch and effort intensity changes significantly, AFMA will review the issues and implement the appropriate alternative management regimes.

The following management arrangements apply to the STF:

- entry limited to holders of 12 month, transferable permits;
- operations limited to fishing zones within the two fisheries as specified on permits;
- operations limited to the purse seine fishing method;

- 
- operations limited to target species as specified on permits and incidental catch restrictions as specified on permits;
  - catch of Yellowfin tuna and Bigeye tuna (total combined live weight) is limited to a seasonal catch of 2% of the total live weight of skipjack tuna taken and a trip limit of 50% of the skipjack live weight;
  - Blue and Black marlin must be returned to the sea;
  - a maximum trip limit of 20 sharks (shark carcasses must be landed with fins attached);
  - dimensions of purse seine nets are fixed, unless approval is gained from AFMA; and
  - all purse seine operators must complete the PS01 Australian Purse Seine Daily Fishing Log.

#### Changes to ESTF permit conditions

- Net size restrictions

Previously there were many net sizes authorised on Attachment A of the Eastern Skipjack permit conditions. In the amended conditions, the net size has been standardised across all permits. Nets are not to exceed 1480 x 280 metres or 810 x 153 fathoms.

- Preventing fishing around Fish Aggregating Devices (FADs) for Purse Seine operators in the ESTF

The ESTF permit conditions prohibit purse seine operators north of the latitude of 20°S from deploying or fishing around FADs. Australia has submitted a Fleet Development Plan to the WCPFC agreeing to extend the prohibition to the entire area of the ESTF.

The new permit conditions will prevent operators from deploying or fishing around FADs across the entire area of the Eastern Skipjack fishery, with 100% observer coverage required when operating north of 20°S.

- Registering on WCPFC vessel register to fish on the High Seas

WCPFC Conservation and Management Measure (CMM) 2004-01 requires all Australian vessels fishing on the high seas in the WCPFC Convention area to be registered on the WCPFC vessel register. AFMA has amended Section 8(b) of the permit conditions requiring all vessels on the high seas to ensure their vessel is registered on the WCPFC vessel register (<http://www.wcpfc.int/vrecord>) prior to entering the high seas.

- Transshipping by Purse Seiners prohibited

Transshipping by purse seine vessels is prohibited under the WCPFC convention. AFMA has amended the Skipjack permit conditions to prohibit purse seine vessels transshipping at sea to ensure compliance with the provisions of the WCPFC convention.

- Closing high-seas pockets

In 2008, the WCPFC agreed to close high-seas pockets that are wholly enclosed by Exclusive Economic Zones (EEZs) between 20°N and 20°S. These pockets are highlighted in Figure 1. The relevant co-ordinates of these closures are included in the amended area of waters of the ESTF fishing permit.



- Prohibiting setting on Data Buoys

Between 2009 and 2011, the WCPFC and the Indian Ocean Tuna Commission (IOTC) implemented measures to prohibit intentional fishing within one nautical mile of data buoys in the Western and Central Pacific and in Indian Ocean waters respectively. Australia have implemented these measures in the ESTF and the WSTF.

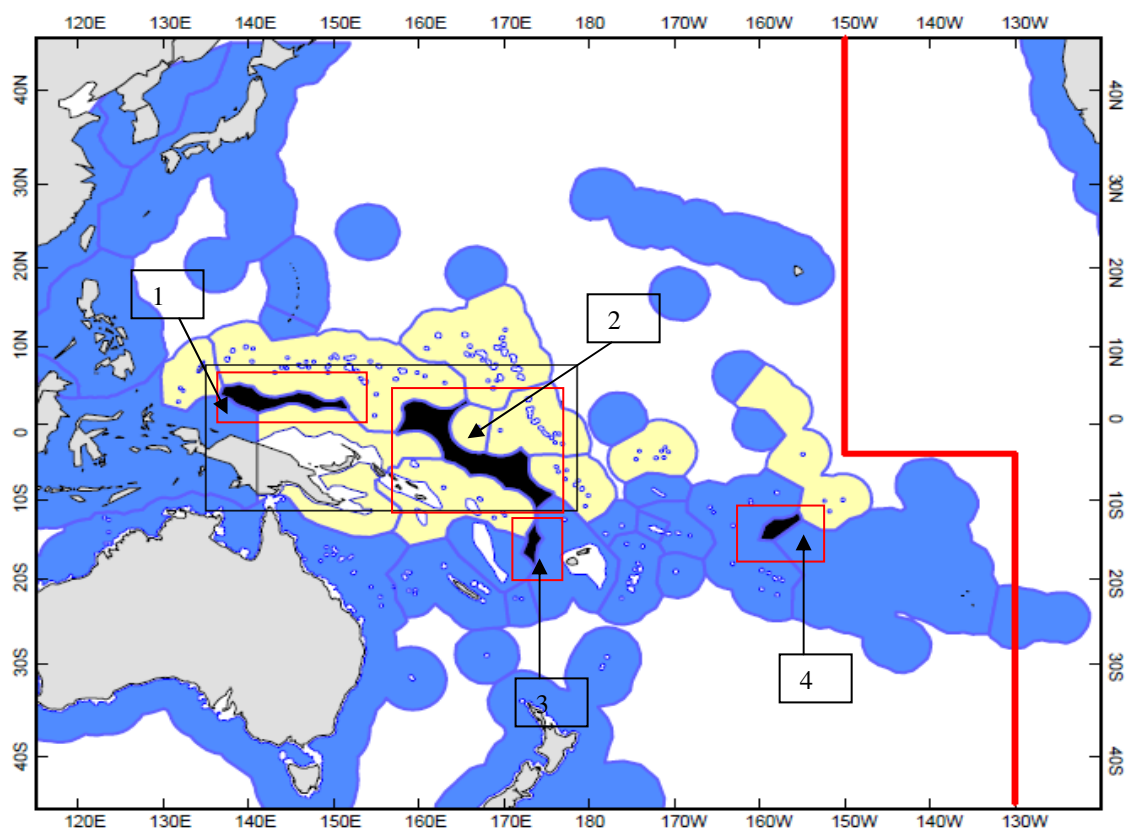
- Prohibiting the retaining of live thresher sharks

In 2010 the IOTC adopted Resolution 10/12 on the Conservation of Thresher Sharks Caught in Association with Fisheries in the IOTC Area of Competence. AFMA have amended the WSTF permit conditions to ensure the vessels must promptly release unharmed thresher sharks when brought along side the vessel and record all incidental catches as well as live releases.

- Closure off the coast of Somalia

In March 2010, the IOTC adopted Resolution 10/01 which prohibits IOTC authorised fishing vessels from fishing in the area defined by coordinates; 0° - 10° North and 40° - 60° East. The closure is effective for purse seine vessels from 0000 hours on 1 November to 2400 hours on 1 December every year.

The intent of the resolution is to decrease pressure on the main targeted stocks and in particular on the Yellowfin tuna and Bigeye tuna in the IOTC area of competence for 2011 and 2012. This does not affect the Skipjack fishing operation.



