Ministry of
Fisheries
Te Tautiaki i nga tini a Tangaroa

# Operational Management Plan for Skipjack Tuna

2010—2015

New Zealand Government

## Overall Goal for New Zealand fisheries

New Zealanders maximising benefits from the use of fisheries within environmental limits

## Outcomes

**Use Outcome: Fisheries resources are used in a manner that provides greatest overall economic, social, and cultural benefit**

**Environment Outcome: The capacity and integrity of the aquatic environment, habitats and species are sustained at levels that provide for future and current use.**

**Governance Conditions: Sound governance arrangements that are well specified, transparent, and which support cost-effective and accountable decision-making**

## Management objectives for fisheries for Highly Migratory Species

| | | |
|---|---|---|
| **Use Outcome** | 1 | Promote a viable and profitable tuna fishery in New Zealand |
| | 2 | Maintain / enhance world class gamefisheries in New Zealand fisheries waters |
| | 3 | Deliver fair opportunities for access to HMS fisheries |
| | 4 | Minimise wastage and promote humane treatment |
| | 5 | Maori interests (including customary, commercial, recreational and environmental) are enhanced |

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| **Environment Outcome** | 6 | Maintain a sustainable fishery for HMS within environmental standards |
| | 7 | Implement an ecosystem approach to fisheries management, taking into account associated and dependent species |
| | 8 | Protect, maintain, and enhance fisheries habitat |
| | 9 | Allow for HMS aquaculture development while ensuring the ecosystem and wild fisheries are protected |

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| **Governance conditions** | 10 | Recognise and provide for Deed of Settlement obligations |
| | 11 | Influence international fora and ensure New Zealand interests are taken into account |
| | 12 | Maintain an effective fisheries management regime |

## Operational objectives for skipjack—this document

# List of Abbreviations

| | |
|---|---|
| $B_{MSY}$ | The biomass level that can produce the maximum sustainable yield from a fish stock. |
| EEZ | Exclusive Economic Zone |
| FAD | Fish aggregating device - a permanent, semi-permanent or temporary structure or device used to attract fish. |
| FFA | Forum Fisheries Agency, a pan-Pacific body that provides expertise, technical assistance and other support to its members on tuna resources and their management. |
| HMS | Highly migratory species |
| MFish | Ministry of Fisheries |
| QMS | Quota Management System |
| TAC | Total Allowable Catch |
| TACC | Total Allowable Commercial Catch |
| WCPFC | Western and Central Pacific Fisheries Commission |

# Introduction

This operational management plan for skipjack establishes operational objectives and performance criteria for the period 2010-2015 for skipjack fisheries including:

- Commercial purse seine fisheries within New Zealand fisheries waters;
- Commercial purse seine fisheries outside of New Zealand fisheries waters; and
- Recreational fisheries for skipjack

The plan consists of the following sections:

1. Overview of fisheries for skipjack tuna
2. Overview of fish and non-fish bycatch in skipjack fisheries
3. Operational objectives and performance criteria for the skipjack fishery

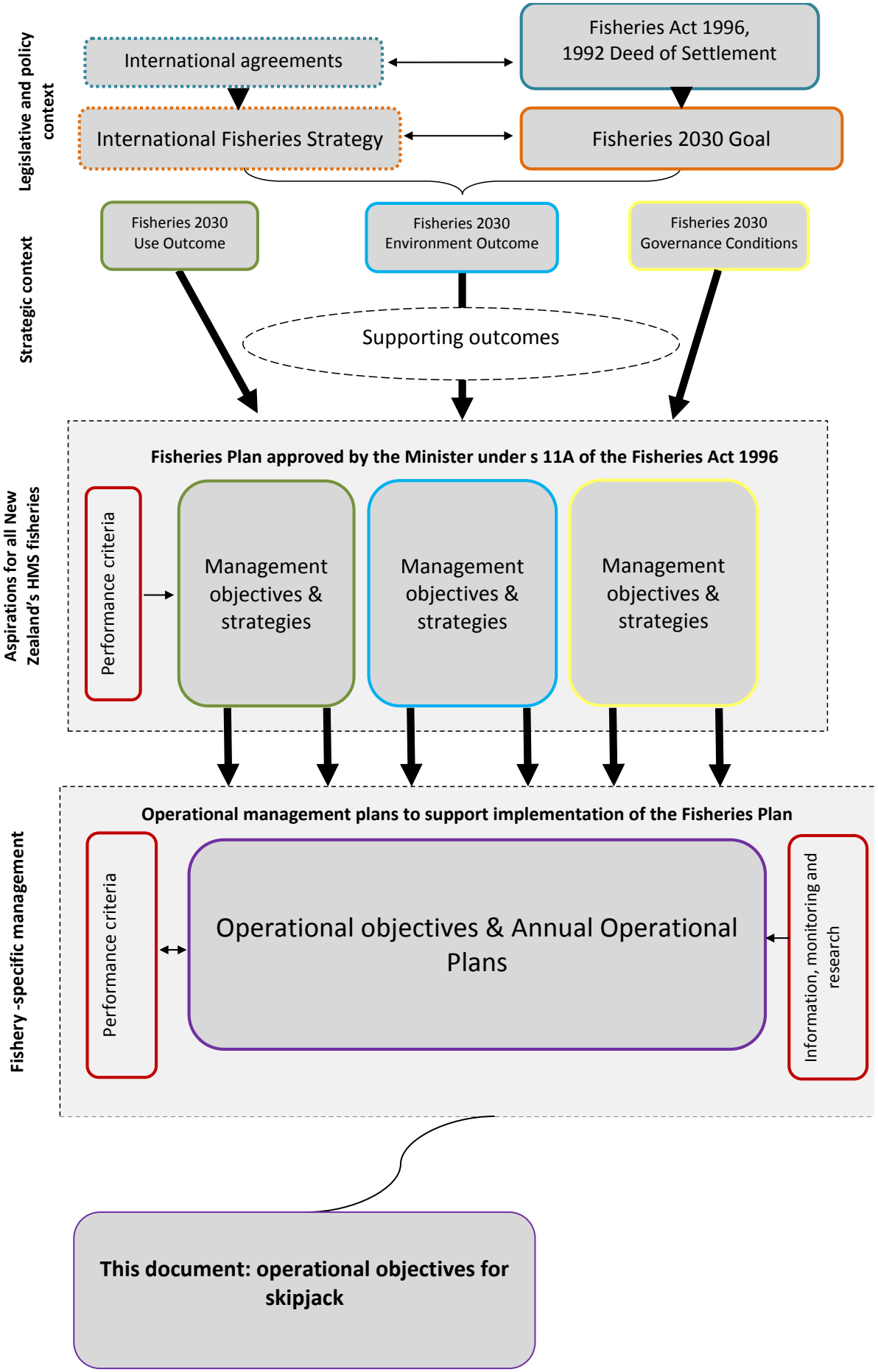
The operational objectives in this management plan provide greater detail on how the management objectives for highly migratory species will be implemented in relation to skipjack, as outlined in the diagram on the following page. Management objectives for highly migratory species are outlined in the National Fisheries Plan for Highly Migratory Species, which has been approved by the Minister of Fisheries under section 11A of the Fisheries Act.

