



Annual Review Report

for Highly Migratory Species Fisheries
2016/17

Prepared by the Highly Migratory Species Team
Ministry for Primary Industries

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Contents

1	Overview	3
2	Key Focus Areas	3
2.1	KFA 1: Manage interaction of HMS fisheries with seabirds	3
2.1.1	Seabird proxy targets	4
2.1.2	Species-specific action plans	6
2.1.3	Best practice	6
2.1.4	International actions	6
2.1.5	Key performance indicators	7
2.2	KFA 2: Manage interaction of HMS fisheries with sharks	7
2.2.1	Shark finning ban	7
2.2.2	Best practice	8
2.2.3	International actions	8
2.2.4	Key performance indicators	9
2.3	KFA 3: Support industry to obtain and maintain third-party certifications	9
2.3.1	Key performance indicators	9
3	Business as Usual tasks	10
3.1	BAU 1: Support profitable tuna fisheries in New Zealand	10
3.2	BAU 2: Engage with fisheries stakeholders	10
3.3	BAU 3: Monitor commercial fisheries	10
3.4	BAU 4: Ensure compliance with management measures	11
3.5	BAU 5: Strengthen management of non-commercial HMS fisheries	13
3.6	BAU 6: Develop and implement HMS research plan	13
3.7	BAU 7: Contribute to international processes including meetings of CCSBT and WCPFC	13
3.8	BAU 8: Contribute to implementation of the MPI's MOU on pacific capacity development	15
4	Stock status for HMS Species	16
4.1	Historical stock status trajectory and tuna stocks	16
4.1.1	Stock assessment updates	16
4.1.2	Albacore (Assessed 2015)	17
4.1.3	Bigeye (Assessed 2014)	17
4.1.4	Pacific bluefin (Assessed 2016)	18
4.1.5	Skipjack (Assessed 2016)	18
4.1.6	Southern bluefin tuna (Assessed 2014)	19
4.1.7	Striped marlin (Assessed 2013)	20
4.1.8	Swordfish (Assessed 2013)	21
4.1.9	Yellowfin (Assessed 2014)	22
4.2	Catch against Total Allowable Commercial Catch (TACC)	22
4.2.1	Bigeye (BIG)	22
4.2.2	Blue shark (BWS)	23
4.2.3	Mako shark (MAK)	23
4.2.4	Pacific bluefin tuna (TOR)	24
4.2.5	Porbeagle shark (POS)	24
4.2.6	Southern bluefin tuna (STN)	25
4.2.7	Swordfish (SWO)	25
4.2.8	Yellowfin (YFN)	26
4.3	Catches of non-quota species	26
4.3.1	Albacore	26
4.3.2	Skipjack	26

5	Environmental reporting	27
5.1	Seabirds - surface longline fisheries	27
5.2	Turtles - surface longline fisheries	30
5.3	Other non-target associated and dependent species	31
6	Cost recovery levies	33
7	List of HMS research projects as of February 2017	34
8	Observer monitoring – days by fishery	37
9	Non-commercial monitoring	38
9.1	Gamefish tagging rates and numbers from the New Zealand Gamefish Tagging Programme	38
9.2	Striped marlin recreational catch	39

1 Overview

The Annual Review Report for Highly Migratory Species Fisheries 2016/17 (ARR) reviews the delivery of tasks identified in the Annual Operational Plan for Highly Migratory Species Fisheries 2016/17 (AOP), as well as overall performance of highly migratory species (HMS) fisheries in relation to some of the wider HMS management objectives.

Tasks identified in the AOP include Key Focus Areas (KFAs) and Business as Usual tasks (BAUs) that were designed to contribute towards the 12 Management Objectives defined in the National Fisheries Plan for Highly Migratory Species 2010 (HMS Fisheries Plan):

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

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

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

2 Key Focus Areas

2.1 KFA 1: MANAGE INTERACTION OF HMS FISHERIES WITH SEABIRDS

New Zealand's *National Plan of Action to reduce the incidental catch of seabirds in New Zealand fisheries* (NPOA-Seabirds) sets out goals and objectives for the conservation and management of seabirds. The long-term objective of the plan is:

New Zealand seabirds thrive without pressure from fishing related mortalities, New Zealand fishers avoid or mitigate against seabird captures, and New Zealand fisheries are globally recognised as seabird friendly.

During the 2015/16 fishing year, events of high seabird captures were observed in the surface longline fishery, particularly when vessels were targeting southern bluefin tuna in southern waters. The seabirds included threatened species of albatrosses and petrels. In response, the Ministry for Primary Industries (MPI) increased observer coverage across the fleet, raised the issue as a key focus area at stakeholder meetings, and released a discussion document for consultation on proposing to strengthen seabird mitigation requirements by mandating the use of line weighting. A key issue raised during consultation was the health and safety risk associated with line weighting, therefore MPI are allowing for government-wide consideration to ensure the fishing industry would be in the best position to be able comply safely with measures.

During 2016/17, the Department of Conservation (DOC) Protected Species Liaison Officer Programme turned its focus to mitigating incidental seabird captures in the surface longline fishery. Liaison officers visited every vessel in the fleet and placed on board seabird mitigation plans (SMPs), which included vessel-specific mitigation plans. The programme also introduced seabird triggers (which mirror those in place for deepwater fisheries), which skippers report to the liaison officers via telephone and email communications.

2.1.1 Seabird proxy targets

The practical objective of NPOA-Seabirds is to continuously improve New Zealand fisheries with regard to incidental seabird captures. Capture rate reduction targets are intended to provide a gauge against which this objective can be measured. In the three HMS fishery groups¹, only the large surface longline fishery has had sufficient observer coverage and data for capture rates to be used as a measure of successful management over time. In 2016/17, these large vessel surface longliners did not fish in New Zealand as a result of the May 2016 changes to laws around foreign charter vessels, and therefore capture rates were not able to be calculated. Instead, seabird proxy measures were developed in the 2016/17 AOP for the small surface longline and swordfish surface longline fisheries. These proxy measures are:

1. Mitigation use rates: Compliance rate of observed mitigation use (tori line, line weighing, and night-setting) (compliance rates to be reviewed quarterly and annually in order to track improvement over time)
2. SMPs: Percentage of vessels operating in the fleet with Protected Species Liaison Officer Programme operational plans – now SMPs – in place (to be coordinated by the Liaison Officers).
3. Questionnaire responses: Protected Species Liaison Officer Programme operational plan responses about mitigation (to be coordinated by the Liaison Officers)
4. Level of self-reporting: Levels of self-reporting of bycatch will be measured using the percentage of trips (observed and unobserved) where non-fish bycatch forms have been filed

Some of the proxy measures listed above are aimed at assessing behaviour in the fleet as an alternative to a numerically based capture rate. Improved behaviour and buy-in from operators should translate into improved practices and therefore fewer incidents of avoidable bycatch. These indicators will allow us to track progress towards this goal. This is the first review of the seabird proxy measures, covering the 2015/16 fishing year, which should be used as a baseline to which future years can be compared.

¹ Fishery group definitions are according to the Seabird Risk Assessment and are defined as the large vessel surface longline, small vessel tuna surface longline, and small vessel swordfish surface longline fisheries.

1. Mitigation use rates

Tori line, line weighing, and night-setting use rates on observed sets (use rates to be reviewed quarterly and annually in order to track improvement over time).

This review considered data from observer trips during the 2015/16 fishing year (all small vessel surface longliners).

Table 1. Mitigation use rates in the surface longline fishery from 342 observed sets during the 2015/16 fishing year.

	Tori lines	Night setting	Line weighing
Use Rate	79%	89%	24%

*Note: night setting is determined by comparing the observer reported start and end of set times with the hours of darkness calculated for each set date and position using the CCAMLR Nautical Twilight Calculator. Setting must start no more than 15 minutes before evening twilight and end before morning twilight to be categorised night setting.

Note: reporting does not specify if lines were weighted in accordance with the regulations.

2. SMPs (number)

Number of vessels with Protected Species Liaison Officer Programme operational plans in place (to be coordinated by the Liaison Officers).

At the end 2015/16 fishing year, there were 18 surface longline vessels with operational plans, and 3 surface longline vessels with draft operational plans.

These operational plans were revised and refined into SMPs, which by the end of the 2016/17 fishing year, liaison officers had placed on every vessel operating in the surface longline fishery (38 vessels).

3. Operational plans (questionnaire responses)

Protected Species Liaison Officer Programme operational plan responses about mitigation (to be coordinated by the Liaison Officers).

SMPs replaced the operational plans, therefore responses to the operational plan questionnaire would not be comparable to this year. Furthermore, the plan format may change each year to adapt to the needs of the fishery and the Protected Species Liaison Officer Programme, therefore it is unlikely to be possible to track and compare responses from year to year.

4. Level of self-reporting

Levels of self-reporting of bycatch will be measured using the percentage of trips (observed and unobserved) where non-fish bycatch forms have been filed.

In 2014/15, at least one non-fish bycatch form was submitted for 6.2% of non-observed trips, compared to 34.5% of observed trips.

In 2015/16, at least one non-fish bycatch form was submitted for 9.4% of non-observed trips, compared to 55.7% for observed trips.

The low percentage of non-observed trips filing non-fish bycatch forms compared with the higher percentage of observed trips filing non-fish bycatch forms suggests a level of underreporting of non-fish bycatch over the last two fishing years.

2.1.2 Species-specific action plans

In line with NPOA-Seabirds, a Species-Specific Action Plan for Gibson's and Antipodean Albatrosses, the two highest risk seabird populations in HMS fisheries, was included in the 2016/17 AOP as an Appendix. This was considered when establishing key performance indicators for the seabird KFA and will be considered in the 2017/18 AOP. Also, a working group for Antipodean albatross was set up in light of poor population status assessed for this species. The first working group meeting was held at MPI in May 2017.

2.1.3 Best practice

The practical objective of NPOA-Seabirds includes that all New Zealand fishers implement best practice mitigation measures relevant to their fishery.

During 2016/17, DOC completed their work on improving efficacy of tori lines, which included work on 13 surface longline vessels. In addition, DOC also trialled a new prototype hook shielding device as an alternative seabird mitigation measure for surface longline fisheries. The results will be reported next year.

2.1.4 International actions

New Zealand cooperates with other countries to manage HMS and associated species, including seabirds, via regional fisheries management organisations (RFMOs). Two RFMOs are of direct relevance to the management of New Zealand fisheries for HMS:

- The Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- The Western and Central Pacific Fisheries Commission (WCPFC)

In March 2017, New Zealand hosted the twelfth CCSBT Ecologically Related Species Working Group. Seabirds covered a large portion of the meeting's agenda, with discussion points including:

- Information on seabird stock status
- New Zealand's southern hemisphere seabird risk assessment findings
- Estimates of seabird mortality (calculating bycatch rates and extrapolation to total estimates)
- Assessment and advice on seabird mitigation measures, including discussing criteria for the definition of "high risk areas" for seabirds
- Improving seabird species identification

New Zealand presented on the southern hemisphere seabird risk assessment and on proposals to progress work on defining "high risk areas" for seabirds. New Zealand was able to obtain support from other members on both these initiatives, including commitments towards greater cooperation in the coming year.

At the WCPFC meeting in December 2016, the New Zealand delegation proposed to amend WCPFC's seabird mitigation measures, extending the boundary from 30 degrees South to 25 degrees South. Despite broad support and recognition of the risks to New Zealand's vulnerable seabirds, agreement was not reached.

2.1.5 Key performance indicators

Participate in meeting of Seabird Advisory Group and MPI and DOC joint seabird planning group

The HMS team attended all Seabird Advisory Group meetings and one MPI-DOC planning meeting during the 2016/17 fishing year.

Implement plan to track data for proxy targets (in lieu of capture rates) and set improvement goals for 2017/18

The seabird proxy measures were revised, and a plan was put in place to track proxy data. A base year (2015/16) was selected for subsequent data to be compared to. Seabird proxy targets have been improved and clarified in the 2017/18 AOP.