**Figure 1: Map of the four high seas pocket area closures**

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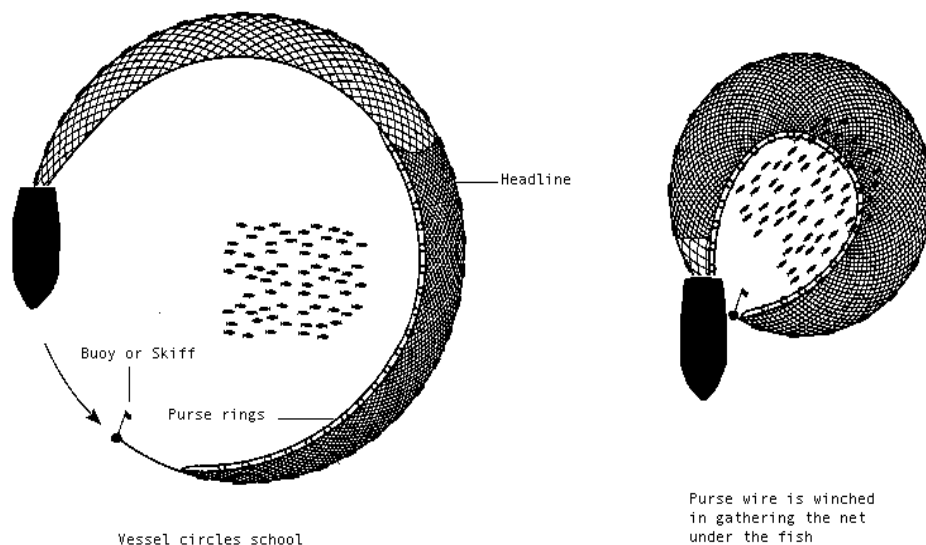
### 1.3 Fishing methods employed

The principal methods used to commercially take skipjack tuna are purse seine fishing or using pole and line.

#### Purse seine

Purse seining is a method in which a large net is used to encircle surface schools of pelagic fish. When deployed a purse seine net extends like a curtain from its float line on the surface to a depth of 80 to 350 metres. The purse line (heavy wire warp) runs through purse rings attached to the footrope of the net. The net is deployed from the purse seine vessel using either a drogue (sea anchor) or powerful skiff to hold one end in position while the vessel steams around the school of fish releasing the rest of the net. The master finishes shooting the net close to the other end so that the gap can be closed quickly (pursing the net) thus capturing the school of fish (Figure 2). For skipjack tuna the net is gradually hauled on board concentrating the fish so that they can be brailled (scooped) on board.

Purse seining is selective both by use and design. Given the use of accurate echo sounders, spotting planes and increasing knowledge of species behaviour, skippers are usually able to identify the size of a school and estimate the size of fish in the school. Because uniform schools of fish are targeted, the purse seine method is considered to be a highly size and species selective method. Furthermore, although purse seining is an 'active' fishing method, minimal habitat impacts occurs as no contact is made with the substrate.



**Figure 2: Purse seine fishing method (Kailola et al, 1993)**

#### Pole and Line

Poling is the method where fish are captured individually using short poles with a line and baited barbless hook or lure (Figure 3). Live bait and fine water sprays are used to simulate baitfish activity. Poling methods are used to target varying sizes of surface schooling skipjack tuna.

Poling is extremely selective as the vessel will either search for or attract specific target species through distributing burly into the water. Pole operators frequently work in collaboration with purse seine operations but make up a small part of the total effort.

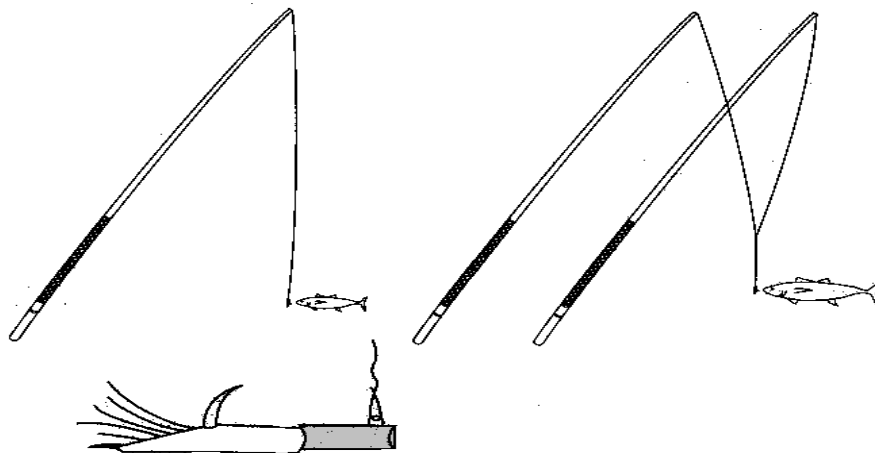


Figure 3: Pole and line gear (AFMA, 2001)

## Fishing area

The skipjack tuna fishery is comprised of the Eastern Skipjack Tuna Fishery (ESTF) and the Western Skipjack Tuna Fishery (WSTF). The area encompassed incorporates the entire AFZ including waters around Norfolk and Christmas and Cocos (Keeling) Islands, but excluding Heard Island, McDonald Islands and Macquarie Island. The main areas for skipjack fishing inside the AFZ are shown in figure 4.