This document covers management of commercial and recreational fisheries for skipjack, as well as the management of any adverse environmental effects caused by fishing for skipjack. Such environmental impacts occur particularly in the tropical fishery, where the use of Fish Aggregating Devices is associated with bycatch of juvenile tuna and other species.

An overview of the operational objectives and the actions proposed to meet the objectives is provided on page 3. The numbering used for the operational objectives outlined in this document follows on from the management objectives outlined in the national fisheries plan. For example, management objective 1— to promote a viable and profitable tuna fishery in New Zealand has the following contributing objectives:

- Management objective 1.1—Reduce administrative barriers to profitability in the HMS fishery;
- Management objective 1.2—Negotiate favourable country allocations for New Zealand fishers;
    - *Operational objective 1.3 (large pelagic species)— Ensure catch limits are not exceeded and annual catch entitlements are readily available and are used to cover catches*
    - *Operational objective 1.4 (large pelagic species)— Ensure fair allocation of levy costs for quota owners in HMS fishstocks*
    - **Operational objective 1.5 (skipjack)— Regularly monitor the need for more active management of skipjack, based on utilisation criteria**
    - **Operational objective 1.6 (skipjack)— Maintain catch-based attribution of cost recovery levies**
    - **Operational objective 1.7 (skipjack)— Devise incentives to add value to and/or reduce wastage in the skipjack fishery**
    - **Operational objective 1.8 (skipjack)— Manage the impacts of any fishing in New Zealand waters under provisions of the US Tuna Treaty**

## Structure of the National Fisheries Plan for Highly Migratory Species and operational management plans for large pelagic species, skipjack, and albacore



**Summary of objectives and actions over timeline of plan** **(for further description of the priority ratings see page 10)**

| Operational objectives for skipjack | Actions | Five year prioritisation | | | | |
|---|---|---|---|---|---|---|
| | | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 |
| **Use Outcome** | | | | | | |
| 1 Promote a viable and profitable tuna fishery in New Zealand | | | | | | |
| 1.5 Regularly monitor the need for more active management of skipjack, based on utilisation criteria | Assess skipjack against QMS introduction standard and/or the need for alternative management arrangements as and when required | *On-going (as required) (P2)* | | | | |
| 1.6 Maintain catch-based attribution of cost recovery levies | Review or contribute to review of cost recovery levies that promotes equitable approach for HMS fisheries as relevant (depends on timing of any QMS introduction process). | *As and when required (P2)* | | | | |
| 1.7 Devise incentives to add value to and/or reduce wastage in the skipjack fishery | Industry to investigate options for adding value to catch as desired e.g. certification, alternative methods etc (**P4**); MFish to support any certification application as appropriate. | | | | | **P4** |
| 1.8 Manage the impacts of any fishing in New Zealand waters under provisions of the US Tuna Treaty | Monitor and critically review the New Zealand position during renegotiation of the US Tuna Treaty, and keep stakeholders involved in the process. | **P3** | | | | |
| 3 Deliver fair opportunities for access to HMS fisheries | | | | | | |
| 3.3 Implement a Code of Practice for skipjack fishing | Finalise and implement code of practice to reduce conflict between commercial and non-commercial fishers | **P3** | | *On-going (annual review)* | | |
| **Environment Outcome** | | | | | | |
| 6 Maintain a sustainable fishery for HMS within environmental standards | | | | | | |
| 6.6 Promote sustainable management of skipjack in the Western and Central Pacific including allocation of rights in the fishery | Identify and advocate within WCPFC for suitable reference points for skipjack. Monitor the New Zealand fishery for any signs of stock contraction. | **P1** | | | | |
| 6.7 Regularly monitor the need for more active management of skipjack based on sustainability criteria | Annually assess the need for further management within New Zealand fisheries waters required to support WCPFC agreements; assess skipjack against the QMS introduction standard as required. | *On-going (annual review and as required) (P3)* | | | | |
| 7 Implement an ecosystem approach to fisheries management, taking into account associated and dependent species | | | | | | |
| 7.7 Manage bycatch of juvenile tuna in tropical skipjack fisheries in accordance with WCPFC conservation and management measures | Implement agreed WCPFC measures | **P1** | | | | |

# 1. Overview of the Skipjack Fishery

Purse-seine fisheries for skipjack tuna in the western and central Pacific Ocean are dominated by a tropical component that operates throughout the year in calm equatorial waters and provides the bulk of the tuna catch. New Zealand vessels participate in this fishery, as well as in a subtropical fishery within New Zealand waters, where catches are smaller and more seasonal.