Complete Southern Hemisphere Seabird Risk Assessment

The first iteration of the Southern Hemisphere Seabird Risk Assessment was completed and MPI Fisheries Science provided an update of this progress to the CCSBT Ecologically Related Species Working Group at the meeting March. This included providing a method paper and a rough cut, which used New Zealand data.

Continued advocacy at CCSBT and WCPFC

New Zealand continued to advocate for appropriate seabird issues at international meetings.

2.2 KFA 2: MANAGE INTERACTION OF HMS FISHERIES WITH SHARKS

A revised *National Plan of Action for the conservation and management of sharks* (NPOA-Sharks) was adopted in 2014. The purpose of NPOA-Sharks is:

To maintain the biodiversity and the long-term viability of all New Zealand shark populations by recognising their role in marine ecosystems, ensuring that any utilisation of sharks is sustainable, and that New Zealand receives positive recognition internationally for its efforts in shark conservation and management.

MPI is focused on understanding and managing interaction of HMS fisheries with sharks. All shark-related actions are aligned with the goals of NPOA-Sharks in the following key areas:

- Biodiversity and long-term viability
- Utilisation, waste reduction, and elimination of shark finning
- Domestic engagement and partnership
- Non-fishing threats
- International engagement
- Research and information

2.2.1 Shark finning ban

Shark finning was banned on 1 October 2014, meaning that it is illegal to remove the fins from a shark and discard the body of the shark at sea. The *Fisheries (Commercial Fishing) Regulations 2001* require that any shark fins landed must be naturally attached to the body of the shark. The regulations provide exceptions to the “fins naturally attached” requirements for eight species of shark, including the three main sharks caught in HMS fisheries: blue shark, mako shark, and porbeagle shark. Blue shark fins may be removed from the body, but must be attached to the trunk after processing but before landing. For several other Quota Management Species (QMS) sharks, including mako sharks and porbeagle sharks, fins may be landed separately but in accordance with a gazetted ratio of fins to total greenweight.

The shark finning ban was accompanied by a change to Schedule 6 of the *Fisheries Act 1996*, which allows for the returning of certain QMS fish to sea, under specific conditions. Schedule 6 now states that blue sharks, mako sharks, and porbeagle sharks may be returned to the sea dead or alive. Reporting of these returns must note whether the fish was alive (and likely to survive) or dead, using specific destination codes, and annual catch entitlement (ACE) based on greenweight will be paid accordingly.

Ongoing monitoring work associated with the shark finning ban includes monitoring shark landings, including use of ratios (where allowed) and the promotion of best practice for the handling and release of sharks.

In the second half of 2017, the HMS team will contribute to a review of the shark fin ban, specifically looking at compliance with landing, discarding, and reporting requirements, and the effects of the ban on catch levels. The review will incorporate data and feedback from Fisheries Officers, Fisheries Observers, and fishers. The review will contribute to the upcoming update of NPOA-Sharks and any required review of shark finning regulations.

2.2.2 Best practice

Research into shark mitigation in surface longline fisheries has not resulted in the establishment of “best practice” when it comes to avoiding shark captures, so efforts to decrease impact of HMS fisheries on sharks will focus on increasing the likelihood of survival among sharks that are caught, as well as on improving crew safety when handling sharks.

Objective 2.2 of NPOA-Sharks states that MPI should seek to, “minimise waste by promoting the live release of bycaught shark species, and develop and implement best practice guidelines for handling and release of live sharks.”

In 2017, the HMS team will seek to make progress on this objective by working with industry to draft “Safe Handling and Release” guidelines for surface longline and purse seine HMS fisheries, to be included in fishery-specific codes of practice. This work has been delayed along with the delay of the rest of the fishery-specific codes of practice. MPI will help where necessary to continue progress on these industry-led projects.

2.2.3 International actions

HMS sharks spend only part of their time in New Zealand waters and may migrate over considerable distances. New Zealand cooperates with other countries to manage these species via RFMOs, including WCPFC and CCSBT. Comprehensive management arrangements are required for the high seas and other national jurisdictions that take into account the individual characteristics of highly migratory sharks.

Following a Commission meeting in December 2016, WCPFC continues to work towards the development of a comprehensive approach to shark and ray conservation and management with a view to adopting a new Conservation and Management Measure (CMM) at the Commission’s annual meeting in 2018. The new CMM will seek to unify several existing shark CMMs, and could include:

- Policies on full utilization/prohibition on finning
- No retention policies
- Safe release and handling practices
- Gear mitigation, size limits or closures
- Management plans/catch limits
- Key species and their assessment schedules

- Species-specific limit reference points
- Any data reporting requirements beyond those contained in “Scientific data to be provided to the Commission”

At the CCSBT Ecologically Related Species Working Group in March, in relation to sharks, Members discussed:

- Information on stock status, including a porbeagle stock assessment
- Updates on the ecological risk assessment for sharks
- Estimates of shark mortality and associated uncertainty
- Approaches to reduce mortality on sharks

New Zealand presented a partial update of the 2014 Indicator-based analysis of HMS shark stocks status.

2.2.4 Key performance indicators

Review the shark fin ban in second half of the year

The review of the shark fin ban is on track to be completed during 2017.

Development and dissemination of best practice guidelines for “Safe Handling and Release”

These guidelines will be part of the industry-led update of fishery-specific codes of practice.

2.3 KFA 3: SUPPORT INDUSTRY TO OBTAIN AND MAINTAIN THIRD-PARTY CERTIFICATIONS

Marine Stewardship Council (MSC) certification requires independent assessment of fisheries against internationally recognised standards of sustainable fishing. Over the last 18 months, New Zealand’s albacore tuna troll fishery has been in assessment for re-certification, whilst Talley’s skipjack tuna purse seine fishery has been in assessment for certification for the first time. MPI participated in the assessment, reviewed the reports and supplied information as required.

2.3.1 Key performance indicators

The re-certification of albacore tuna troll fishery

Re-certification of the albacore troll fishery until February 2022 was announced in February this year.

The certification of skipjack tuna purse seine fishery

Certification of the skipjack purse seine fishery was delayed due to an objection and is still to be announced. The basis of the objection was that the fishery had been given a pessimistic score against one of the principles that it was assessed. The announcement of the certification is expected in June this year.

3 Business as Usual tasks

3.1 BAU 1: SUPPORT PROFITABLE TUNA FISHERIES IN NEW ZEALAND

MSC certification

In recent years, MSC certification has become a minimum requirement for access to preferred markets for albacore. This will assist with skipjack too along with the potential for a price premium. Obtaining and maintaining this certification is therefore important to the ongoing economic viability of these fisheries. MPI supported industry during the assessments of these fisheries where required.

Cost recovery

The First Principles Review of cost recovery commenced in late 2015. The review is being undertaken in two phases: the first phase focused on the development of a common framework to underpin cost recovery arrangements across MPI; and the second phase is a more detailed review of MPI's cost recovery arrangements.

A draft framework was publically consulted on in mid-2016. The second phase of work is underway and targeting improvements to MPI's cost recovery arrangements from 1 July 2018.

Support development of industry collective body

During 2016/17, Fisheries Inshore New Zealand (FINZ) spread their coverage to HMS fisheries, providing HMS fishers with an industry representative who will be able to lobby on their behalf and facilitate improved engagement between fishers, other stakeholders, and MPI. MPI supports this role and maintains regular communication with Oliver Wilson, the industry representative.

3.2 BAU 2: ENGAGE WITH FISHERIES STAKEHOLDERS

Engaging with HMS fisheries stakeholders is an important aspect of business as usual for the HMS team. Engagement with stakeholders occurs in a variety of ways through various fora. In 2016/17, MPI engaged with fisheries stakeholders via the following:

- Meetings of the HMS Fish Plan Advisory Group
- Longline Workshops held in Tauranga
- Pre-meeting consultations prior to attendance at CCSBT and WCPFC Commission and scientific meetings
- HMS Working Group meetings
- Various meetings with the Protected Species Liaison Programme officers
- Six week public consultation on the proposals to strengthen seabird mitigation requirements in the surface longline fishery
- Meetings with the Customary fisheries management team and discussions and writing up of protocols for consultation of HMS issues with iwi
- Communications with the HMS representative from FINZ

3.3 BAU 3: MONITOR COMMERCIAL FISHERIES

Information on HMS fisheries is collected from a variety of sources, including commercial reporting, non-commercial reporting, observer monitoring, and scientific research. Observer data provides the most detailed quantification of catch on a set-by-set basis, and is used for a variety of purposes including as inputs into characterisations and stock assessments. New Zealand also has obligations to WCPFC and CCSBT to provide observer coverage as follows:

- **CCSBT:** a target of 10% of catch and effort
- **WCPFC:** a target 100% coverage for purse seine vessels operating on the high seas between 20° North and 20° South (observers are sourced from the WCPFC regional observer programme); for other methods operating on the high seas, a minimum target of 5% coverage sourced from either from the regional observer programme or, if fishing is immediately adjacent to a members exclusive economic zone (EEZ), the national observer programme.

In 2015/16, domestic observer coverage for HMS fisheries totalled 578 days out of a planned 930 days. The planned 930 days included 260 days for large vessel surface longliners, which require 100% observer coverage. However, the large vessel surface longliners did not fish in New Zealand that year and consequently the planned observer coverage was not required. See Section 8 of this plan for a detailed description of observer coverage by fishery and area.

No observer coverage was planned for the large vessel surface longliners in 2016/17. Instead, more days were allocated to the small surface longline tuna fleet after some high seabird capture events at the end of the 2015/16 fishing year increased the profile of the fishery. Observer coverage for southern bluefin tuna fisheries was increased from a target of 300 days to 560 days (over the 10% requirement by CCSBT).

3.4 BAU 4: ENSURE COMPLIANCE WITH MANAGEMENT MEASURES

The most recent southern bluefin tuna season highlighted areas of particular concern in relation to non-compliance with mandatory seabird mitigation measures in the surface longline fleet.

On the international front, 2016 provided a unique opportunity to raise issues of illegal, unreported, and unregulated (IUU) fishing in the region, with our high seas patrol uncovering some troubling activities primarily relating to southern bluefin tuna catch. Those activities have since been raised with both CCSBT and WCPFC, as well as through direct discussions with the flag state of the vessels involved.

During the 2015/16 fishing year, 72 of 115 HMS vessels were physically inspected (62%), and there were several breaches detected which related to low-level recordkeeping and reporting. (However, those breaches may not directly involve HMS.)

One prosecution was taken against an operator for failing to use the required seabird mitigation device leading to a guilty plea. Two more incidents of non-compliance with seabird mitigation were pursued by compliance, with one leading to a warning and the other part of an on-going investigation.

CCSBT CDS

The CCSBT Catch Documentation Scheme (CDS) compliance levels continue to be high, with the main area for improvement being the reduction of duplicate tag numbers submitted into tagging data. In this regard, New Zealand is performing well below other CDS participants. Domestically, high levels of licensed fish receiver (LFR) errors tend to make data entry and administration difficult. The HMS team worked with LFRs during the 2016 southern bluefin tuna season to understand and prevent common errors, and has worked with authorised validators to understand their responsibilities relating to these errors.

In April 2017, new regulations came into effect in order to better implement the CDS in New Zealand. The *Fisheries (Southern Bluefin Tuna Catch Documentation Scheme) Regulations 2017* codify current MPI processes for administering the CDS and set out fisher, LFR, and general

requirements for complying with the system, including reporting and tagging of southern bluefin tuna. The new regulations also improve MPI's ability to respond to non-compliance with the CDS by defining specific offenses and fines, including infringement fees for reporting and other offenses.

The CCSBT Secretariat reports country CDS compliance statistics to the annual meeting of the CCSBT compliance committee. New Zealand's report for 2015 is shown in Table 3 below.