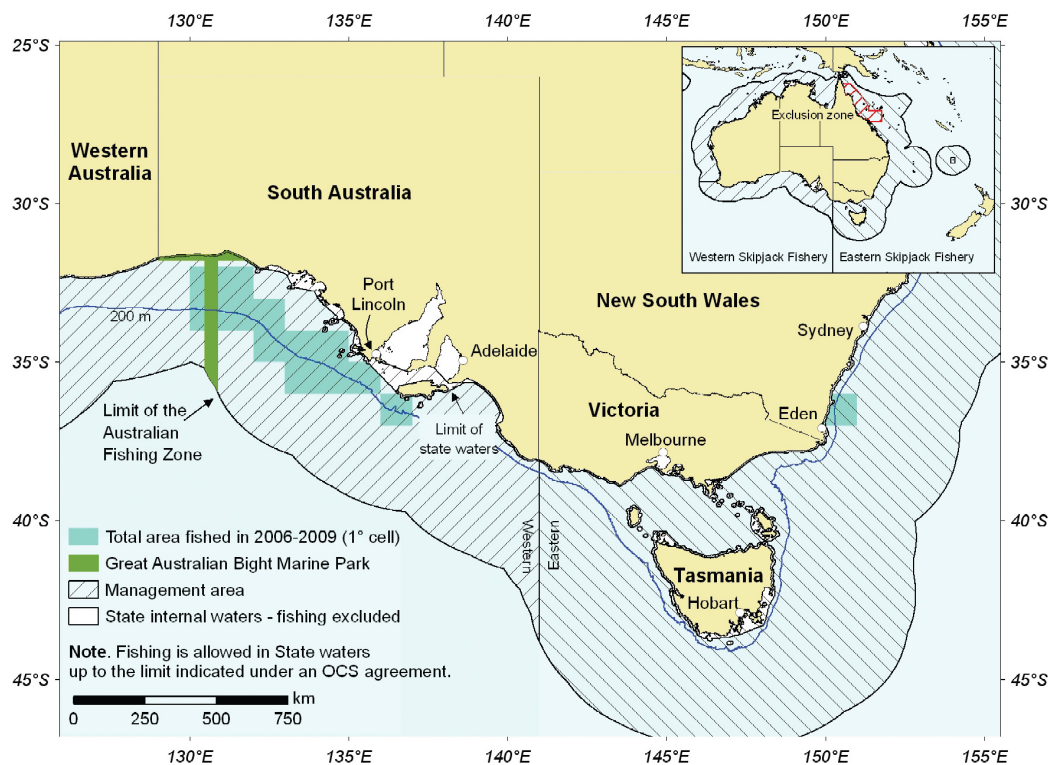
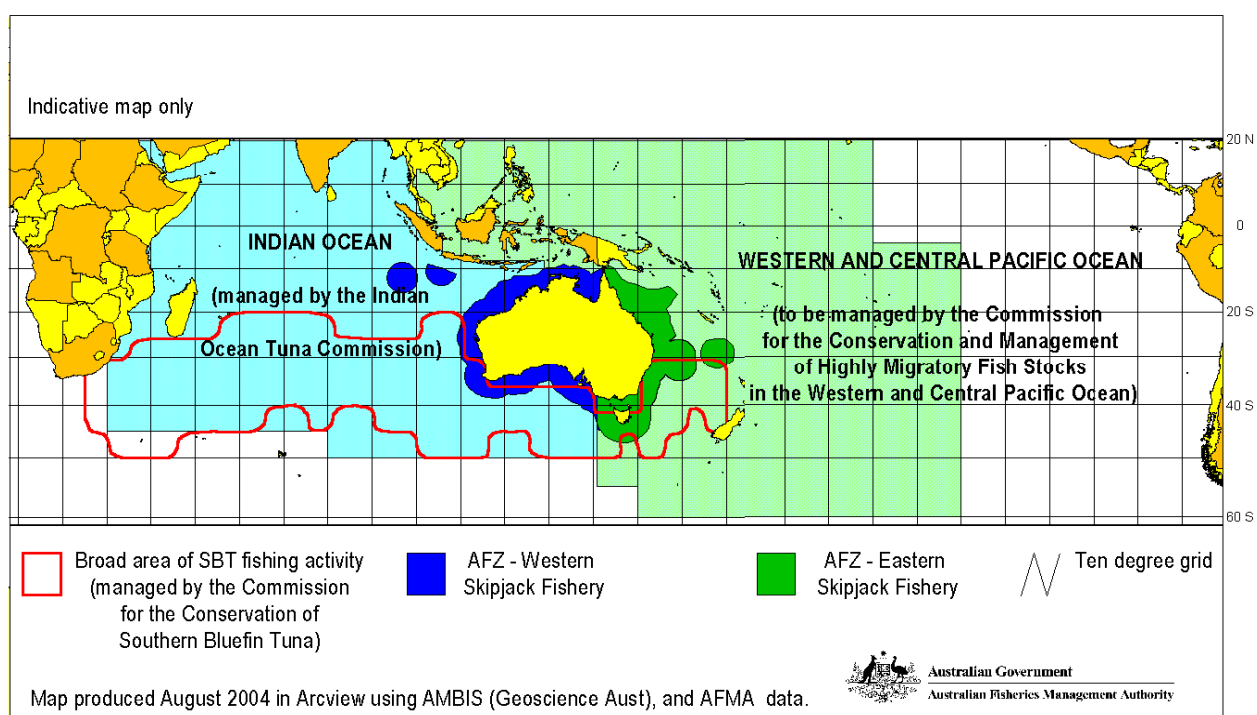


Figure 4: Generalised fishing areas in the domestic Skipjack Tuna Fishery (BRS 2009)



The areas of competence for both the IOTC and WCPFC are shown in Figure 5.



**Figure 5: International management areas for skipjack tuna**

## 1.5 Allocation between sectors

There are currently a total of 32 Commonwealth tuna purse seine permits in the fishery. The permits are owned by 18 permit holders, of whom seven hold permits for both the ESTF and WSTF. Table 2 shows the number of active fishing vessels in the ESTF and WSTF.

**Table 2: Number of domestic vessels recording skipjack catch pole and purse seine since 2004**

Year	Eastern skipjack tuna fishery		Western skipjack tuna fishery	
	Pole	Purse seine	Pole	Purse seine
2004	1	3	-	1
2005	-	-	-	-
2006	-	2	-	3
2007	-	-	-	1
2008	-	-	-	2
2009	-	-	-	2
2010	-	-	-	-

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Allocation for the take of skipjack by state operators are as follows:

- New South Wales operators can take unlimited quantities of skipjack tuna inside three nautical miles by any method.
- Tasmanian operators are allowed to take up to 10 fish or 40kg, whichever is greater, of any one or a combination of skipjack tuna, albacore tuna, longtail tuna and Ray's bream per trip.
- Victorian and South Australian operators can take up to 10 fish of any one or a combination of skipjack tuna, albacore tuna, longtail tuna and pomfrets per trip.
- Western Australian operators can take up to 10 fish of any one or a combination of skipjack tuna, albacore tuna and longtail tuna
- Northern Territory operators can take up to 10 fish of any one or a combination of skipjack tuna, albacore tuna or pomfrets per trip.

Recreational anglers in New South Wales, Queensland, Western Australia and South Australia have unlimited access to skipjack tuna. A possession limit of 30 non-managed fish (including skipjack tuna) applies in the Northern Territory and a combined possession limit of 45 scalefish (excluding baitfish, redbait, jack mackerel and blue mackerel) exists in Tasmania.

## **1.6 Governing legislation/fishing authority**

All fisheries are managed under the *Fisheries Management Act 1991*. The ESTF and WSTF are currently managed through a permit system. AFMA issue Fishing Permits to operators on an annual basis. The fishing season extends from 1 July to 30 June each year.

Australian commitments and obligations under the WCPFC and IOTC are incorporated as conditions on Fishing Permits.

## **1.7 Status of export approval/accreditation under the *Environment Protection and Biodiversity Act 1999*.**

The STF was declared an approved Wildlife Trade Operation (WTO) under the EPBC Act on 27 November 2008 for a period of three years to 30 November 2011. AFMA intend to renew the WTO accreditation period in 2011 with the formal submission of this document.

# **2 Management**

## **2.1 Changes to management arrangements**

The ESTF and WSTF continue to be managed through an annual permit system. AFMA allocated Statutory Fishing Rights under ETBF and WTBF Management Plans in May 2011.

Australia are looking to align the Eastern Skipjack fishing season dates with the Eastern Tuna and Billfish Fishery season dates of 1 March to the last day of February each year.

Please refer to Section 1.2 of this report for further information regarding recent changes in management arrangements and permit conditions.

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## **2.2 A statement of the performance of the fishery against objectives, performance indicators and performance measures.**

AFMA measure each Commonwealth fishery against the adherence and implementation of management arrangements and the Management Plan, Bycatch and Discards Workplan, Harvest Strategy, and the Ecological Risk Assessment. In 2010/11 the STF met all the above-mentioned performance measures.

## **2.3 Compliance risks present in the fishery and actions taken to reduce these risks**

AFMA Compliance use a range of tools to gather intelligence and conduct routine surveillance, such as Integrated Computer Vessel Monitoring Systems (ICVMS) which provide real time position reports from Commonwealth fishing vessels in the AFZ. Compliance monitoring programs also include the use of fish receiver records and vessel inspections.

Given the low levels of activity, a formal compliance risk assessment has not been undertaken for the fishery. AFMA consider the use of these compliance tools to be adequate to monitor activity in the fishery. AFMA compliance have completed a risk assessment for all Commonwealth fisheries. No vessels licensed to fish in the Skipjack fishery were presented as high risk.

## **2.4 Consultation processes**

The Tropical Tuna Management Advisory Committee (TTMAC) is the key advisory committee for management of the STF domestic fishery. The TTMAC membership is drawn from AFMA, scientific agencies, a conservation NGO, and the industry sector. Representatives from the state fisheries agencies, the recreational/charter fishing sectors and invited industry participants have permanent observer status at TTMAC meetings. Agencies such as the Department of Agriculture, Fisheries and Forestry (DAFF), SEWPaC and ABARES may also attend TTMAC as observers.