## Biological overview

Skipjack tuna are typically a schooling species, with juveniles and adults forming large schools at or near the surface in tropical and warm-temperate waters to at least 40 degrees south in New Zealand waters. Skipjack movement is variable but is thought to be influenced by large-scale oceanographic conditions (as well as other factors such as availability of food and potentially overall stock size).

Individuals found in New Zealand waters are mostly juveniles, which also occur more broadly across the Pacific Ocean, in both the northern and southern hemisphere. Individual tagged skipjack tuna have shown movements of over several thousand nautical miles but also exhibit periods of residence around islands in the central and western Pacific. They migrate to warmer waters for the winter months. Spawning occurs year-round in tropical waters.

For more information on the management, biology of skipjack and the biological status of the stocks please see the Ministry of Fisheries Plenary report available at www.fish.govt.nz or visit the WCPFC website www.wcpfc.int.

## Fisheries Management overview

Management of skipjack throughout the Western and central Pacific Ocean is the responsibility of the Western and Central Pacific Fisheries Commission (WCPFC). As a signatory to the Western and Central Pacific Convention, New Zealand is responsible for ensuring the management measures applied within New Zealand fisheries waters are compatible with those of the Commission. Equally, WCPFC has an obligation to ensure measures it promotes are consistent with those of coastal states.

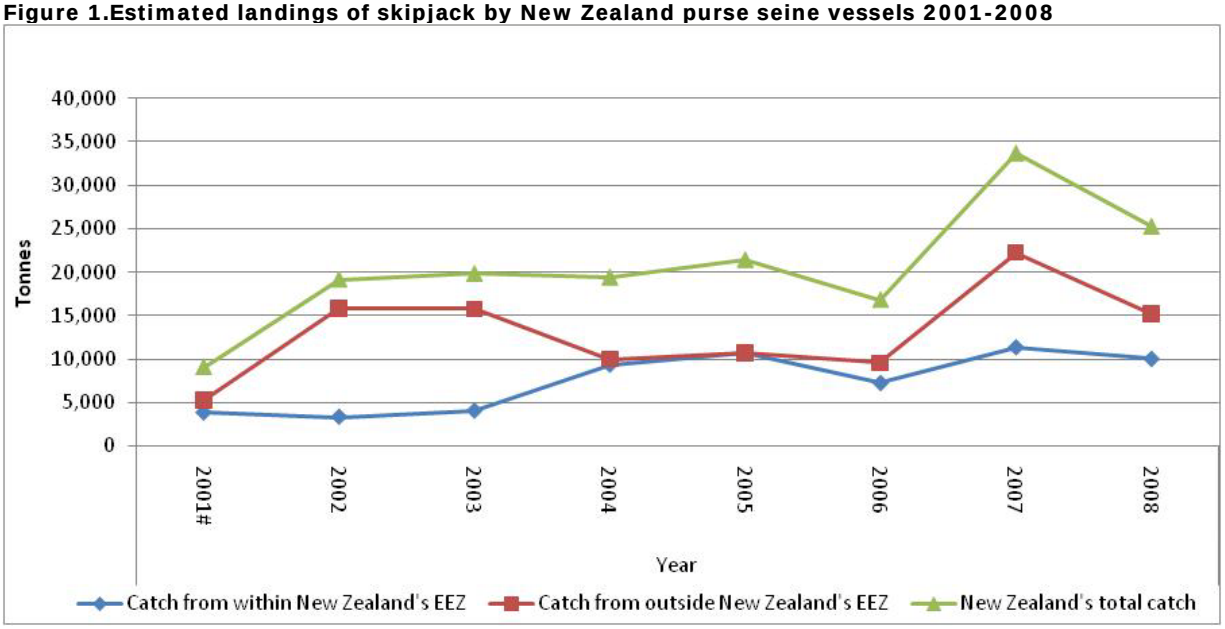
Skipjack in the western and central Pacific Ocean are considered a single stock for assessment purposes. The tropical component of the skipjack stock is located between eastern Indonesia (about 120°E) and the Phoenix and Line Islands of Kiribati (170°W–150°W), and is generally considered to cover the area bounded by 20°N and 20°S. The subtropical component includes the waters of eastern Australia, and northern New Zealand.

Stock assessments for skipjack are done by the Oceanic Fisheries Program of the Secretariat of the Pacific Community (SPC). WCPFC's Scientific Committee reviews the assessments. The WCPFC's Scientific Committee report in 2009 concludes that overfishing of skipjack is not occurring and the stock is not in an overfished state. Landings increased in 2008 to an historical high of over 1.7 million tonnes, continuing a trend of annual increases since at least 2001. These high catches are considered sustainable for skipjack unless recruitment falls persistently below the long-term average.

New Zealand's skipjack catch, including catches within New Zealand's exclusive economic zone (EEZ) and by New Zealand vessels outside the zone, totalled 25,244t in 2008. This figure reflects a steady increase from 2001, peaking in 2007 at a record high of 33,659 t (see Figure 1). New Zealand's total catch of skipjack makes up only a small proportion of the total catch within the WCPFC convention area, in 2008 approximately 1.5% of the WCPO's total catch of 1,634,617t.

Skipjack is not managed as a quota management species and no total allowable catch (TAC) applies in New Zealand fisheries waters or on the high seas. However, conservation and management measures set by WCPFC do place binding effort controls on the skipjack fishery outside of New Zealand fisheries waters.