Table 2. CCSBT CDS Compliance Statistics

CDS (during 2015 Calendar year):	% of CMFs for exports where catch/harvest weights are the same on both exporter and importer copies	98.1%
	% of CMFs for exports where SBT catch/harvest numbers are the same on both exporter and importer copies ⁵	97.8%
	% of CMFs with all correctly corresponding CTFs (where required)	100%
	<ul style="list-style-type: none"> • % of CTFs where fish numbers exactly match CMF 	99.5%
	<ul style="list-style-type: none"> • % of CTFs where fish weights within 2.5% of CMF 	99.3%
	Number of Duplicate Tag Numbers Submitted in Tagging Data	389
	Has the Member responded to the issues identified in the Secretariat's 2015 reconciliation report yet?	Yes
	% of CMFs for Domestic Landings that contain complete and accurate information	100%
	% of CMFs for Exports that contain complete and accurate information ⁴	100%
	% of CMFs for Domestic Landings where the catch/harvest weight differs from the landed weight by $\leq 2.5\%$	100%

CMF: catch monitoring form; CTF: catch tagging form; SBT: southern bluefin tuna

3.5 BAU 5: STRENGTHEN MANAGEMENT OF NON-COMMERCIAL HMS FISHERIES

In 2016/17, an additional recreational representative joined the Fish Plan Advisory Group, attending both meetings and increasing our engagement with recreational fishing stakeholders. Attendees to this meeting were given the first external draft of the HMS Fisheries Plan for review and comments.

MPI continued to support the monitoring of recreational fisheries for HMS through voluntary reporting, including through the long-standing gamefish tagging programme and through targeted diary and logbook schemes.

The development of the recreational fishing mailing list by MPI's Recreational Fisheries team has given the HMS team the ability to contact hundreds of additional recreational stakeholders for relevant consultations.

3.6 BAU 6: DEVELOP AND IMPLEMENT HMS RESEARCH PLAN

Planning and implementing research related to HMS fisheries is achieved jointly by the HMS team and the Fisheries Science team at MPI. This is done with input from the, DOC and stakeholders. See Section 7 of this plan for a list of proposed and ongoing research projects. All research projects scheduled for the 2016/17 year met the requirements for their agreed milestones.

3.7 BAU 7: CONTRIBUTE TO INTERNATIONAL PROCESSES INCLUDING MEETINGS OF CCSBT AND WCPFC

An important aspect of BAU operations for the HMS team at MPI is contributing to international processes, including the work of CCSBT and WCPFC. In 2016, the HMS, International Fisheries Policy, Fisheries Compliance, and Fisheries Science team members attended several meetings for each of these RFMOs.

CCSBT

CCSBT meetings during the 2016/17 fishing year were:

- Scientific Committee, 5-10 September, 2016
- Compliance Committee, 6-8 October, 2016
- Annual CCSBT Meeting, 10-13 October, 2016
- Ecologically Related Species Working Group, 21-24 March, 2017

As part of BAU, MPI administers the CCSBT CDS and authorised vessel list, prepares and submits fisheries data, and prepares for annual subsidiary meetings.

At the 2016 Commission meeting, the Total Allowable Catch (TAC) was set for the next three-year TAC block (2018-2020). Of particular importance as part of the TAC setting exercise was the need for Members to agree on an initial allocation for non-member catch – a first for CCSBT. New Zealand strongly advocated for a precautionary approach when setting the non-member allocation based on the uncertainty surrounding the scale of this catch and the recent evidence of IUU fishing in this fishery.

Members agreed for 306 tonnes to be set aside for non-member catch, with the total global allocation set at 17,647 tonnes for the three-year block starting in 2018. This new global allocation has resulted in an increase to the New Zealand country allocation of 88 tonnes bringing our total allocation to 1,088 tonnes.

This year's Commission meeting also represented the first time that the European Union and South Africa took part as Members of the Extended Commission.

WCPFC

WCPFC meetings during the 2016/17 fishing year were:

- Regular Session of the Scientific Committee, 3-11 August, 2016
- Intersessional Working Group on a WCPFC CDS, 19-20 September, 2016
- Technical and Compliance Committee, 21-27 September, 2016
- Fish Aggregating Device (FAD) Management Options Intersessional Working Group, 29-29 September, 2016
- Annual WCPFC Meeting, 5-9 December, 2016
- New Zealand delegations also attended various Pacific Forum Fisheries Agency (FFA) and Te Vaka Moana meetings throughout the year.

Work at WCPFC this year primarily focused on seabirds, compliance monitoring, and harvest strategies, specifically relating to albacore and bigeye.

At the Commission meeting, the New Zealand delegation proposed to amend WCPFC's seabird mitigation measures, extending the boundary from 30 degrees South to 25 degrees South. Despite broad support and recognition of the risks to New Zealand's vulnerable seabirds, agreement was not reached. New Zealand took the lead in drafting the terms of reference for the Compliance Monitoring Scheme (CMS) review that will take place in 2017.

A number of components for harvest strategies were also addressed, including the development of interim indicators for the purse seine skipjack fishery, interim acceptable levels of risk for all four key tuna species, and rebuilding timeframes for bigeye tuna. The tight agenda didn't allow for much progress on the tropical tuna or South Pacific albacore bridging measures, but comments were received on draft versions for further development in 2017.

In regard to New Zealand industry fishing in the WCPFC area, New Zealand retained its existing allocation of high seas purse seine days for another year and qualified for a 2017 exemption from the prohibition of using fish aggregating devices on the high seas. This is because New Zealand achieved a verifiable reduction in bigeye catch by purse seine vessels to 55% of the 2010 to 2012 catch. To maintain this exemption, catches by New Zealand purse seine vessels must not catch more than 210mt of bigeye in 2017. Should this limit be exceeded, all high seas fishing using fish aggregating devices must cease immediately. MPI will notify all relevant permit holders when 80% of the 210mt is reached, after which permit holders must immediately commence daily reporting of bigeye catch.

Albacore remained a focus for FFA members at WCPFC who put forward a proposal that the WCPFC set an overall catch limit for South Pacific albacore with separate limits for EEZs combined and for the high seas. While not agreed New Zealand will lead further development of this proposal through 2017.

Another major focus of the Commission meeting was observer safety in the region. FFA worked collaboratively to ensure that the observer health and safety CMM was adopted by the Commission. This CMM provides for more certainty and security with regard to observers on fishing vessels both within EEZs and on the high seas.

Ongoing areas of interest for New Zealand at WCPFC include seabird mitigation technology, compliance monitoring, management of high seas areas, and the New Zealand Aid initiative to move to catch-based management arrangements.

3.8 BAU 8: CONTRIBUTE TO IMPLEMENTATION OF THE MPI'S MOU ON PACIFIC CAPACITY DEVELOPMENT

MPI has a supporting role providing technical assistance to develop Pacific countries' capacity in fisheries administration, specifically through improvements in their fisheries management and monitoring, control and surveillance capacity. In 2015/16, as in other years, work was done to continue building and maintaining strategic relationships with key resource providers in the Pacific region including the Pacific Community (SPC) and the FFA and to coordinate targeted provision of capacity building assistance to countries with which New Zealand has bilateral arrangements. Additionally, MPI focused on ongoing work as advice provider to the Administrator of Tokelau in the implementation of their *Offshore Regulations 2012*. MPI participated, through FFA, in developing the Tokelau Arrangement Catch Management Agreement for managing south Pacific albacore, and worked on New Zealand's strategy for moving the Pacific region towards catch based management. New Zealand also through Te Vaka Moana (TVM) to deliver capacity building workshops and developing TVMs next strategic plan.

4 Stock status for HMS Species

Table 3. Summary stock status information for HMS fisheries (*blue shaded cells indicate a change i.e. updated stock assessment and change to overfishing or overfished)

Stock	Last Assessment	Overfishing occurring	Stock overfished
Bigeye tuna	2014	Y	Y
Yellowfin tuna	2014	N	N
Skipjack tuna	2016	N	N
Albacore tuna	2015	N	N
Pacific Bluefin	2016	Y	Y
Southern Bluefin tuna	2014	N	Y
Swordfish	2013	N	N
Striped Marlin	2013	N	N

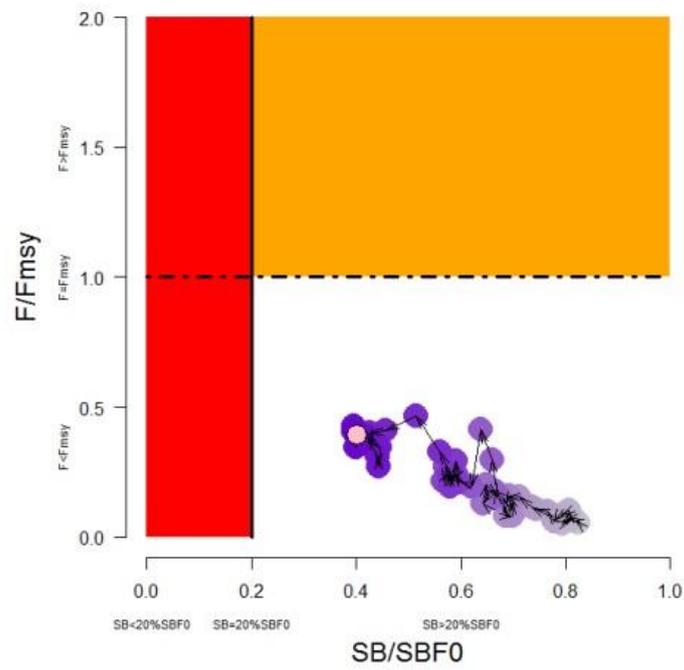
4.1 HISTORICAL STOCK STATUS TRAJECTORY AND TUNA STOCKS

4.1.1 Stock assessment updates

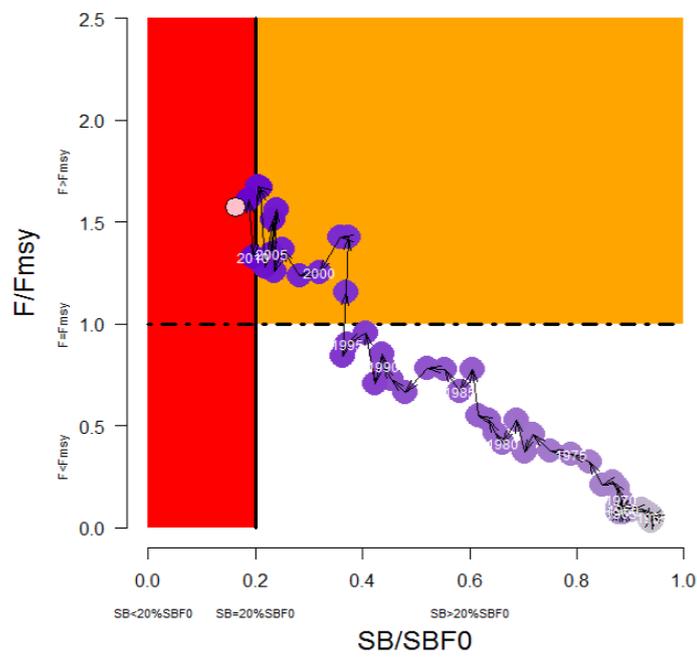
All assessments, except southern bluefin tuna, are presented to the Scientific Committee of WCPFC; the dates of the most recent assessment for each key species is shown in Table 3. In 2016, stock assessments for skipjack and Pacific bluefin tuna were updated.

Southern bluefin tuna stock assessments are carried out by the Scientific Committee of CCSBT. The most recent assessment was presented at CCSBT Extended Scientific Committee in September 2014. The assessment suggested that the southern bluefin tuna spawning biomass is at a very low fraction (9%) of its original biomass, as well as below the level that could produce maximum sustainable yield (MSY). However, there has been some improvement since the 2011 stock assessment. There was no information presented as part of the 2015 analysis of indicators to change this most recent assessment.