## **2.5 Description of cross-jurisdictional management arrangements**

The Australian and state/territory governments have negotiated Offshore Constitutional Settlement (OCS) arrangements, which rationalise management, generally on a species basis. Under the terms of these arrangements, the states and the Northern Territory generally manage coastal and slow moving species in the inshore areas of the AFZ while the Australian Government manages deepwater and migratory species.

The Australian Government has reached agreement under OCS on jurisdiction over commercial tuna fisheries with the states and the Northern Territory. Under these agreements the Australian Government manages commercial fishing for tuna and tuna like species between the shoreline and three nautical miles. NSW manages tuna and tuna like species in the area of their jurisdiction, between the shoreline and three nautical miles. This means that while state operators in other states and the Northern Territory are limited under the OCS to only a bycatch of tuna and tuna-like species taken in the ESTF, NSW state operators are limited by NSW Fisheries legislation inside three nautical miles.

The ESTF and WSTF are also subject to management arrangements that are implemented in the WCPFC and IOTC respectively. These management arrangements are explained further in Section 2.6 of this report.

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## 2.6 Demonstration of compliance with Threat Abatement Plans, recovery plans, and relevant domestic and international agreements

### *Domestic recovery plans*

As the ESTF and WSTF is currently assessed as not overfished or subject to overfishing (BRS, 2009), there are no specific threat abatement or recovery plans implemented in this fishery. However, Australia is an active Member of the IOTC and WCPFC, and is therefore bound to the conservation and management measures (CMMs) adopted by those Regional Fisheries Management Organisations (RFMOs) in relation to Skipjack and other tuna purse seine fisheries.

### *Pacific Ocean*

Australia has been an active participant in the WCPFC since it was established in 2004. The main objective of the WCPFC is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the WCPO in accordance with the United Nations Convention on the Law of the Sea (UNCLOS) and the United Nations Fish Stocks Agreement (UNFSA).

Skipjack tuna is a key species managed by the WCPFC. The WCPFC aims to allow for the control of regional levels of fishing activities and a regional approach to monitoring, data collection, research and assessment.

Australia comply with the convention through incorporating provisions of the WCPFC CMMs to Skipjack permit conditions and relevant AFMA policies, procedures and guidelines. A recent example of this is in 2009 when the Skipjack permit conditions were changed to ensure compliance with the new CMMs.

Australia also report to the WCPFC every year on compliance with each of the CMMS under Part 2 of the Annual Report to the WCPFC.

Australia also actively participates, and provides input, data and advice through series of forums that aim to exchange information on regional fisheries issues, to ensure regional fish stocks are managed sustainably. AFMA's sharing of this information is under international obligations. Such forums include the South Pacific Forum Fisheries Committee, and the Oceanic Fisheries Program of the Secretariat of the Pacific Community.

### *Indian Ocean*

Australia is a member of the IOTC which manages skipjack tuna stocks in the Indian Ocean. The IOTC has not introduced any management measures for skipjack tuna. The priority for skipjack in the Indian Ocean is to gain a better understanding of stock structure and status. The IOTC's Working Party on Tropical Tunas (WPTT) oversees the status of the skipjack tuna and other tuna species in the Indian Ocean.

The IOTC noted at its 2010 October meeting that, although skipjack tuna have resilient life history characteristics of rapid growth, early maturation and high reproductive potential, these characteristics do not exclude the possibility for skipjack to become overfished. Skipjack stock is being monitored in certain fisheries within the IOTC convention area and the WPTT recommended that attempts should be made to assess the status of the stock in 2011-12.

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Australia aim to comply with each of the CMMs implemented by the IOTC. Australia shares information on protected species interactions, stock status and vessel information with the IOTC secretariat. Australia also report to the IOTC every year on compliance with each of the CMMS as part of our annual reporting requirements to IOTC.

## **3 Research and Monitoring**

### **3.1 Results of any research completed relevant to the fishery, including how results will be incorporated into management of the fishery**

Skipjack tuna research and stock assessments in the WCPFC and IOTC convention areas are done at a regional level. Australian scientists actively participate in the Committees and Working Parties of these RFMOs.

The Standing Committee on Tuna and Billfish (SCTB), under the Secretariat of the Pacific Community (SPC), provides a forum for scientists and others with an interest in the WCPO tuna stocks to meet to discuss scientific issues related to data, research and stock assessment. The SCTB then provides scientific advice on stock status, including skipjack tuna, to the WCPFC.

The principal forum for consideration of research on Indian Ocean tuna and billfish stocks and their associated fisheries is the IOTC Scientific Committee. The Scientific Committee draws on the available expertise from the range of member states to the Commission. The Scientific Committee meets prior to the IOTC's annual sessions and reports on findings and makes recommendations to the Commission. The Scientific Committee administers several working parties including the WPTT which includes skipjack tuna.

### **3.2 Description of monitoring programs used to gather information on the fishery**

The domestic and international STF data collection, research and monitoring are summarised in Table 3. Logbook records are the main source of data. STF operators are required to complete the PS01 catch and effort logbook which records details on catch, effort, bait and gear as well as target, by-product and bycatch species, and wildlife interactions. The published information available on the purse seine and pole fishery is limited by the need to protect confidentiality of the relatively small number of active operators.

AFMA data collection for the STF is mostly fisheries dependent due to the extensive area of waters and the migratory nature of skipjack tuna. However, some fishery independent studies have been undertaken and others are underway.

Australia is also moving to an e- monitoring program to collect data using onboard cameras, which will be implemented into the ETBF longline fishery in 2012. This will assist in data collection for Skipjack caught on longlines in the ETBF. Information not collected by the cameras include lengths, sexes, tag recovery information, vessel and gear details and vessel and aircraft activity. AFMA will use other options to ensure this information is adequately collected, including port monitoring and gear surveys.



### 3.3 Results of any collaborative research undertaken for the fishery

Australia collaborates with, and participates in, the Scientific Committees of the IOTC and WCPFC which discuss the research needs for each fishery. Current collaborative research includes regional tuna tagging programs in the Indian Ocean and WCPO. The results are used in the regional stock assessments.

**Table 3: Summary of data collection research and monitoring for the Skipjack Tuna Fishery**

Description	Fishery dependent or independent	Information collected	Collection frequency	Provided to
Logbooks: AL05 – longline and some minor line sectors PSO1 – purse seine & pole sector OT03 - minor line sector	Fishery dependent	Shot by shot data on: - fishing effort - catch estimates of Schedule 4 & bycatch species	Ongoing - every shot	AFMA & CSIRO for stock monitoring purposes
SPC information collection from coastal states	Fishery dependent	Catch data from SPC coastal states and FFA observer programs	Ongoing	SPC, AFMA & CSIRO for stock monitoring. WCPFC will incorporate this data to form scientific advice
IOTC mandatory statistical requirements and information on observer programs from member countries	Fishery dependent	A range of scientific fisheries data and verified catch data	Ongoing reporting requirements	AFMA, CSIRO, ABARES, IOTC
Tagging programs	Fishery dependent	Indian Ocean Tuna Tagging program including skipjack	IOTC program under way	IOTC
		Skipjack tuna were tagged in the western tropical Pacific, in as part of the SPC Regional Tuna Tagging Program.	1991, 1992, and 2007. Data collected continuously	Results incorporated into the SPC assessment model for skipjack
Tagging Programs (cont)		Japan Marine Resources Research Centre (JAMARC) tagging programs for tuna species inc. skipjack in the eastern and western Indian Ocean for 21 years).	Continuous	Results from program considered in IOTC assessments of stock status for these species
Vessel monitoring system	Fishery dependent	Vessel position & electronic notification when vessel is nearby/ entering port	Continuous	AFMA