**Figure 1.Estimated landings of skipjack by New Zealand purse seine vessels 2001-2008**




Ten New Zealand purse seine vessels target skipjack within the WCPFC convention area, including six small domestic purse seine vessels that currently fish exclusively within New Zealand fisheries waters. Since 2001, two New Zealand companies have also operated up to four large super seiners in tropical waters, principally in the EEZs of various Pacific Island countries and on the high seas. Skipjack caught by these vessels is landed mostly in American Samoa.

Three of the large super-seine vessels spend most of their time in the tropical Pacific. The other super-seine vessel fishes mainly within New Zealand fisheries waters in some seasons. This vessel operates primarily off the west coast of the North Island, an area previously only lightly fished by the domestic fleet.

*New Zealand Fishery*

The seasonal New Zealand purse seine fishery for skipjack is based on locating and setting on schools of skipjack tuna. In comparison to the tropical fishery, which frequently uses Fish Aggregating Devices (FADs), the fishery has minimal bycatch (less than 1% of total catch).

The level of skipjack catch within New Zealand waters depends partly on whether super-seine vessels choose to fish in New Zealand over summer (January-May). These larger vessels tend to fish further offshore and in deeper waters than the smaller domestic vessels. Factors such as the relative catch rates between the tropical region and the New Zealand zone play a role in determining whether the vessels come south. In recent years the cost of fuel and the attraction of targeting free swimming schools of skipjack has also become important.

Fishing practices have evolved to utilise skipjack tuna in the face of varying international market demand, and varying availability within New Zealand fishery waters from year to year. This means that the purse seine fishery for skipjack is closely linked to other domestic purse seine fisheries. For approximately five months of the year (December to May) the purse seine fleet, based in Tauranga, tends to target exclusively skipjack tuna. When skipjack are not available, this fleet fishes for a mix of other species including jack mackerels, blue mackerel and kahawai.

The catch of skipjack within New Zealand fisheries waters comes predominantly from the northern and central North Island. The split of catches between the west and east coast is more variable, and depends on the availability of skipjack in a given season.

United States purse seine vessels can fish in some parts of New Zealand Fisheries waters under foreign license arrangements. This access is governed by the Multilateral Treaty between the Government of the United States of America and the Governments of certain Pacific Island Countries including New Zealand (commonly referred to as the US Tuna Treaty; for discussion of the implications of this access agreement for the New Zealand fishery, see objective 1.8).

*WCPFC Fisheries*

In the tropical fishery, the main fishing method is also purse seining, but the fishery has until recently been based on fishing Fish Aggregating Devices (FADs). In this fishery, skipjack generally account for 70-85% of the purse seine catch, with yellowfin accounting for 15-30% and bigeye a smaller proportion of the catch. There are concerns that current purse seine effort in the equatorial Pacific is adversely affecting bigeye and yellowfin tuna. Bigeye tuna in particular is assessed as being at or close to an overfished state and overfishing is occurring. Yellowfin availability in New Zealand waters has recently been particularly low. Any increases in purse seine catches of skipjack in the equatorial area may result in a corresponding increase in fishing mortality for bigeye and yellowfin tunas unless bycatch is mitigated (see below).

In response to the concerns about bycatch of juvenile bigeye and yellowfin tunas in purse seine fisheries for skipjack, WCPFC has adopted a three-year conservation and management measure (CMM 2008-01) that places a variety of controls on the fishery, including:

- A Vessel Day Scheme (VDS) (or equivalent) applies in the zones of coastal states in the tropical fishery to manage fishing effort
- 100% observer coverage
- Management plan for the use of FADs
- Seasonal closure to the use of FADs (between 1 July and 30 September)
- Catch retention of all bigeye, skipjack and yellowfin tuna
- Two high seas pockets closed to purse seine fishing from 1 January 2010

## Environmental overview

As noted above, the main environmental issue associated with skipjack fishing is bycatch in the tropical fishery.

Skipjack are 'apex' or 'top' predators when fully grown. Adult skipjack have few natural predators apart from larger tunas and to a lesser extent sharks. Animals that hold such a position are thought to play a crucial role in maintaining the health of an ecosystem. Apex predators may exert control over the sizes of the populations of many species on lower levels of the food web. Consequently, they may contribute to the stability of marine ecosystems, and maintain biodiversity.

Skipjack consume various species of crustaceans, fish and cephalopods. Examination of stomach contents of the smaller skipjack found in New Zealand fisheries waters suggest feeding on the euphausid (*Nyctiphanes australis*) predominantly with small amounts of pilchard and saury. As skipjack increase in size there is a change of diet to larger prey such as fish.

## Economic overview

Most skipjack tuna caught in New Zealand waters, or caught by New Zealand vessels on the high seas, is exported frozen whole, with only a small amount of this tuna being landed and sold domestically. Although troll or poling techniques are used elsewhere to land better quality product, this method has not been successfully used in New Zealand (see objective 1.7 for additional discussion).

The western and central Pacific Ocean accounted for 63% of the global catch of skipjack between 1994 and 2004 (although only 1-2% of that is caught by New Zealand vessels). Most skipjack is sold as canned products, and profitability is generally achieved through volume of sales, rather than value-adding. The main export markets for domestically-caught skipjack in 2008 were Thailand, Turkey, Spain and Iran.

Prices for skipjack are set on the global commodity market, and can fluctuate markedly from year to year. Prices increased sharply during 2008 reaching almost US$2,000 per tonne, however since 2009 prices have fallen from peak levels to approximately US$1000 per tonne in early 2010.

For the latest information on global tuna prices see the Forum Fisheries Agency (FFA) website www.ffa.int/trade_news.