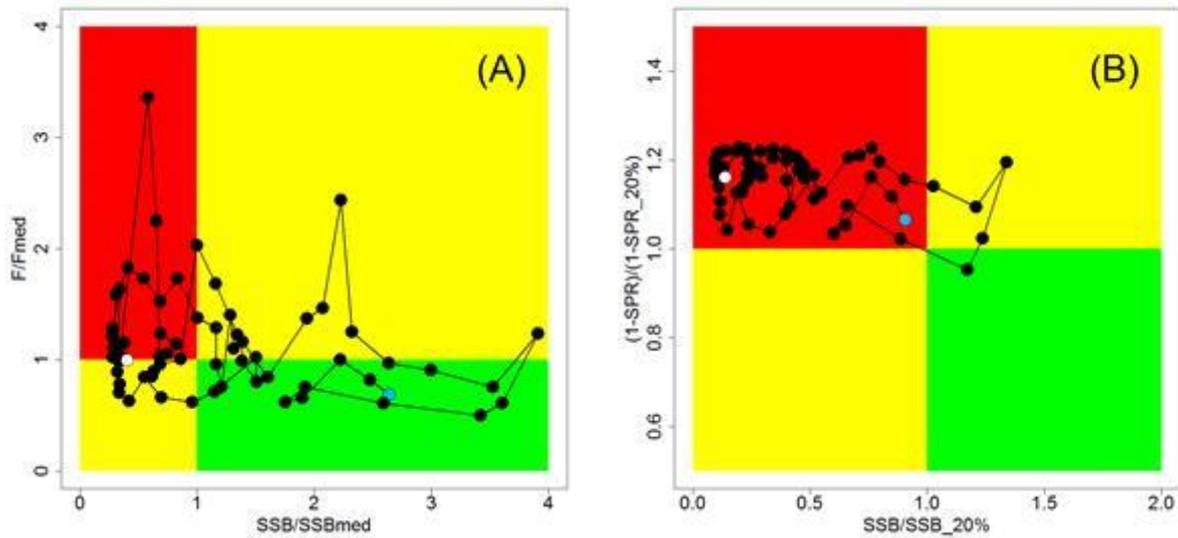
4.1.2 Albacore (Assessed 2015)



4.1.3 Bigeye (Assessed 2014)

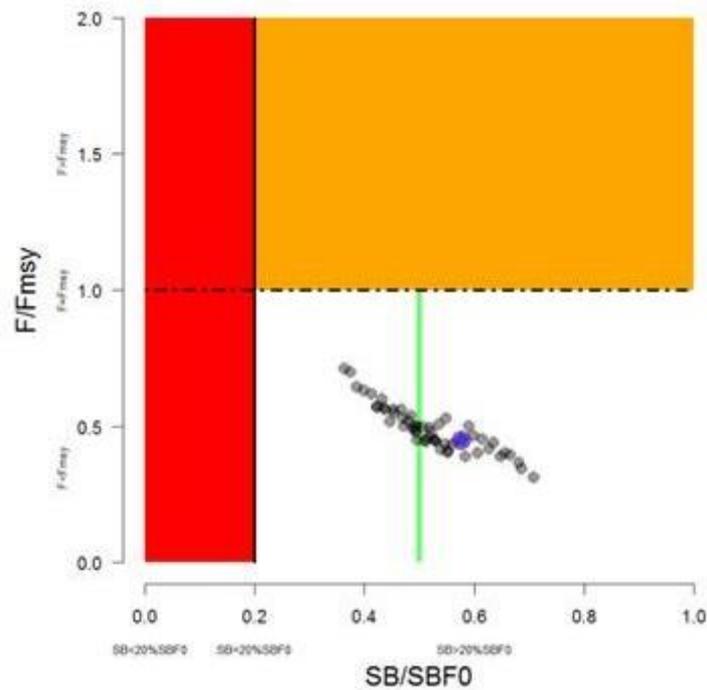


4.1.4 Pacific bluefin (Assessed 2016)



Kobe plots for PBF. (A) SSBMED and FMED; (B) SSB20% and SPR20% based. Note that SSBMED is estimated as the median of estimated SSB over whole assessment period (40,944 t) and FMED is calculated as an F to provide SSBMED in long-term, while the plots are points of estimates. The blue and white points on the plot show the start (1952) and end (2014) year of the period modelled in the stock assessment, respectively.

4.1.5 Skipjack (Assessed 2016)



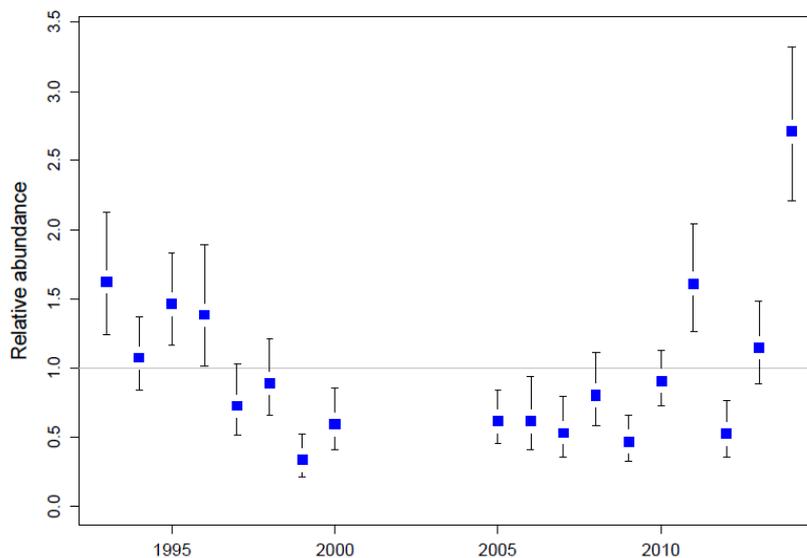
4.1.6 Southern bluefin tuna (Assessed 2014)

For southern bluefin tuna, CCSBT has agreed to a management procedure with the following parameters:

- To rebuild the status of stock to an interim rebuilding TRP of 20% of the original spawning stock biomass by 2035
- The management procedure shall be tuned to a 70% probability of achieving the interim rebuilding target
- The minimum increase or decrease TAC change shall be 100 tonnes
- The maximum increase or decrease TAC change shall be 3000 tonnes
- TAC shall be set for three-year periods
- The national allocation of TAC within each three-year period will be apportioned according to the Resolution on the Allocation of the Global Total Allowable Catch

The most recent stock assessment was done in 2014. It showed that, at the time of assessment:

- The stock remained at a very low state
- Biomass of fish aged ten and over (B10+) relative to unfished biomass was estimated at 7%, which is up from 5% reported in the 2011 assessment
- Spawning stock status has improved, and was likely benefitting from recent high recruitments
- Concerns regarding unaccounted sources of mortality were not, at the time of assessment, accounted for in design of the management procedure

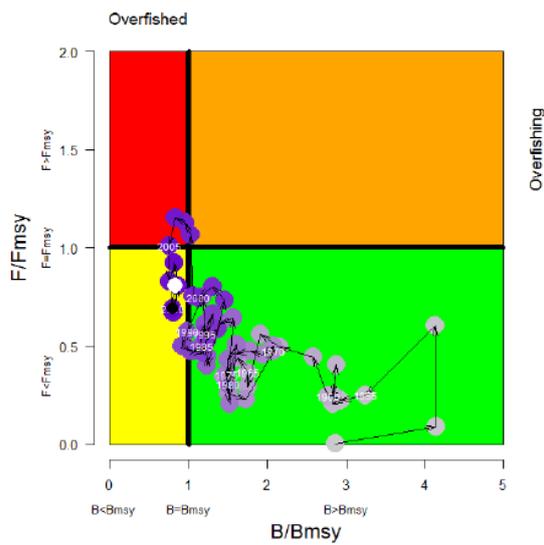


Time series of relative abundance estimates for southern bluefin tuna from Australian Aerial Survey (with 90% confidence intervals). No survey done this year.

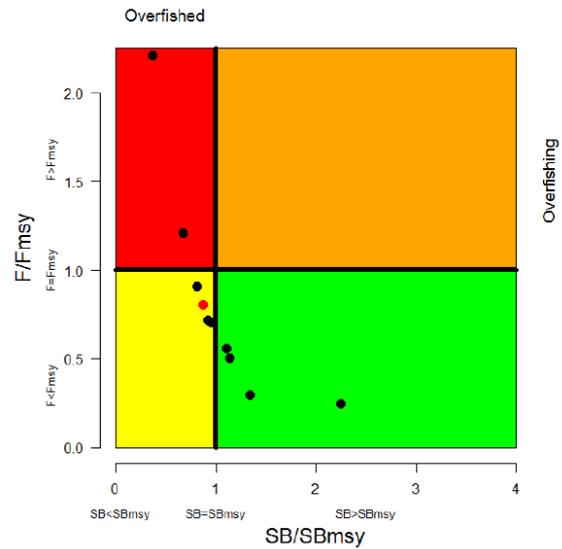
4.1.7 Striped marlin (Assessed 2013)

There was no stock assessment conducted for southwest Pacific striped marlin in 2016. Therefore, the stock status description from the 9th annual meeting of the WCPFC Scientific Committee is still current:

- Overfishing is not occurring in the striped marlin stock
- Based on recent trend in spawning biomass, striped marlin is approaching an overfished state



Temporal trend in annual stock status of south-west Pacific Striped Marlin relative to SB_{MSY} (x-axis) and F_{MSY} (y-axis), for the period 1952–2010 (Ref.case)



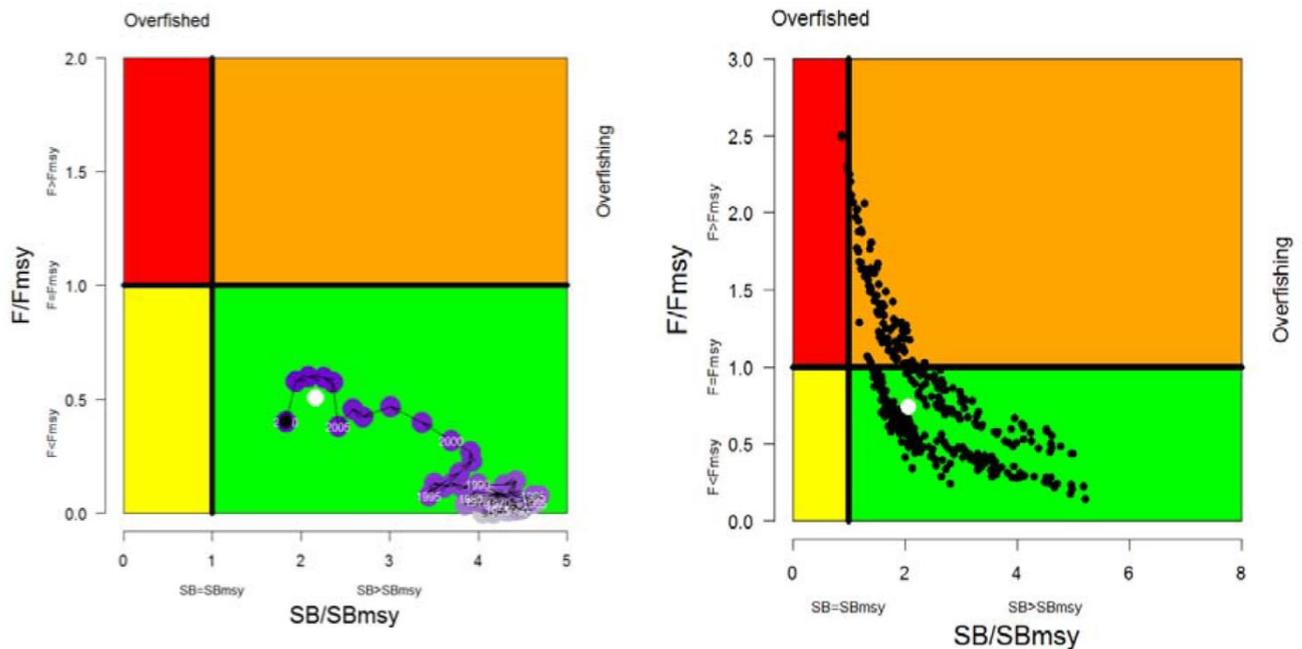
Summary of current stock status of south-west Pacific Striped Marlin (based on 2007-10) for the key model runs. Red circle represents the Ref.case run.