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Description	Fishery dependent or independent	Information collected	Collection frequency	Provided to
Flight logs from industry spotter planes	Fishery dependent	Species composition and location. Weather conditions	Ad hoc –align with operational needs	Industry for information. Available to AFMA on request.
<i>Gamefish Tagging Program</i>	Fishery dependent	The main species tagged include black, blue and striped marlin, swordfish, tunas, sharks and other pelagic species	Commenced in 1974 and ongoing.	CSIRO, AFMA, WCPFC and IOTC
IOTC WPTT application of various indices of environmental variability	Fishery independent	Environmental factors to explain large-scale events and associated environmental fluctuations that affect catchability, local abundance, spatial-temporal distribution and recruitment.	Completed	IOTC

## 4 Catch data

### 4.1 Total catch of target species

Domestically, skipjack tuna has historically been caught as both target and incidental catch by commercial fishers in the ETBF and WTBF. Skipjack tuna are also caught in a number of state fisheries and Commonwealth fisheries, however these catches make up a small component of the total catch. The total skipjack tuna catch reported in Commonwealth logbooks in the period 2000 – 2010 is shown in Table 4 on the following page. The bulk of the commercial catch is taken by purse seine and pole with a majority of the catch taken in the WSTF in recent times.

**Table 4: Annual domestic skipjack tuna catch in the Australian domestic fisheries in kilograms (source: AFMA logbooks).**

(Note: Prior to 2004/05 the Eastern and Western Skipjack fisheries formed part of the Eastern and Western Tuna and Billfish fisheries respectively)

<b>Fishery</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
Eastern Skipjack							44,000				
Western Skipjack							446,000		877,000	855,000	
Eastern Tuna and Billfish	3,890,896	1,176,739	1,054,708	600,200	184,271	3,078	50,351	13,409	31,141	12,240	3,450
Western Tuna and Billfish	9	20	190,115	52	30,038		13	9		29	5
Southern Bluefin Tuna		300	8			330	5				
Commonwealth Trawl Sector			10				30				90
Great Australian Bight		80							110		
Gillnet Hook and Trap	21	10					104	17	13	401	75
Small Pelagics								90,000	15,200		
<b>Total Domestic Catch</b>	<b>3,890,926</b>	<b>1,177,149</b>	<b>1,244,841</b>	<b>600,252</b>	<b>214,309</b>	<b>3,408</b>	<b>540,503</b>	<b>103,435</b>	<b>923,464</b>	<b>867,670</b>	<b>3,620</b>

## 4.2 Total catch of target species taken in other fisheries

Table 5 shows the estimated skipjack tuna catch in tonnes from the area of waters covered by the WCPFC and IOTC.

**Table 5: Regional estimated skipjack tuna catch since 2000 from WCPFC and IOTC data.**

Year	Western and Central Pacific Ocean (tonnes)	Indian Ocean (tonnes)
2000	1,178,230	431,000
2001	1,091,199	434,000
2002	1,272,959	498,000
2003	1,260,078	482,000
2004	1,351,854	465,000
2005	1,473,597	529,000
2006	1,479,600	612,900
2007	1,726,702	447,100
2008	1,634,617	447,100
2009	1,821,770	446,099
2010	1,706,166	417,353

## 4.3 Catch of byproduct and bycatch species

Australian purse seiners only target free-swimming schools dominated by skipjack as the use of FADs is banned in the STF. Reports from canneries, ABARES studies and AFMA logbook data indicate that the landings of species other than skipjack are extremely low (BRS, 2002). Table 6 shows the fish bycatch as reported in AFMA logbooks. Purse seiners in the STF may also catch sharks and, very rarely, seals and manta rays (both of which are easily released before the net is retrieved).

**Table 6: Bycatch from skipjack pole and purse seine fishers reported in AFMA logbooks.**

Year	Catch by species (kg)			
	Blue Mackerel	Yellowfin Tuna	Striped Marlin	Jack Mackerel
2000	530	4,750	-	-
2002	-	100	-	-
2003	-	-	-	-
2004	-	100	100	-
2005	-	-	-	-
2006	-	-	-	-
2007	-	-	-	-
2008	-	-	-	9,000
2009	-	-	-	-
2010	-	-	-	-

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These bycatch species are subject to various Commonwealth and state bycatch and management provisions that are outlined below:

**Southern Bluefin Tuna** – All catch is required to be covered by quota.

**Sharks** - STF operators are subject to a Commonwealth limit of 20 sharks per trip (excluding school, gummy, elephant fish of the species Callorhynchidae, Chimaeridae and Rhinochimaeridae, and sawshark).

**Marlin** – STF operators are required to return all Blue and Black marlin to the sea.

**Dolphinfish and Frigate mackerel** - STF operators are subject to a limit of 10 fish per trip (alone or in combination with a range of other finfish) in the waters of Queensland, Western Australia and the Northern Territory under OCS agreements with these states.

**Yellowfin and Bigeye Tuna** - Precautionary byproduct limits for Yellowfin tuna and Bigeye tuna are currently in force under fisheries permits. The total combined live weight of these two species may not amount to more than 50% of the purse seine catch in any one trip and 2% of the total weight of a vessel's seasonal skipjack tuna catch.

There are low levels of incidental bycatch during skipjack purse seine operations in the AFZ.

## 4.4 Harvest by each sector

Estimates of commercial catches are derived from logbooks from the STF. Tables 2, 4 and 5 summarise the domestic and regional skipjack catch by the commercial sector respectively.

Estimates of all catches are factored into regional stock assessments. It is recognised that there is some unreported and unregulated take from these stocks and, where possible, estimates of these removals are obtained from the vessels and their flag states.

While the IOTC has not yet undertaken a quantitative stock assessment for skipjack tuna in the Indian Ocean it has identified that the lack of data from artisanal catch of skipjack needs to be addressed and is encouraging improved data reporting from several regions.

Recreational and Indigenous take of skipjack tuna in the Australian fishery is not as well known, however it is estimated that the take is not significant in comparison to the Commonwealth catch of Skipjack. The main sources of data used to estimate recreational catches are gamefish tournament catch and effort monitoring, gamefish tagging, state charter fisheries management arrangements, and a national recreational and indigenous fishing survey in 2003.

## 4.5 Effort data including information on any trends

Effort within the Skipjack fishery has been very low since 2000, with generally less than 50 purse seine shots occurring in either sector since this time, and generally nil effort in the Eastern since 2006.

## 4.6 Spatial issues/trends

Skipjack taken in the main fishing grounds off southern Australia are considered to be at the fringe of the species' generally equatorial distribution and is extremely variable. As skipjack do not spawn in waters cooler than 25°C, skipjack off southern NSW and Tasmania must have recruited from lower latitudes.



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The most important determinants of annual abundance are considered to be sea surface temperature and the availability of prey species. The local abundance of prey is linked to warm eddies and oceanic fronts generated by the East Australian and Leeuwin Currents. Such conditions are, in turn, influenced by broad-scale oceanographic events such as El Nino Southern Oscillation episodes.

## **5 Status of target stock**

### **5.1 Resource concerns**

There are no resource concerns. Skipjack tuna is not overfished and not subject to overfishing in the WCPO and Indian Ocean (BRS, 2009).