## Compliance overview

Skipjack is a lower value tuna species, and operators rely on high volume to maintain profitability. Levy charges are relatively low and there is little incentive to under report catches. Because of the potential for future allocations to be based on catch (both domestically and in the WCPFC context), the opposite incentive may prevail.

Expansion of observer coverage both domestically and elsewhere in the Convention area will improve our understanding of bycatch and how that may vary over time and between regions. In the WCPFC, implementation of centralised VMS (vessel monitoring system) and observer arrangements are seen as important elements of a monitoring, control and surveillance arrangement for HMS fishing in the Convention area.

## Social overview

Skipjack is a key seasonal component of both domestic purse seine fisheries and for those companies that also operate in the tropical fishery. Because purse seining is the most efficient means of catching skipjack, the capital costs of entry into this fishery are higher than for other tuna fisheries. This factor may have influenced the size of the New Zealand fleet.

While some participants consider there to be development opportunities in the fishery, others note that the variable abundance of skipjack in New Zealand waters could lead to increased competition between fishers in years when abundance is low (see objective 1.5 for more details). A previous proposal to introduce skipjack into the quota management system (QMS) received a mixed response from industry, in part because of the choice of catch history years proposed to determine allocations in the fishery. The choice of catch history years is important because different periods would favour either earlier or later entrants into the fishery. Any future proposal to introduce skipjack into the QMS would include discussion of catch history years (past decisions on catch history years have been rescinded).

Skipjack is sought after by recreational fishers as a light tackle sport fish and for bait. It is available throughout the summer and autumn, ranging south as far as the lower North Island on both coasts. Skipjack has a high oil content, but if bled and chilled on capture, the loins are good for sashimi. However, skipjack are less important as fresh fish than are the other tunas caught in New Zealand. Most recreationally-caught skipjack are utilized as whole bait in billfish fishing, or as cut bait for bottom species.

The main skipjack season coincides with the presence of other blue water predators such as yellowfin tuna, and blue and striped marlin that are prime recreational target species. Schools of feeding skipjack attract larger predators (and fishers). This association has lead to some perceived conflicts between recreational and commercial fishers, with recreational fishers concerned that the activity of purse seine vessels may affect their access to other gamefish species (see objective 3.3 for discussion).

Skipjack tuna are referred to as aku in Maori. Maori have past, present, and future interests in the skipjack fishery, including an interest in future QMS management. There is no information on the customary take, but it is considered to be low. Nonetheless, it is known that Maori did travel considerable distances offshore, and did target tuna species. More information is required on contemporary Maori interests in these fisheries, as outlined in the national fisheries plan for HMS (see management objective 5).

# 2. Overview of fish and non-fish bycatch in skipjack fisheries

## Main bycatch species

*New Zealand Fishery*

Historical data summaries and observer records suggest a low overall incidence of bycatch in the New Zealand fishery, since it is predominantly based on single-species schools of skipjack tuna. Observers have been deployed on purse seine vessels since 2005, with coverage by set increasing from just under 5% in 2005 to almost 35% in 2009. The catch composition for the four purse seine trips covered in 2009 is provided in table 1. The main bycatch species caught include mackerels, sunfish, and various sharks and rays.

**Table 1: Catch composition from four observed purse seine trips operating within New Zealand fisheries waters in 2009.**

| Species | Scientific Name | Catch weight (kg) | % Catch |
|---|---|---|---|
| Skipjack tuna | *Katsuwonus pelamis* | 1,372,348 | 98.95 |
| Jack Mackerel | *Trachurus murphyi* | 7,030 | 0.51 |
| Blue Mackerel | *Scomber australasicus* | 2,802 | 0.20 |
| Sunfish | *Mola mola* | 1,525 | 0.11 |
| Manta rays and devil rays | *Myliobatidae* | 1,355 | 0.10 |
| Jellyfish | | 830 | 0.06 |
| Striped marlin | *Tetrapturus audax* | 410 | 0.03 |
| Manta Ray | *Mobula japonica* | 190 | 0.01 |
| Mako Shark | *Isurus oxyrinchus* | 123 | 0.01 |
| Albacore Tuna | *Thunnus alalunga* | 92 | 0.01 |
| Frigate Tuna | *Auxis thazard* | 42 | 0.00 |
| Blue Shark | *Prionace glauca* | 40 | 0.00 |
| Trachurus declivis | *Trachurus declivis* | 40 | 0.00 |
| Flying Fish | *Exocoetidae* | 36 | 0.00 |
| Frostfish | *Lepidopus caudatus* | 33 | 0.00 |
| Squid | | 23 | 0.00 |
| Electric Ray | *Torpedo fairchildi* | 12 | 0.00 |
| Porcupine fish | *Tragulichthys jaculiferus* | 4 | 0.00 |
| Rays Bream | *Brama brama* | 2 | 0.00 |
| Rudderfish | *Centrolophus niger* | 2 | 0.00 |
| Saury | *Scomberesox saurus* | 2 | 0.00 |
| White Warehou | *Seriolella caerulea* | 1 | 0.00 |

*WCPFC Fisheries*

As noted, for the tropical purse seine fishery for skipjack, there are concerns about the bycatch of juvenile bigeye and yellowfin tuna, as well as other non-target species including billfish and pelagic sharks.

These concerns arise particularly from the use of anchored or drifting FADs. FADs are defined as any man-made device, or natural floating object, whether anchored or not, that is capable of aggregating fish. Purse seiners set on a variety of school types or 'associations', ranging from schools associated with floating objects, such as logs and other naturally occurring debris, man-made FADs, and dead whales, to schools swimming with live animals such as dolphins, whales and whale sharks (the latter is uncommon in the western and central Pacific, although it is a method used historically in the eastern Pacific). Sets associated with FADs have higher bycatch levels than do sets on free-swimming schools, particularly in the western part of the western and central Pacific Ocean.