4.1.8 Swordfish (Assessed 2013)

There was no stock assessment conducted for south Pacific swordfish in 2015. Therefore, the stock status description from the 9th annual meeting of the WCPFC Scientific Committee (2013 assessment) is still current.

In 2014, a new project to re-examine the age, growth and maturity of broadbill swordfish in the southwest Pacific was presented to the Scientific Committee. The project was established after concerns about biological assumptions made in the 2013 south Pacific swordfish stock assessment. The stock assessment had a high degree of uncertainty that was attributed to uncertainty in the accuracy of growth and maturity parameters. The Scientific Committee recommended that additional work on age, growth and maturity validation be undertaken.

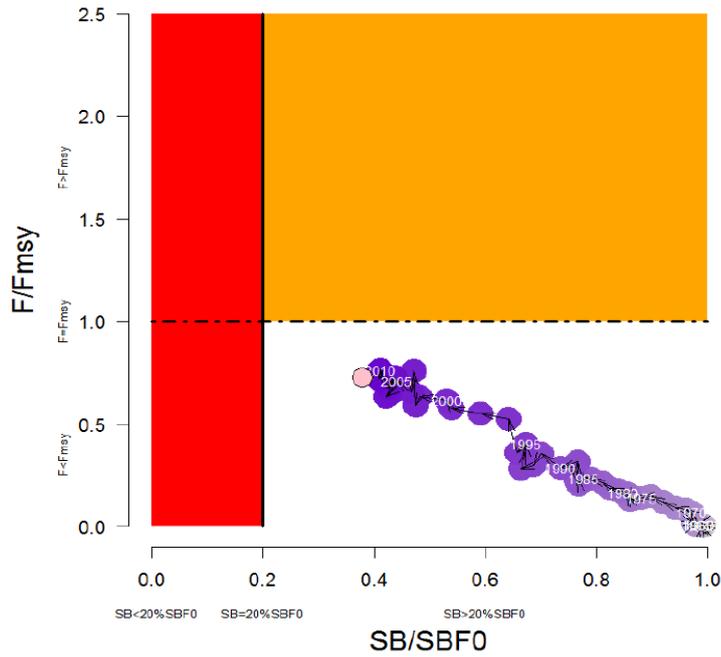
The Australian research agency, Commonwealth Scientific and Industrial Research Organisation (CSIRO), submitted a proposal to re-examine swordfish age, growth and maturity in the southwest Pacific. The WCPFC Secretariat supported this proposal financially and suggested an expansion of the research in collaboration with the US National Oceanic and Atmospheric Administration (NOAA)/Pacific Islands Fisheries Science Centre to include Hawaiian swordfish data in the study. The research will clarify the degree to which differences in life-history parameters between Hawaiian and Australian studies are methodological or real (i.e. spatial variation in life-history). The project will also provide a description of any unresolved uncertainties and an indication of the stock status implications in the context of the 2013 stock assessment.



Temporal trend in annual stock status, relative to SB_{MSY} (x-axis) and F_{MSY} (y-axis) reference points for the Ref.case

$F_{Current}/F_{MSY}$ and $SB_{current}/SB_{MSY}$ for the median of the selected uncertainty grid (white circle) and the individual uncertainty grid runs (excluding runs where the New Zealand CPUE series was used)

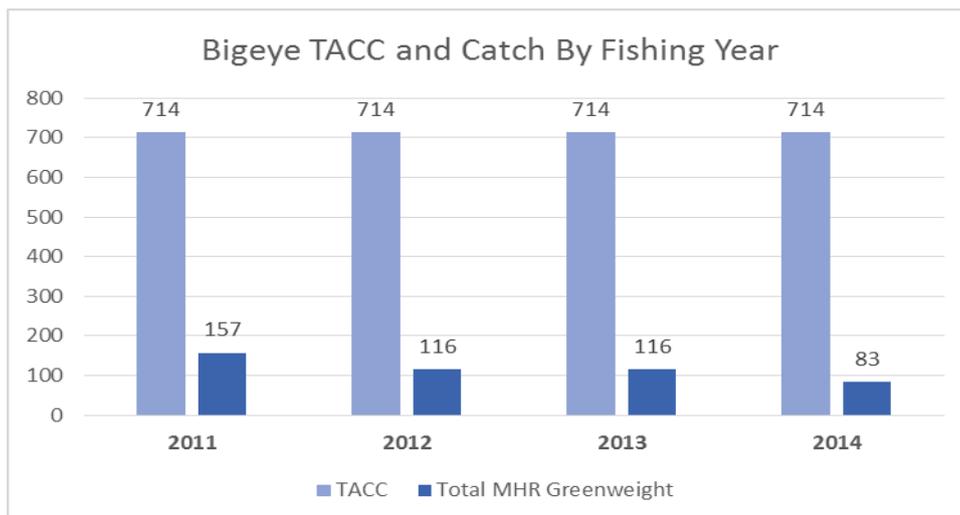
4.1.9 Yellowfin (Assessed 2014)



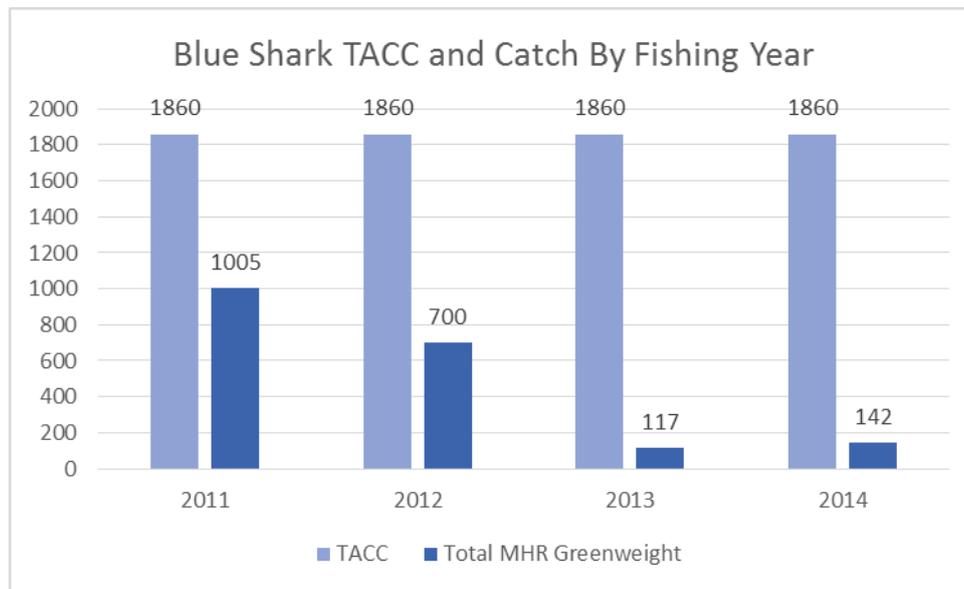
4.2 Catch against Total Allowable Commercial Catch (TACC)

Unless otherwise stated, all amounts are shown in tonnes. All figures are for the fishing year (1 October-30 September). Unless otherwise stated, all data from MPI's BI Hub database.

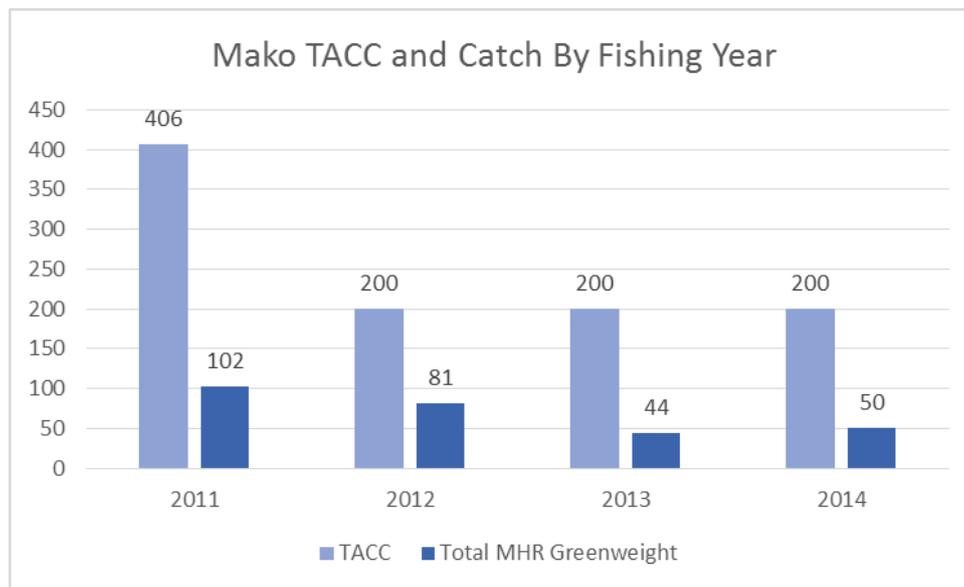
4.2.1 Bigeye (BIG)



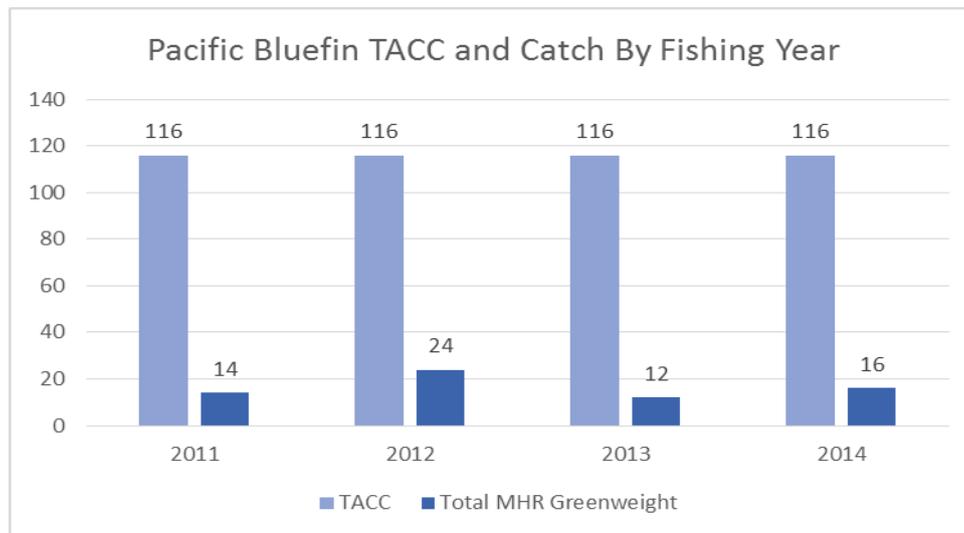
4.2.2 Blue shark (BWS)



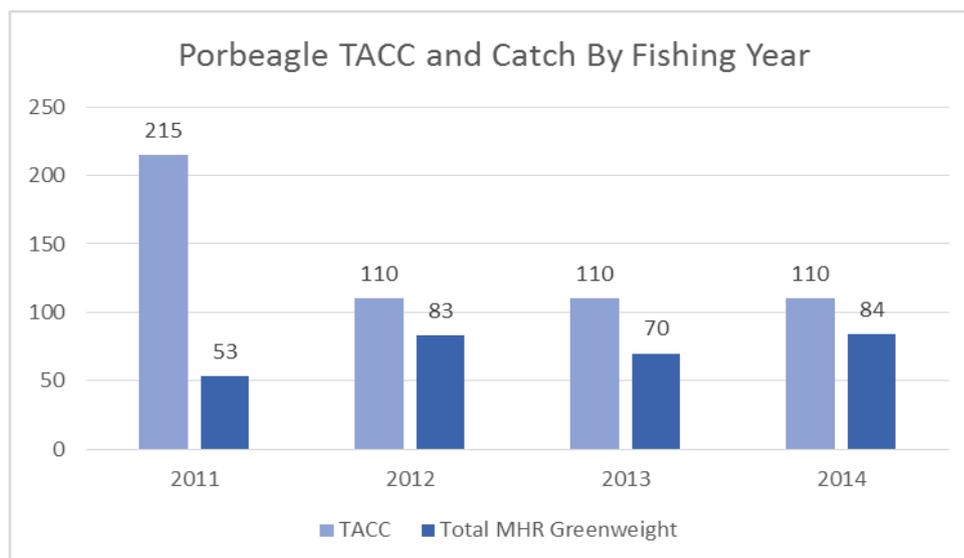
4.2.3 Mako shark (MAK)