### **5.2 Results of any stock assessments**

#### *Pacific Ocean*

The stock assessment undertaken by SPC provides a sound estimate of the potential productivity of skipjack tuna in the WCPO. The major conclusions on the status of the skipjack fishery from the 2011 stock assessment were essentially unchanged from the last five stock assessments in 2002, 2003, 2005; 2008; and that skipjack overfishing is not occurring in the WCPO nor is the stock in an overfished state. The assessment also states that recruitment variability, influenced by environmental conditions will continue to be the primary influence on stock size and fishery performance and that further analysis of growth data, tagging data and spill sampling work is required to gain a better of the stock.

#### *Indian Ocean*

No quantitative stock assessment is currently available for skipjack tuna in the Indian Ocean. The range of stock indicators available to the IOTC Scientific Committee does not signal that there are any problems in the fishery.

In December 2009, the scientific committee of the IOTC noted that skipjack catch cannot continue to increase at the current rate and as such suggested that there needs to be regular monitoring of this catch. In addition, a 2010 Skipjack stock assessment in the Maldives indicated that Skipjack stock in the Indian Ocean may be declining.

The 13th Session of the Scientific Committee (SC) in December 2010 strongly recommended that a formal assessment of the skipjack stock be a priority task at the next session of the Working Party on Tropical Tuna. The SC noted that the success of this assessment will depend on the preparation of realistic series of standardized CPUE for Maldivian pole and line fleet and for the European purse seine fleet.

The Secretariat has since prepared data for the skipjack tuna stock assessment including total catch and available length frequency data by fishery, year, and quarter. The stock assessment is expected to be completed in 2012.

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## 6 Interactions with protected species

### 6.1 Frequency and nature of interactions

The tuna purse seine operators in the STF rarely interact with protected species listed under the EPBC Act.. Although the true impacts of these interactions are unknown, AFMA suggest the frequency is very low due to the low amount of effort in the fishery.

The Australian Southern Bluefin Tuna (SBT) Fishery is the other Australian tuna purse seine fishery. Therefore, this data is used below to understand protected species interactions with Tuna purse seine operations.

#### *Domestic purse seine fishery*

**Marine Turtles** – There are no interactions with marine turtles that have been recorded in logbooks for tuna purse seine operations within the AFZ.

**Seabirds** – The configuration of the purse seine fishing gear makes the likelihood of interactions with seabirds minimal. Since 2000, observer records in the SBT purse seine fishery indicate seven interactions with seabirds, two of which were fatal. The two fatal observations were of an unidentified shearwater that was observed floating dead on the water and a storm petrel that flew into the boat and died.

**Sharks** – Great white sharks (*Carcharodon carcharias*) are protected in Commonwealth waters under the EPBC Act. To date there have not been any verified reports of great white sharks interacting with either SBT purse seine nets or tow nets, or with skipjack purse seine nets.

Recovery plans are in place for great white sharks and AFMA is committed to implementing relevant measures. Australia has developed a National Plan of Action (NPOA) for the Conservation and Management of Sharks. Management of shark bycatch in Commonwealth tuna fisheries is consistent with the objectives of the NPOA.

**Cetaceans and other marine mammals** – The ERA process was completed in March 2010 and 25 species of marine mammal were found to be at the high risk level to the effects of skipjack fisheries (Refer to section 7.1). However, there have been no logbook or observer reports of purse seine interactions with cetaceans or dolphins in tuna purse seine fisheries. This is likely due to a lack of verified data, which is due to the low levels of effort within the fishery. AFMA will continue to monitor the effort in skipjack fisheries and alter levels of observer data collection as required.

**Ecological communities** – To date no marine ecological communities have been listed as threatened under the EPBC Act.

#### *Pacific Ocean*

In response to the need to improve the understanding and management of interactions with protected species the Scientific Committee of the WCPFC has established an Ecosystem and Bycatch Specialist Working Group.

A review of ecosystem and bycatch issues undertaken for the WCPFC in 2002 found that in the broader WCPO purse seine and pole and line fisheries:

- definitive estimates of bycatch are precluded by poor logbook reporting of bycatch and discards and generally low observer coverage;

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- the biology and population dynamics of nearly all bycatch species are poorly known, and such that impacts of fishing on bycatch species cannot be assessed;
  - the available data provides no evidence of seabirds taken in purse seine operations;
  - purse seines occasionally catch marine turtles, most commonly when fishing on FADs; but the majority of turtles are released alive. Preliminary estimates suggest 105 marine turtle encounters per year in the WCPO purse seine fishery, and it is expected that less than 20 of these would result in mortality;
  - there is little evidence that dolphin-associated sets are made by purse seiners in the SPC area; and
  - observer data indicate that a very small percentage (around 0.15% by weight) of the purse seine catch is made up of shark. There is very little data available at a species level however at least 10 species have been observed. The predominant shark species observed in the WTP purse seine fishery are the silky shark and the oceanic white tip.

These observations are generally consistent with the logbook data for the purse seine skipjack fishery in the ETBF and with ABARES assessment of bycatch issues in this fishery (BRS, 2009).

The Ecosystem and Bycatch Specialist Working Group recommended that efforts be made to improve observer coverage in the WCPO to obtain more reliable statistics on bycatch and to permit risk analysis on bycatch species, including TEP species.

At the WCPFC Scientific Committee in 2010, the International Seafood Sustainability Foundation (ISSF) also announced that there were developing a research program to develop and test technical options to reduce the incidental mortality oceanic sharks and marine turtles in tropical purse seine fisheries.

### **Indian Ocean**

In response to the need to improve the understanding and management of bycatch, including TEP species, the Scientific Committee of the IOTC has also established a Working Party on Ecosystems and Bycatch. At the 2010 meeting, the WPEB:

- recommended that the ERAs on bycatch of sharks in the purse-seine fishery should be updated for 2011 and that an ERA should be undertaken on sea turtle bycatch within the purse-seine fishery,
- noted that relatively few turtles were caught during purse seine setting operations, and most were released alive. There was an issue that turtles were being entangled and dying on the FADs themselves and many countries are trialling various FAD designs to mitigate this, and
- requested that data on purse seine interactions with on seabirds and cetaceans be collected through the ISSF research program mentioned above.

## **6.2 Management action taken to reduce interactions and results of such action**

All interactions with listed protected species must be reported by fishers in their logbook and submitted to AFMA. AFMA provides quarterly summary reports of all interactions in Commonwealth fisheries, on behalf of fishers to SEWPaC. These reports can be accessed on the AFMA website. AFMA also conduct educational programs held in the port to remind concession holders of their obligations in relation to interactions with protected species.

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These educational programs were run in 2009, 2010 and 2011. AFMA has received very positive feedback from industry on these educational programs.

## 7 Impacts of the fishery on the ecosystem in which it operates

### 7.1 Results of 2010 Ecological Risk Assessment

A key component in AFMA's move towards Ecosystem Based Fisheries Management has been the undertaking of ecological risk assessments (ERA) for all AFMA managed fisheries. By assessing the impacts of fishing on all parts of the marine environment, the ERAs encompass an ecosystem-based assessment approach. The ERAs will help to prioritise research, data collection monitoring needs and management actions for fisheries and ensure that they are managed both sustainably and efficiently.

The ERA process for skipjack tuna was completed in 2010. A total of 25 species were found to be at high risk to the effects of the Australian skipjack fisheries following a Level 2 Residual Risk Assessment. These species are shown in Table 8.