Sets are also made on tuna schools not associated with floating objects or other animals; these may be free-swimming schools that are usually feeding on baitfish or schools associated with current interfaces and areas of upwelling. Such sets are collectively termed school sets.

For more information on management settings (including conservation and management measures) for skipjack see the annual operational plan.

## Incidental interactions with endangered, threatened and protected species

*New Zealand Fishery*

During the early period of observed fishing (1976-83), 26 common dolphins were caught (with 13 released alive) when purse seining for skipjack. These were likely to be isolated accidental incidents as these catches were reported from only two of the nearly 3000 sets observed (0.2% occurrence in observed sets).

No interactions with non-fish species (e.g. seabirds, turtles, and marine mammals) were observed or reported in 2009. Observer reports have noted sightings of marine birds and mammals around purse seine vessels but they do not appear to interact with the fishing activities of the vessel. Bottlenose and common dolphins were sometimes observed but the vessel did not set in the vicinity of these dolphins.

*WCPFC Fisheries*

There is no information to suggest that marine mammals are caught by the purse seine fishery in the Western and Central Pacific Ocean (unlike in the purse seine fisheries in the eastern Pacific).

Marine reptiles are known to occur in association with drifting and anchored FADs. Of 493 sets observed during 1993/94, the catch rate was 1.34 turtles per 100 school sets and 1.92 turtles per 100 log sets (none of these data from New Zealand vessels). Most of these turtles were released alive.

WCPFC has adopted provisions to manage any incidental captures of turtles, which may become entangled in purse seine nets or in FADs (in the tropical fishery) (CMM 2008-03). These measures apply to both the domestic and tropical fishery, and have been implemented for New Zealand vessels through codes of practice.

### Benthic interactions

The method of purse seining does not have adverse effects on benthic habitats so long as the net depth is appropriate for the water depth. However, benthic species have been known to have been taken in purse seine nets, indicating that purse seine vessels may sometimes fish in shallower waters (relative to their net depth). Purse seine fishing for skipjack usually occurs some distance off the coast. Shallow water extends offshore for considerable distances on the west coast of the North Island, and in this area there is some risk of benthic impacts, although operators report using shallower nets than those used in tropical fisheries.

# 3. Operational objectives for skipjack fisheries

The operational objectives in this document provide greater detail on how the management objectives for highly migratory species will be implemented in relation to skipjack. This section provides the following information for the operational objectives identified:

- **Assessment**: What is the current status of the fishery in relation to the objective
- **Risk**: What is likelihood that current management will not achieve the objective?
- **Priority**: What is the priority associated with achieving the objective?
- **Performance criteria**: How will performance be measured?
- **Actions**: what actions would be required in order to achieve the objective over time, bearing in mind the priority of the objective, and the cost-effectiveness of actions required to achieve it?

The priorities are based on the following criteria:

| Priority | Description |
|---|---|
| **P1** | Management objectives that are considered a high priority for delivery. The focus in the early years of the National Fisheries Plan for Highly Migratory Species will be to deliver services and complete the tasks for the fishery-specific operational objectives that underpin P1 management objectives. |
| **P2** | High priority but longer term management objectives. Typically this is because the successful completion of more than one fishery-specific operational objective is required before the management objective can be achieved. |
| **P3** | Management objectives that have a high priority but successful implementation is influenced by external factors. The influence of external factors can mean that despite a priority focus, these objectives may not be achieved during the initial five year timeframe. |
| **P4** | Management objectives where the timeframe for the delivery will be during the latter part of the five year period. In some instances the management objectives may be achieved before the five year period has elapsed but in others successfully achieving the management objective will not occur until the second five year period. |

## *Management and operational objectives to support Use Outcome*

Fisheries resources are used in a manner that provides greatest overall economic, social and cultural benefit

| | |
|---|---|
| Management Objective 1 | Promote a viable and profitable tuna fishery in New Zealand |

| | |
|---|---|
| Operational objective 1.5 | Regularly monitor the need for more active management of skipjack, based on utilisation criteria |

**Assessment:**

The New Zealand skipjack fishery is not managed under the quota management system (QMS) or other catch limits. Catches vary depending on the availability of skipjack within New Zealand waters, as well as the level of effort in the fishery. The Fisheries Act 1996 establishes both sustainability and utilisation criteria for determining whether or not to manage a stock under the QMS within New Zealand fisheries waters. In relation to the utilisation criteria, the existing management framework may not be ideal to promote orderly development of the fishery. For example, uncertainty in relation to future allocation of rights may hinder investment in the fishery. However, there are mixed views on whether there is scope for any further investment in or expansion of the fishery, noting the views of some participants that increasing the number of vessels may reduce the fish available to each vessel.

The Government's preference is for the QMS as a long term management arrangement. Other stakeholders have a range of views. QMS management is likely to be supported by iwi because Maori will receive an allocation of 20% of the TACC on introduction to the QMS. In the past some industry members have supported the proposal but others have not.

**Risk:** Low

**Performance criteria**

- Relevant statutory considerations as to whether a stock or species may be introduced to the QMS are contained in the QMS introduction standard (see http://fs.fish.govt.nz) and include whether existing management provides for utilisation that enables social, cultural, and economic well-being. Any alternative management arrangement would need a similar focus.