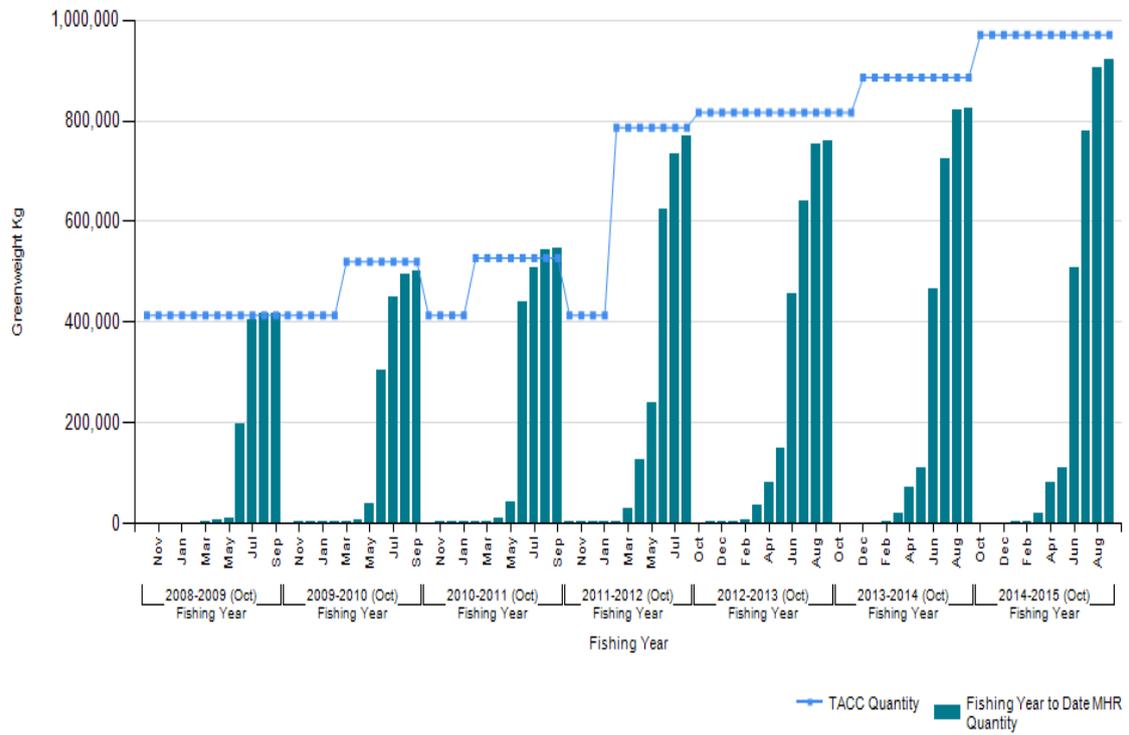
4.2.4 Pacific bluefin tuna (TOR)



4.2.5 Porbeagle shark (POS)

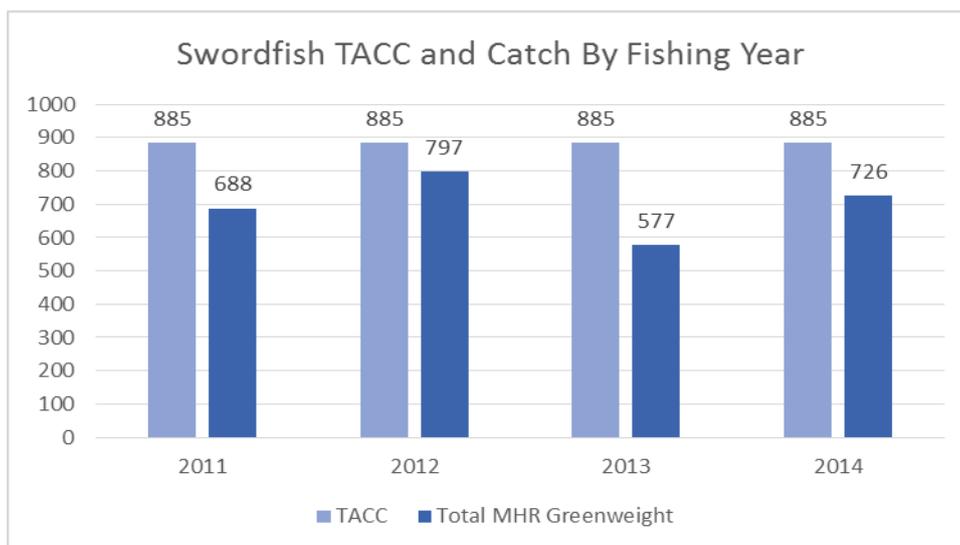


4.2.6 Southern bluefin tuna (STN)

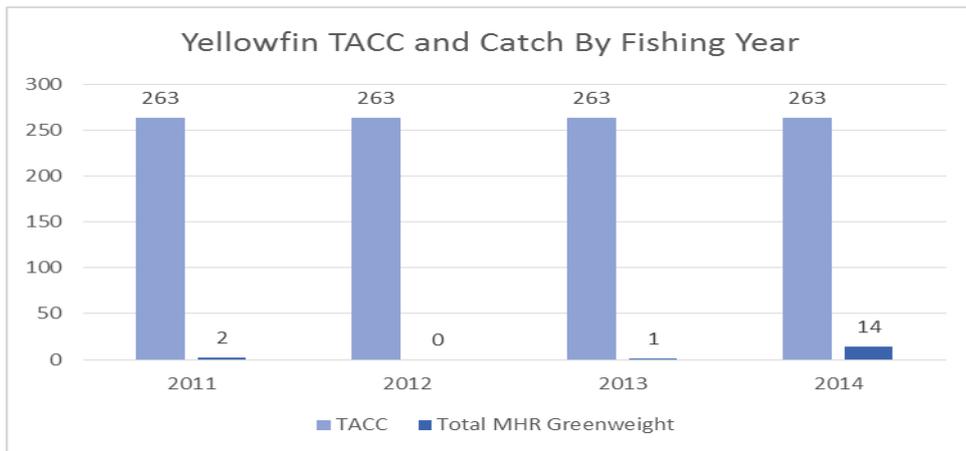


Please note that graph is in kilograms rather than tonnes. Southern bluefin tuna is represented here by a different graph that gives monthly cumulative catch against TACC and thus illustrates in-season increases to TACC quantity.

4.2.7 Swordfish (SWO)



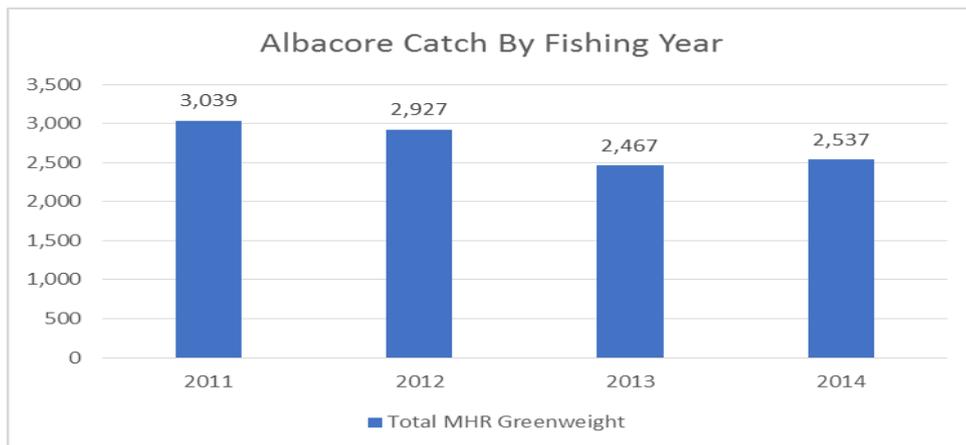
4.2.8 Yellowfin (YFN)



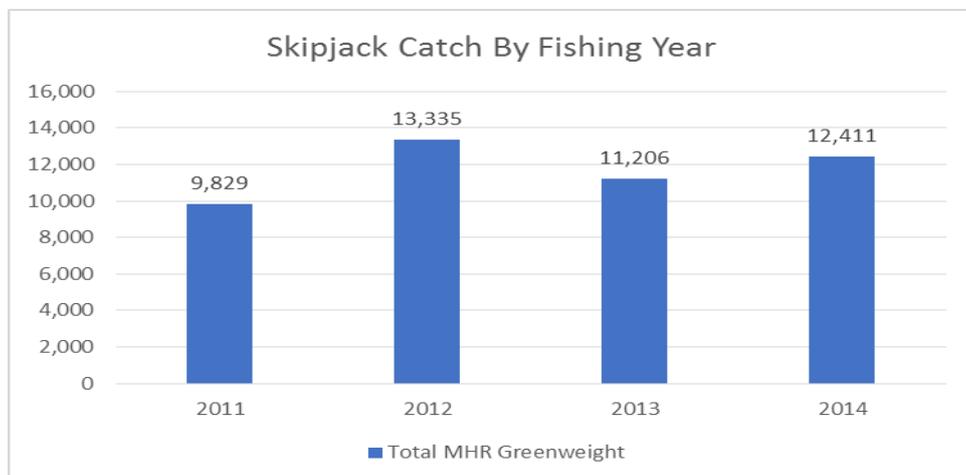
4.3 CATCHES OF NON-QUOTA SPECIES

All amounts are shown in tonnes.

4.3.1 Albacore



4.3.2 Skipjack



5 Environmental reporting

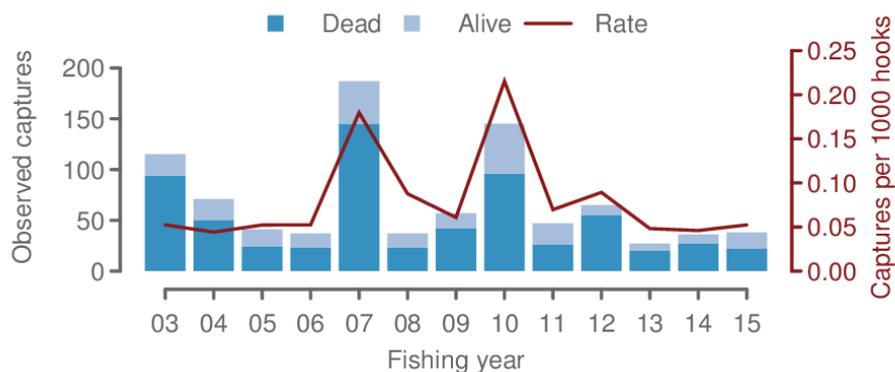
5.1 Seabirds - surface longline fisheries

Unless otherwise specified, the source the information is the database of protected species bycatch compiled by Dragonfly Ltd, see <https://data.dragonfly.co.nz/psc-dev/>.

New Zealand is a centre of seabird diversity, with over 80 species breeding in the New Zealand region. Seabirds are frequently reported as bycatch in fisheries, with most reported captures being either of albatrosses (family Diomedidae) or petrels (family Procellariidae). Coastal seabirds (such as shags, penguins and gulls) have also been reported as bycatch in commercial fisheries.

In the 2014/15 fishing year, there were 38 observed captures of all birds in surface longline fisheries. Observed captures were of southern Buller's albatross (21), New Zealand white-capped albatross (7), black-browed albatross (3), white-chinned petrel (2), Gibson's albatross (2), flesh-footed shearwater (1), Westland petrel (1), and Campbell black-browed albatross (1). It was estimated by a statistical model that there were a total of 562 (95% c.i.: 386–838) captures in surface longline fisheries.