**Table 8. list of species found to be at high risk to the effects of skipjack fisheries following a Level 2 Residual Risk Assessment.**

Scientific Name	Common Name
<i>Arctocephalus pusillus doriferus</i>	Australian Fur Seal
<i>Indopacetus pacificus</i>	Longman's Beaked Whale
<i>Delphinus capensis</i>	Common dolphin, long-beaked
<i>Feresa attenuata</i>	Pygmy Killer Whale
<i>Globicephala macrorhynchus</i>	Short-finned Pilot Whale
<i>Globicephala melas</i>	Long-finned Pilot Whale
<i>Grampus griseus</i>	Risso's Dolphin
<i>Hyperoodon planifrons</i>	Southern Bottlenose Whale
<i>Kogia simus</i>	Dwarf Sperm Whale
<i>Lagenodelphis hosei</i>	Fraser's Dolphin
<i>Lagenorhynchus cruciger</i>	Hourglass dolphin
<i>Lissodelphis peronii</i>	Southern Right Whale Dolphin
<i>Mesoplodon bowdoini</i>	Andrew's Beaked Whale
<i>Mesoplodon densirostris</i>	Blainville's Beaked Whale
<i>Mesoplodon ginkgodens</i>	Ginkgo Beaked Whale
<i>Mesoplodon grayi</i>	Gray's Beaked Whale
<i>Mesoplodon hectori</i>	Hector's Beaked Whale
<i>Mesoplodon layardii</i>	Strap-toothed Beaked Whale
<i>Mesoplodon mirus</i>	True's Beaked Whale
<i>Orcinus orca</i>	Killer Whale

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Scientific Name	Common Name
<i>Pseudorca crassidens</i>	False Killer Whale
<i>Stenella coeruleoalba</i>	Striped Dolphin
<i>Tursiops aduncus</i>	Indian Ocean bottlenose dolphin
<i>Tursiops truncatus</i>	Bottlenose Dolphin
<i>Ziphius cavirostris</i>	Cuvier's Beaked Whale

## 7.2 Nature of impacts on the ecosystem

Fishing methods used in the STF (described in Section 1.3) are pelagic and do not interact with the benthos.

Purse seine fishing for skipjack around FADs in the broader WCPO and Indian Ocean may have a minor impact on the ecosystem. FADs have been linked to changes in migratory patterns, growth rates and predation rates of FAD-aggregating pelagic species such as skipjack tuna, as well as entanglement of sea turtles.

Australia has implemented a ban on the use of FADs north of 20°S, consistent with WCPFC management measures to help mitigate these ecosystem effects.

SPC completed a food web study on the tuna ecosystem of the WCPO in 2002. Data from this study was used in the Ecopath with Ecosim (EwE) bio-dynamic ecosystem model to allow better modelling and assessment of the fishing impact on the ecosystem and tuna stocks.

The United Nations have encouraged their members to use this modelling system in fisheries management as it can be used to:

- Evaluate ecosystem effects of fishing;
- Explore management policy options;
- Analyse the impact and placement of marine protected areas;
- Predict movement and accumulation of contaminants and tracers;
- Model the effects of environmental changes.

### *Impacts on food chains - structures & productivity/flows*

Australia provides data to SPC to conduct stock assessments on Skipjack in the WCPO. One of the aims of the SPC data collection program is to identify species associations and relationships through analysing gut content of species caught in the fishery. This program assists in identifying the impact of the fishery on the food chain.

Assessments using models such as the EwE have demonstrated that purse seine fishing in the Pacific Ocean lowers the biomass similarly across trophic levels, whereas methods such as long lining have a greater effect on lowering biomass in the upper trophic levels only. A study in 2004 demonstrated that the numbers of skipjack in the Pacific Ocean decline due to targeted purse-seine fishing, however the effect is buffered as their predators, such as Bigeye tuna, are caught by the longline fishery. Therefore overall, purse seine activity is thought has minimal affect on the food chain when balanced by longline fishing.



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### **Impacts on the physical environment - physical habitat and water quality**

The STF is not considered to have a significant impact on physical habitat and water quality. Fishing methods are pelagic and have no direct interaction with the benthos.

Operators are bound by Marine Pollution (MARPOL) regulations, which prohibit the disposal of garbage from ships and boats. These regulations require fishing vessels to make every effort to retrieve all lost or damaged fishing gear.

### **7.3 Management action taken to reduce impacts and results of such action**

Australia has implemented the following management measures to ensure that significant damage to the ecosystem does not arise from the potential impacts of Skipjack purse seine fishing:

- ensuring the purse seine gear allows non-target species to escape or be assisted to escape;
- limiting effort in the fishery by placing a limit on the number of Skipjack permits available;
- collecting data on all species caught in the fishery, and provision of this data to SPC to incorporate into regional stock assessments;
- developing an Ecological Risk Assessment and Ecological Risk Management report for the Skipjack fishery to identify areas of concern;
- banning the use of FADs north of 20°S; and
- implementing several marine protected areas within the area of the fishery, including the Great Barrier Reef Marine Protected Area, the Great Australian Bight Marine Park and Ningaloo Marine Park.

The results and effectiveness of these actions are very hard to measure due to the limited to nil effort in the STF over recent years. However, these measures will prevent serious damage to the ecosystem if the effort in the effort is to increase.

## **8 Progress in implementing recommendations and conditions resulting from SEWPaC's 2007 assessment of the STF**

### **8.1 Description of progress in implementing each recommendation and condition**

<b>Performance Criteria</b>	<b>Level of Achievement as at September 2011</b>	<b>Deadline</b>
<b>CONDITIONS</b>		
<b>Condition 1:</b> Operation of the STF will be carried out in accordance with the management arrangements in force under the <i>Fisheries Management Act 1991</i> .	<b>Achieved</b> The Fishery continues to be managed through input controls under annual permits issued under the <i>Fisheries Management Act 1991</i> .	

Performance Criteria	Level of Achievement as at September 2011	Deadline
<p><b>Condition 2:</b> The Australian Fisheries Management Authority (AFMA) to advise the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) of any intended change to the STF management arrangements that may affect the assessment of the fishery against the criteria on which EPBC Act decisions are based.</p>	<p><b>Achieved</b> AFMA revised the skipjack permit conditions in 2010 in accordance with requirements of the Western and Central Pacific Fisheries Commission (WCPFC). The changes involved:</p> <ul style="list-style-type: none"> <li>- preventing operators from deploying or fishing around FADs across the entire area of the Eastern Skipjack fishery;</li> <li>- requiring all fishing vessels on the high seas to be registered on the WCPFC vessel register, prior to entering the high seas;</li> <li>- prohibiting purse seine vessels transshipping at sea in line with WCPFC requirements;</li> <li>- standardising the net size across the fishery; and</li> <li>- closing high-seas pockets wholly enclosed by EEZs between 20°N and 20°S.</li> </ul> <p>AFMA informed SEWPaC of these changes in 2010.</p> <p>AFMA also added new conditions to the ESTF and WSTF permits in 2011 consistent with measures under WCPFC and IOTC. The changes involved:</p> <ul style="list-style-type: none"> <li>- Prohibiting intentional setting on data buoys;</li> <li>- WSTF operators must not land or retain thresher sharks; and</li> <li>- WSTF operators must not enter an area of closure off the coast of Somalia between 1 November and 1 December.</li> </ul> <p>The revised permit conditions should not affect the current accreditation under the EPBC Act.</p>	
<p><b>Condition 3:</b> AFMA to produce and present reports to SEWPaC annually as per Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries - 2nd Edition</i>.</p>	<p><b>Achieved</b> AFMA has submitted Annual Reports including all information in Annex B of the Guidelines each year since the accreditation as a World Trade Operation in November 2008.</p>	Annually