**Priority: P2**

**Actions**

- Assess skipjack against the QMS standard and/or the need for alternative management arrangements as and when required

| | |
|---|---|
| Operational objective 1.6 | Maintain catch-based attribution of cost recovery levies |

**Assessment:**

Ministry of Fisheries levies are charged for all key target and bycatch species, including skipjack. Levies cover directed services such as research and generic services such as compliance and registry services. Generic levy charges are derived from a combination of total allowable commercial catch (TACC; for QMS species) or recent catches (for non-QMS species) and port price. Because of its highly migratory nature, skipjack catches can be variable from year to year and a system of basing cost recovery on actual catch rather than on the catch limit or TACC is considered by industry to be fairer. The policy preference is generally to use TACC for QMS stocks, so any change for skipjack (and other HMS stocks) would require close consideration. However, there is a strategic advantage in maintaining high TACs for HMS stocks until national allocations are determined, so ways of minimising unintended effects of a high TAC on cost recovery levies should be sought. Alternatives become relevant if and when skipjack is introduced into the QMS.

**Risk:** Medium

**Performance criteria**

- Generic cost recovery levies not disproportionately high for skipjack

**Priority: P2** (depends on timing of any QMS introduction process).

**Actions**

- (links to action 1.1 of National Fisheries Plan for HMS)
- Review or contribute to review of cost recovery levies that promotes equitable approach for HMS fisheries

| | |
|---|---|
| Operational objective 1.7 | Devise incentives to add value to/and or reduce wastage in the skipjack fishery |

**Assessment:**

Troll/pole techniques are used elsewhere in the Pacific and Indian Oceans to land better quality product. Some environmental non-governmental organisation campaigns are currently highlighting their support for this method as a basis for more sustainable and equitable tuna fisheries. Pole and line fishing uses different vessels, with different crewing requirements, than those currently in use. The application of this technique to New Zealand conditions is largely untested. Unresolved issues include access to suitable bait. Line fishing capacity is considered insufficient to match current catches.

Under current methods of fishing, wastage of skipjack can occur through a 'skunk shot' that although unsuccessful in netting fish results in fishing-related mortality. Spoilage may be caused by gear failure or through problems with storage that affect the quality of the catch. Tuna may also be discarded by the cannery because they are too small (typically <1.4kg), are soft or smashed or the vessel has been too heavily loaded. While some sources of wastage are unavoidable, others are not.

WCPFC now requires retention of all purse seine catches in the tropical fishery (i.e. no discarding of unwanted fish such as juveniles), coupled with 100% observer coverage. Importantly, fish can be released prior to nets being brought alongside the vessel so that conservation benefits can be realised by the live release of unwanted fish.

Seafood markets are also beginning to value product from fisheries that are sustainable more highly, especially if this can be documented through certification. Some Pacific countries are currently applying for certification for skipjack fisheries in their waters based on unassociated schools. Assessment of this application will be of interest to New Zealand operations both in the Pacific and in New Zealand fisheries waters.

**Risk:** Low–Medium

**Performance criteria**

- Increased per-unit value of landed catch
- New Zealand-caught skipjack achieves environmental certification

**Priority: P4**

**Actions**

- Implement a catch retention plan for the tropical fishery
- Industry to investigate options for adding value to catch as desired e.g. certification, alternative methods etc
- Provide support as necessary for MSC certification process

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| Operational objective 1.8 | Manage the impacts of any fishing in New Zealand waters under provisions of the US Tuna Treaty |

**Assessment:**

The US Tuna Treaty provides for access to up to 40 US purse seiners, with an option for 5 additional licenses reserved for joint venture arrangements, to fish for skipjack in the EEZs of Pacific Island Parties including New Zealand.

The agreement was last ratified in March 2002, when the Parties agreed to extend the related Economic Assistance Agreement between the United States, the Forum Fisheries Agency (FFA) and Pacific Island states, for a term of 10 years. Preparation for renegotiation of the Treaty recommenced in 2009.

Voluntary arrangements apply for the access of US vessels to the New Zealand EEZ under the Treaty. These arrangements are important to minimise any impacts on New Zealand fishers.

**Risk:** Medium— US vessels have neither fished nor indicated an intention to fish New Zealand fisheries waters for some time, but additional controls being placed on the tropical fishery may make this option more attractive.

**Performance criteria**

- Fishing effort in the New Zealand EEZ and fisheries waters is consistent with the abundance of skipjack
- Voluntary arrangements for access to the New Zealand EEZ under the Treaty are maintained.

**Priority: P3**

**Actions**

- Monitor and process any applications made under the US Tuna Treaty to fish in New Zealand fisheries waters
- Monitor and critically review the New Zealand position with regard to the renegotiation of the US Tuna Treaty, including keeping stakeholders informed and considering their views in the development of the New Zealand position.

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| Management Objective 3 | Deliver fair opportunities for access to HMS fisheries |

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| Operational objective 3.3 | Implement a Code of Practice for skipjack fishing |

**Assessment:**

A draft code of practice has been negotiated to reduce potential conflicts between purse seining and gamefishing, covering the following main topics:

- Guidelines for on-the-water conduct to provide guidance about who would have access to a particular school in various situations;
- A communication protocol for how the parties will stay in touch with each other
- An appendix to the code of practice outlining areas of interest to recreational fishers at specified times around fishing competitions; industry would retain the right to fish in registered areas, but would fish alternative areas if possible. If industry needed to fish at registered areas during specified times, they would notify the agreed point of contact for recreational fishers.
- Annual review of the operation of the code of practice

Other purse seine agreements have already been negotiated in areas of inter-sector conflict, including inshore areas identified as preferred recreational fishing areas, and seasonal closures during yellowfin tournaments in the eastern Bay of Plenty.

**Risk:** Low–Medium— the code of practice is intended to provide a constructive way for the sectors to work together. If annual reviews indicate the code is not being successful, this objective will likely need revisiting.