Observed captures of birds in surface longline fisheries



Fishing effort and observations in surface longline Fisheries

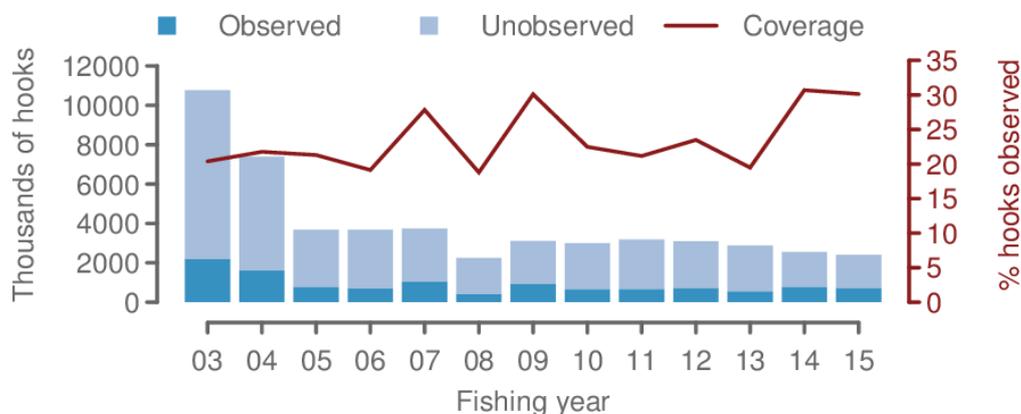


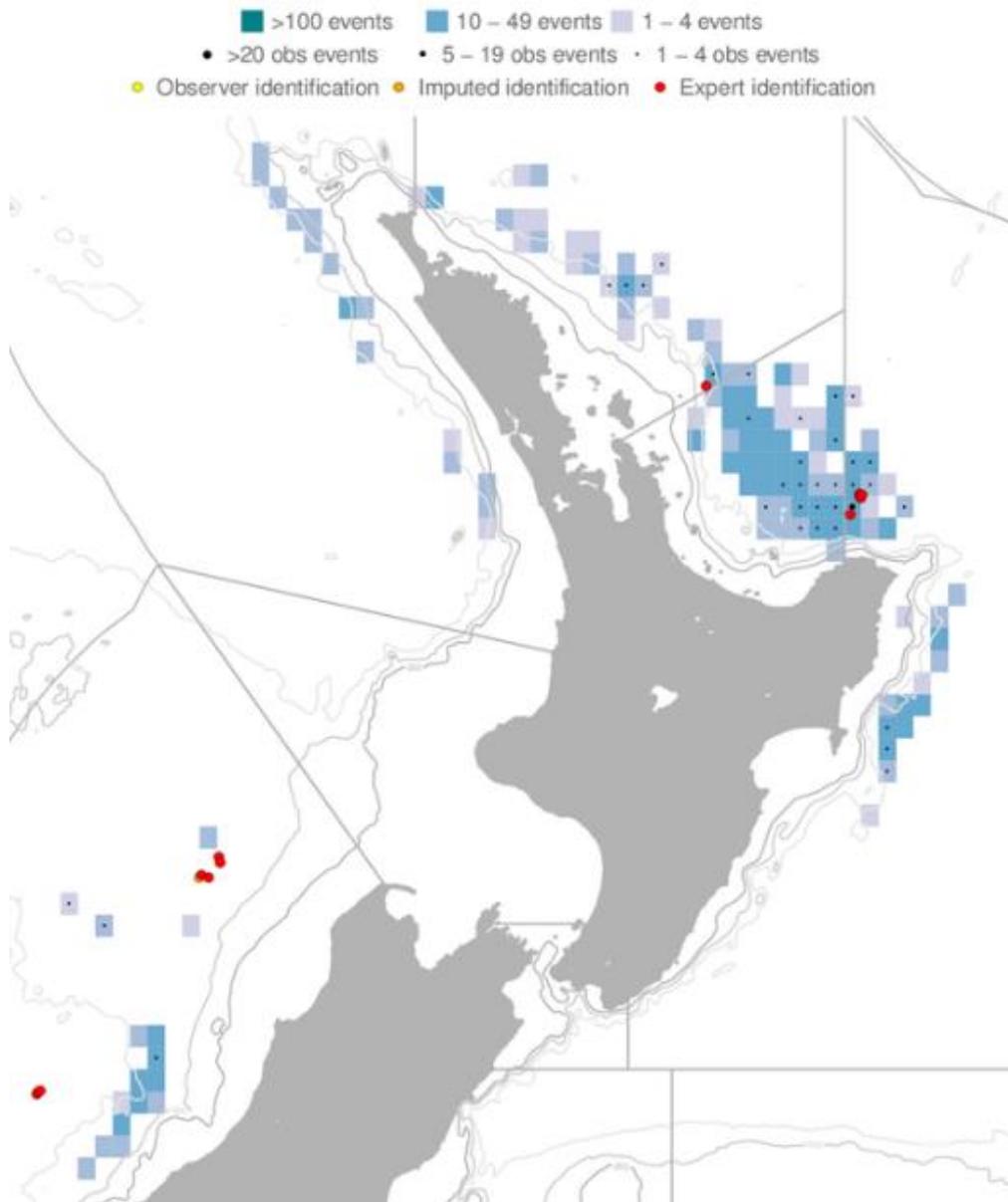
Table 4. Effort and seabird captures in surface longline fisheries by fishing year. (Due to MPI anonymity requirements, fishing effort is only shown if there were three or more vessels and three or more companies or persons fishing in that year - including provisional 2014/15 data)

	Fishing effort		Observed captures		
	All hooks	Observed hooks	Percent	Number	Rate
2002–03	10 770 488	2 195 152	20.4	115	0.052
2003–04	7 386 484	1 607 304	21.8	71	0.044
2004–05	3 679 765	783 812	21.3	41	0.052
2005–06	3 690 869	705 945	19.1	37	0.052
2006–07	3 739 912	1 040 948	27.8	187	0.18
2007–08	2 246 139	421 900	18.8	37	0.088
2008–09	3 115 633	937 496	30.1	57	0.061
2009–10	2 995 264	665 883	22.2	145	0.215
2010–11	3 188 179	674 572	21.2	47	0.07
2011–12	3 100 177	728 190	23.5	65	0.089
2012–13	2 876 932	560 333	19.5	27	0.048
2013–14	2 546 764	773 527	30.7	36	0.046
2014-15	2 407 236	725 370	30.1	38	0.052

Table 5. Summary of observed captures by species (dead and alive) on SLL vessels during the 2014/15 fishing year

Species or species group	Dead	Alive
Campbell black-browed albatross	4	
Fulmars, petrels, prions and shearwaters	1	
Gibson's albatross	1	1
Western petrel	1	
New Zealand white-capped albatross	6	1
Southern Buller's albatross	7	14
White-chinned petrel	2	
TOTAL	27	10

Map of surface longline fishing effort and observed captures, 2014/15



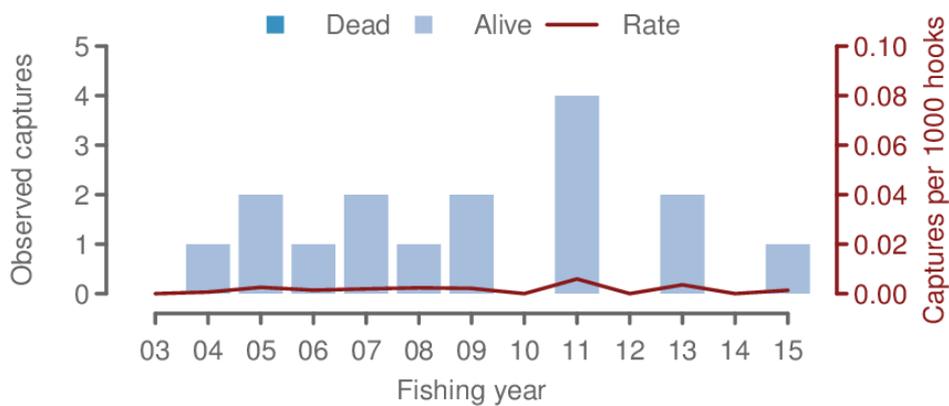
Fishing effort is mapped into 0.2 degree cells, with the colour of each cell being related to the amount of effort. Observed fishing events are indicated by black dots, and observed captures are indicated by red dots. Fishing is only shown if the effort could be assigned a latitude and longitude, and if there were three or more vessels fishing within a cell. In this case, 52.8% of the effort is shown.

5.2 Turtles - surface longline fisheries

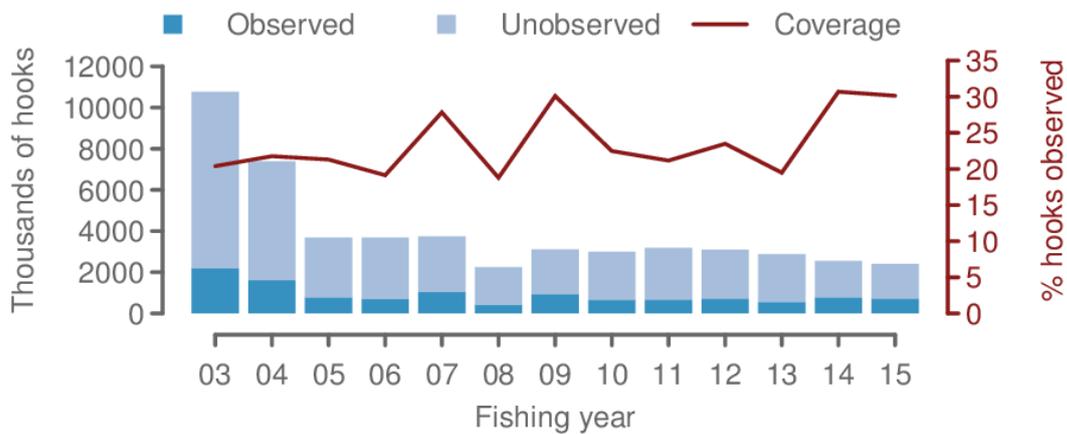
Unless otherwise specified, the source of the information is the database of protected species bycatch compiled by Dragonfly Ltd, see <https://data.dragonfly.co.nz/psc-dev/>. Note some data is provisional.

In the 2014/15 fishing year, there were one observed turtle capture in the surface longline fishery. No estimates of total captures were made.

Observed captures of turtles in surface longline fisheries



Fishing effort and observations in surface longline fisheries



Note: all observed turtle captures in this period were alive on capture and were released.

Table 6. Observed captures of turtles in surface longline fisheries from 2008 to 2015.

Common name	Scientific name	2008	2009	2010	2011	2012	2013	2014	2015
Green turtle	<i>Chelonia mydas</i>	0	0	0	0	0	0	0	0
Leatherback turtle	<i>Dermochelys coriacea</i>	1	2	0	3	0	0	0	2
Loggerhead turtle	<i>Caretta caretta</i>	0	0	0	0	0	0	0	0
Olive Ridley turtle	<i>Lepidochelys olivacea</i>	0	0	0	1	0	0	0	0
Unidentified		0	0	0	0	0	2	0	0
Total		1	2	0	4	0	2	0	2

(Source: [New Zealand Annual Report to the \[Western and Central Pacific Fisheries\] Commission](#) Part 1: Information on fisheries, research and statistics: New Zealand.)

5.3 Other non-target associated and dependent species

Table 7. Landed catch (tonnes) of non-target species currently managed within the QMS that are taken in tuna fisheries within New Zealand fisheries waters. Data are provided by calendar year for 2011 to 2015 and for some species may include catches from non-tuna fisheries.

Species	Scientific name	2011	2012	2013	2014	2015
Blue shark	<i>Prionace glauca</i>	785	985	661	106	148
Mako shark	<i>Isurus oxyrinchus</i>	97	95	79	49	47
Moonfish	<i>Lampris guttatus</i>	107	91	65	51	37
Porbeagle shark	<i>Lamna nasus</i>	75	52	85	74	83
Ray's bream	<i>Brama brama</i>	144	150	847	658	169

(Source: [New Zealand Annual Report to the \[Western and Central Pacific Fisheries\] Commission](#) Part 1: Information on fisheries, research and statistics: New Zealand.)