Performance Criteria	Level of Achievement as at September 2011	Deadline
<p><b>Condition 4:</b> By 31 December 2009, AFMA to make publicly available a statement of management arrangements for the STF, which provides an overarching framework articulating the key management tools of the fishery.</p>	<p><b>Achieved</b> A Statement of Management Arrangements for the Skipjack Tuna Fishery was prepared in 2009 and is available on the AFMA website.</p>	<p>31 December 2009</p>
<b>RECOMMENDATIONS</b>		
<p><b>Recommendation 1:</b> AFMA to establish appropriate consultative arrangements for the STF to ensure that all interested and affected parties have the opportunity to provide input into the management of the fishery.</p>	<p><b>Achieved</b> AFMA established the Tropical Tuna Management Advisory Committee (TTMAC) in 2010 as the most appropriate consultative forum to provide advice to AFMA on the management of skipjack tuna.</p> <p>TTMAC involves membership from AFMA, industry, researchers, conservation groups, the recreational sector, and the State Government. This MAC also provides advice to AFMA on management of the Eastern and Western Tuna and Billfish fisheries.</p>	<p>Not specified</p>
<p><b>Recommendation 2:</b> As part of the STF Harvest Strategy review, AFMA to consider amending the Harvest Strategy to articulate the circumstances under which the "Limit trigger/stop rule (Level 3)" in the STF Harvest Strategy would be applied.</p>	<p><b>Under development</b> The Harvest Strategy in place for the STF adopts an agreed set of catch trigger levels which initiate management action. It recognises the current lack of concern regarding overall stock status, the highly variable nature of the fishery and the regional management arrangements through the WCPFC and IOTC which are responsible for skipjack management. Australia's domestic skipjack fishery occurs at the periphery of internationally exploited stocks.</p> <p>AFMA will review the Skipjack Harvest Strategy 2011. As part of this review, AFMA will consider including the circumstances under which the 'limit trigger/stop rule (Level 3)' would be applied.</p>	<p>Not specified</p>

Performance Criteria	Level of Achievement as at September 2011	Deadline
<p><b>Recommendation 3:</b> In reviewing the STF Harvest Strategy, AFMA will examine the data collection and validation requirements of the fishery to ensure the objectives of the harvest strategy are met.</p>	<p><b>Under development</b> AFMA continuously collect information required to manage the STF under the Harvest Strategy and international obligations under WCPFC and IOTC.</p> <p>When reviewing the Harvest Strategy in 2011, data collection and validation requirements will be evaluated.</p>	<p>Not specified</p>
<p><b>Recommendation 4:</b> The Department of Agriculture, Fisheries and Forestry (DAFF) to:</p> <ol style="list-style-type: none"> <li>in consultation with AFMA, SEWPaC and other relevant government agencies, continue to take a proactive role in the WCPFC and the IOTC to improve the effectiveness of both organisations in managing target, byproduct, bycatch (including protected) species.</li> <li>consider the STF Harvest Strategy in developing the whole of government position for negotiations related to the skipjack fishery in both the WCPFC and IOTC, and to advocate the Commonwealth Fisheries Harvest Strategy Policy as an example of best practice in setting sustainable catch levels.</li> </ol>	<p><b>Achieved</b> DAFF and AFMA have taken a proactive role in international forums such as the WCPFC and IOTC Annual meetings and relevant Scientific meetings.</p> <p>On many occasions Australia has advocated the CHSP as an example of best practise in setting sustainable catch levels.</p>	<p>Ongoing</p>
<p><b>Recommendation 5:</b> By 30 June 2009, AFMA to complete the STF Bycatch and Discarding Work plan to implement appropriate management responses to address and mitigate risks and impacts identified in the STF Level 2 and Rapid Level 3 Ecological Risk Assessments, including the development and implementation of an appropriate data collection and validation framework for the fishery.</p>	<p><b>No longer applicable</b> A number of bycatch species were found to be at high risk to the effects of fishing in the STF through the ERA/ERM process. However, due to the very low amount of activity in the fishery, there is no need to develop a Bycatch and Discarding Workplan at this stage. Any issues with bycatch species are managed through the Ecological Risk Management document for the fishery.</p>	<p>30 June 2009</p>

Performance Criteria	Level of Achievement as at September 2011	Deadline
<b>Recommendation 6:</b> AFMA to develop and implement a program to identify long-term trends in byproduct and bycatch composition and quantity in the STF.	<b>Ongoing</b> There has been limited activity in the fishery in recent years with a corresponding reduction in impact on byproduct and bycatch composition. AFMA monitor the catch of bycatch species to ensure that if effort increases in the STF, long-term trends in by-product and bycatch composition in the fishery are identified and addressed if necessary.	Not specified
<b>Recommendation 7:</b> AFMA to ensure that the STF is included in its annual compliance risk assessment for Australian fisheries and implement appropriate measures to address identified risks in the fishery.	<b>Not applicable</b> Given the low levels of activity a formal compliance risk assessment has not been undertaken for the fishery. AFMA considers that the use of routine surveillance, such as Integrated Computer Vessel Monitoring Systems, fish receiver records and vessel inspections, is adequate to monitor activity in the fishery. A formal compliance risk assessment will be undertaken if effort in the fishery increases.	Not specified

## 9 Summary

There is a very low level of activity in the Australian Skipjack Tuna Fishery. The Tropical Tuna Management Advisory Committee provides advice on management of the Skipjack fisheries and the Eastern and Western Tuna & Billfish Fisheries.

As part of AFMA's review in of the Harvest Strategy for the Fishery, AFMA will consider the circumstances under which the 'limit trigger/stop rule (Level 3)' would be applied and the data collection and validation requirements of the fishery to ensure the objectives of the harvest strategy are met.

AFMA has commenced work on developing a program to ensure that appropriate mechanisms are in place to identify long-term trends in by-product and bycatch composition if effort increases in the fishery.



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## List of acronyms

ABARES	-	Australian Bureau of Agricultural and Resource Economics and Sciences
AFMA	-	Australian Fisheries Management Authority
AFZ	-	Australian fishing zone
CPUE	-	catch per unit effort
CSIRO	-	Commonwealth Scientific and Industrial Research Organisation
EEZ	-	Exclusive Economic Zone
EPBC Act	-	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESTF	-	Eastern Skipjack Tuna Fishery
ETBF	-	Eastern Tuna and Billfish Fishery
FAD	-	Fish Aggregating Device
FRDC	-	Fisheries Research and Development Corporation
ICVMS	-	Integrated Computerised Vessel Monitoring System
IOTC	-	Indian Ocean Tuna Commission
IUU	-	Illegal, unreported and unregulated
TTMAC	-	Tropical Tuna Management Advisory Committee
OCS	-	Offshore Constitutional Settlement
RFMO	-	Regional Fisheries Management Organisation
SBT	-	Southern bluefin tuna
SCTB	-	Standing Committee on Tuna and Billfish
SEWPaC	-	Department of Sustainability, Environment, Water, Population and Communities
SPC	-	Secretariat to the Pacific Community
STF	-	Skipjack tuna fishery
TACC	-	total allowable commercial catch
TAP	-	Threat Abatement Plan
UNCLOS	-	United Nations Convention on the Law of the Sea
UNFSA	-	United Nations Fish Stocks Agreement
WCPFC	-	Western and Central Pacific Fisheries Commission
WCPO	-	Western and Central Pacific Ocean
WPTT	-	Working Party on Tropical Tunas
WSTF	-	Western Skipjack Tuna Fishery
WTBF	-	Western Tuna and Billfish Fishery
WTO	-	Wildlife Trade Operation