**Performance criteria**

- as identified in the code of practice and reviewed annually

**Priority: P3**

**Actions**

- finalise and implement code of practice
- annually review operation of code of practice

## *Management and operational objectives to support Environment Outcome*

The capacity and integrity of the aquatic environment, habitats and species are sustained at levels that provide for current and future use.

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| Management Objective 6 | Maintain a sustainable fishery for HMS within environmental standards |

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| Operational objective 6.6 | Promote sustainable management of skipjack in the Western and Central Pacific including allocation of rights in the fishery |

**Assessment:**

Setting an overall total allowable catch at a sustainable level (whether this limit is expressed through controls on catch and/or effort), and allocating rights to parts of the available catch are important steps for overall sustainable management. This remains relevant even though the skipjack stock is not considered to be overfished, and nor is overfishing occurring at present. The WCPFC is struggling to implement effective measures to manage fishing effort for skipjack. Japan has attributed a decline in skipjack in its waters to excess fishing capacity in the equatorial area. These factors reinforce the need for effective management of the skipjack fishery.

The WCPFC Convention provides for members of the Commission to determine stock-specific reference points and the actions to be taken if the reference points are exceeded (Article 6(1)(a)). This provision has not yet been implemented. Current controls adopted by WCPFC tend to set allocations by flag state outside of EEZs, while within the EEZs of Pacific Island countries, total allowable effort controls are used as a proxy for controlling catches.

Maintaining the stock size of skipjack in the western and central Pacific Ocean above that required to support the maximum sustainable yield is likely to be in New Zealand's best interests. There is a significant risk that the stock retracts its range as it declines, which could in turn affect the availability of skipjack within New Zealand waters. While the domestic fishery is based on a portion of the stock (juveniles) that may be less subject to change under heavy fishing pressure, there is some evidence from other margins of the fishery that availability may already be affected under current fishing conditions (e.g. in Japanese coastal waters).

**Risk:** Medium— skipjack is not currently overfished, and is not at risk of overfishing occurring under prevailing conditions (e.g. current recruitment levels). However, the risk remains medium because some members want to maximise catches from this fishery, while New Zealand has additional objectives including maintaining the current distribution and range of skipjack.

**Performance criteria**

- Management targets for skipjack and associated species are consistent with the New Zealand harvest strategy standard (see www.fish.govt.nz)
- WCPFC identifies reference points and targets

**Priority: P1**

**Actions**

- Identify and advocate for targets and/or limits for skipjack within the Western and Central Pacific Convention area by 2012.
- Monitor the New Zealand fishery for any signs of stock contraction

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| Operational objective 6.7 | Regularly monitor the need for more active management of skipjack based on sustainability criteria |

**Assessment:**

New Zealand fisheries law provides a range of options for sustainability measures, from catch and/or size limits, to fishing seasons, method restrictions, and closed areas. Another option is to introduce skipjack into the QMS. As outlined under objective 1.4, the QMS is the Government's preferred management regime for skipjack in New Zealand fisheries waters in the long term.

Pacific-wide the fishery is not considered to be overfished (although see objective 8.9), and there may be some potential for further development in the skipjack fishery within New Zealand fisheries waters. However, availability of fish from year to year does vary, and could potentially lead to increased competition between vessels in poorer years if capacity does increase.

Section 17B of the Fisheries Act 1996 outlines that for skipjack taken outside New Zealand fisheries waters, the Minister may make such stocks subject to the QMS only to give effect to a national allocation or other management measure by an international fisheries organisation in relation to that stock (see 17B(6)).

**Risk:** Low— While the QMS is the preferred management regime, scientific advice is that there are currently no sustainability concerns (see also objective 1.4 regarding utilisation criteria for QMS introduction).

**Performance criteria**

- Relevant statutory considerations as to whether a stock or species may be introduced to the QMS are contained in the QMS Introduction standard and include whether existing management is maintaining the potential of the stock or species to meet the reasonably foreseeable needs of future generations; and whether existing management avoids, remedies, or mitigates any adverse effects of fishing for the stock or species on the aquatic environment.

**Priority: P2**

**Actions**

- Annually assess the need for further management within New Zealand fisheries waters required to support WCPFC conservation and management measures
- Assess skipjack against QMS standard as required

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| Management Objective 7 | Implement an ecosystem approach to fisheries management, taking into account associated and dependent species |

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| Operational objective 7.3 | Manage bycatch of juvenile tuna in tropical skipjack fisheries in accordance with WCPFC conservation and management measures |

**Assessment:**

WCPFC has agreed a variety of input controls to minimise bycatch of juvenile bigeye and yellowfin tuna on FADs used in purse seining for skipjack, as summarised on page 6. Members are required to develop and implement FAD Management Plans, including measures to reduce the attractiveness of FADs to unwanted bycatch species. Purse seine vessels are also subject to 100% observer coverage, are required to retain all catches, and the use of FADs is prohibited in certain months.

In New Zealand fisheries waters only very small amounts of bycatch are reported (see table 1 above).

**Risk:** Medium—The **tropical skipjack fishery** requires active management to reduce bycatch of juvenile bigeye and yellowfin tuna.

Low— **Within New Zealand fisheries waters** juvenile bigeye is not taken as a bycatch in purse seine fisheries and yellowfin is an occasional bycatch only

**Performance criteria**

- Compliance with WCPFC conservation and management measure/s
- Bycatch routinely assessed using information from the fishery that reflects current fishing distribution and practices

**Priority: P1**

**Actions**

- Implement any actions required by the WCPFC in the tropical fishery, including: seasonal closures to fishing using FADs; a FAD management plan and catch retention plan;
- Investigate ways to reduce juvenile bigeye bycatch while maintaining skipjack catches;
- Maintain sufficient observer coverage in the fishery within New Zealand fisheries waters to monitor bycatch.