Table 8. Total estimated catch (numbers of fish) of common bycatch species in the New Zealand longline fishery as estimated from observer data from 2012 to 2015. Also provided is the percentage of these species retained (2015 data only) and the percentage of fish that were alive when discarded, n/a (none discarded).

Species	2012	2013	2014	2015	% retained (2015)	discards % alive (2015)
Blue shark	132 925	158 736	80 118	72 480	0.3	87.0
Rays bream	19 918	13 568	4 591	17 555	95.3	13.7
Lancetfish	7 866	19 172	21 002	12 962	0.2	44.6
Porbeagle shark	7 019	9 805	5 061	4 058	5.1	64.0
Moonfish	2 363	2 470	1 655	3 060	95.6	45.5
Mako shark	3 902	3 981	4 506	2 667	16.1	72.2
Butterfly tuna	713	1 030	699	1 309	86.9	11.1
Pelagic stingray	712	1 199	684	979	0.0	97.2
Dealfish	372	237	910	842	0.4	22.9
Sunfish	3 265	1 937	1 981	770	0.0	100.0
Escolar	2 181	2 088	656	653	82.5	71.4
Oilfish	509	386	518	584	46.7	83.3
Deepwater dogfish	647	743	600	545	2.3	88.3
Rudderfish	491	362	327	373	26.9	78.9
Thresher shark	246	256	261	177	0.0	53.3
Skipjack tuna	123	240	90	150	10.0	n/a
Striped marlin	124	182	151	120	10.0	55.6
School shark	477	21	119	88	43.5	76.9
Big scale pomfret	108	67	164	59	32.5	96.3

(Source: [New Zealand Annual Report to the \[Western and Central Pacific Fisheries\] Commission](#) Part 1: Information on fisheries, research and statistics: New Zealand.)

6 Cost recovery levies

Table 9. Cost recovery levies for 2016/17 financial year.

2016/17 Plan	MPI Departmental		Observers		Research		Under/Over Recovery						
	Stock	Compliance	Registry	MPI	DoC	MPI	DoC	MPI	DoC	2013/14 Total	2014/15 Total	2015/16 Total	2016/17 Total
ALB	80,043	29,431	489	1,321	30,959	6,583	17,876		246,303	89,142	115,804	166,701	50,897
BIG1	93,671	34,442	87,189	18,350	37,789	62,393	-57,739	-9,389	304,996	279,176	427,519	266,706	-160,813
BWS1	2,443	898	15	0	151	55	-3,508	-55	126,292	12,846	0	-1	-1
MAK1	806	296	5	0	50	18	101	0	2,712	37,188	43,682	1,277	-42,405
MOO1	10,283	3,781	63	0	686	231	916	6	16,510	14,376	15,479	15,966	487
POS1	470	173	3	0	29	11	-674	-11	100,406	419	1	1	-0
RBM1	10,873	3,998	66	0	673	244	1,016	8	19,206	16,542	18,161	16,877	-1,284
SKJ	72,570	26,684	50,168	9,774	0	203	-149,422	-9,977	217,231	0	0	0	0
STN1	125,999	46,329	259,100	54,737	59,940	74,081	9,099	-11,664	779,006	353,452	515,374	617,621	102,247
SWO1	41,028	15,086	38,186	8,041	16,552	21,675	-20,531	-3,737	149,527	104,012	138,140	116,300	-21,840
TOR1	38,113	14,014	233	0	9,308	855	3,394	25	49,081	51,970	56,287	65,942	9,655
YFN1	17,829	6,556	109	0	835	0	1,644	0	19,620	21,429	27,557	26,973	-584
TOTAL	494,128	181,688	435,626	92,223	156,972	166,347	-197,828	-34,792	2,030,890	980,552	1,358,004	1,294,364	-63,640
2015/16 Comparatives													
Change	-49,523	-17,099	66,877	10,972	231,016	113,228							

Overall, total costs recovered over HMS has slightly decreased on the previous year, and is still well below the 2013/14 level. In general, the decrease in research costs have been matched by an increase in compliance costs and therefore overall, there is not a significant reduction. The biggest decrease was in MPI's research costs, which returned to the 2014/15 levels. This is because there was no new research proposed and generally, HMS research is longstanding ongoing research. Costs recovered for southern bluefin tuna increased mainly because of increased compliance costs.

7 List of HMS research projects as of February 2017

New projects

Code	Title	Rationale
ALB2017-01	ALB CPUE analysis	The NZ target albacore troll fishery is the only fishery catching small albacore in the SW Pacific. This proposed project will determine if data from the NZ troll fishery are useful in the next assessment update in 2018. (ongoing, annual)
HMS2017-01	Catch sampling of BIG, YFN, SWO, TOR	Catch sampling results are inputs to the stock assessments of these species by WCPFC. These species assessments will be updated over the next 3 years. (ongoing, annual)
HMS2017-02	Movements and trophic structure of key HMS	Initial results of current work indicate that stable isotopes can be used to infer movements and determine trophic structure of tunas and sharks. The proposed project will extend this work and contribute to ongoing studies at SPC/IRD. (short-term, focused project)
SHA2017-01	Shark fishery characterisation and indicators analysis	The most recent shark fishery characterisation and indicators analysis was conducted in 2012/13 and used as inputs to WCPFC analyses. The results of this proposed project will be used in the WCPFC update in 2019. (once every 3-5 years)
SHA2017-02	Shark post-release mortality study	Estimates of post-release mortality (PRM) rates of sharks taken by longline fisheries are important for evaluating the effectiveness of WCPFC non-retention measures. This proposed project will build on the results of a January 2017 workshop the goal of which is to produce a scientifically robust and practical set of protocols for PRM studies. (short-term, focused project)
STM2017-01	CPUE analysis for STM recreational fishery	Catch and effort data for STM are one of the main data inputs for its assessment. This project will determine if data from the NZ recreational fishery are useful in the next assessment update in 2018. (ongoing, annual)

Continuation of ongoing projects

Code	Title	Rationale
ALB2015-01	Albacore catch sampling	Results will be used in 2018 assessment update <i>(ongoing, annual)</i>
HMS2016-01	Data reports for NZ HMS fisheries	Annual data reports to the two relevant tuna RFMOs – CCSBT and WCPFC <i>(ongoing, annual)</i>
STM2016-01	Monitoring of STM including logbook programme	Ongoing, annual implementation of STM recreational monitoring programme including the implementation of the logbook programme <i>(ongoing, annual)</i>
STN2016-01	Annual catch-at-age of STN	Data used as inputs to stock assessments; the next update scheduled in 2017 <i>(ongoing, annual)</i>
TAG2016-01	Data management from gamefish tagging programme	Ongoing, annual programme that has been running for more than 40 years. Due for review in 2017. <i>(ongoing, annual)</i>

8 Observer monitoring – days by fishery

Table 10. Observer coverage for 2015/16 fishing year

2015 - 2016	Total days in plan	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Non-discretionary observer coverage													
STN FCV longliners	260												
<i>Achieved</i>	0												
SLL - ET - WCPFC	0												
<i>Achieved</i>	0												
Domestic tuna longline - east coast STN	180	72	23								6	24	55
<i>Achieved</i>	187	57	11									55	64
Domestic tuna longline - west coast STN	120	18	18							21	21	21	21
<i>Achieved</i>	194	6									74	70	44
Total planned	560	Total achieved		381									
Discretionary observer coverage													
Domestic SLL - east coast BIG/SWO	225	5	15	10	10	15	15	20	30	40	35	25	5
<i>Achieved</i>	84					20	29	15	13	7			
Domestic SLL - west coast BIG/SWO	45	5	10	5				5	5	5	5	5	
<i>Achieved</i>	26										10		16
Purse seine - SKJ (not super seiner)	70							25	25	20			
<i>Achieved</i>	45							24	21				
Purse seine - SKJ (super seiner)	30									30			
<i>Achieved</i>	42								5	28	9		
Total planned	370	Total achieved		197	Overall total planned: 930 days				Overall total achieved: 578 days				

9 Non-commercial monitoring

9.1 Gamefish tagging rates and numbers from the New Zealand Gamefish Tagging Programme

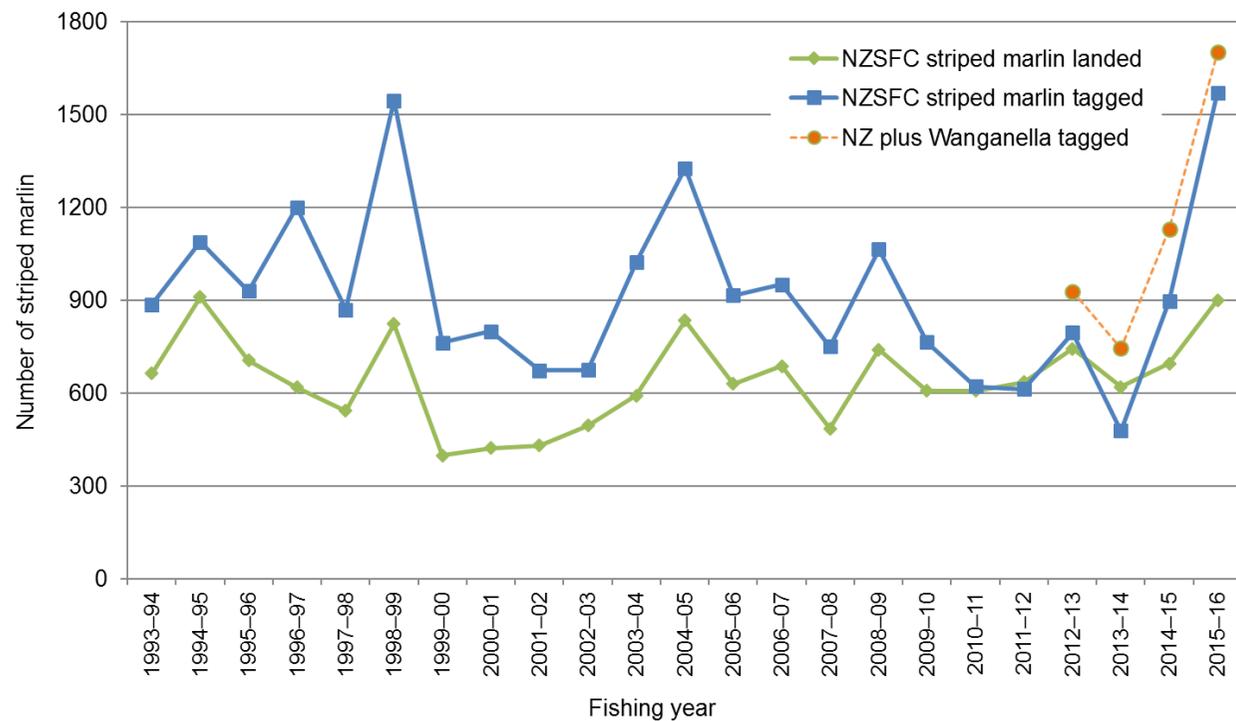
Table 11. Gamefish Tagging Programme. These tables show the number of sharks and billfish tagged in the New Zealand Gamefish Tagging Programme in the EEZ by sport fishing year (July to June). The percent tagged is taken from New Zealand Sport Fishing Council (NZSFC) tallies of landed fish and tagged fish as recorded by member clubs. The recaptures are for fish with recapture dates within each year.

Mako	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2005 to 2015 (Average)
NZ EEZ Tagged	150	297	285	494	609	488	524	367	439	554	421
% tagged	82	87	87	90	92	92	94	93	97	96	91
Recaptures		2	5	7	7	8	11	6	0	2	5

Blue shark	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2005 to 2015 (Average)
NZ EEZ Tagged	157	108	101	73	128	142	150	124	110	169	126
% tagged	91	90	89	92	91	90	93	93	93	95	92
Recaptures	2	3	4	3	3	4	3	3	0	0	3

NZGTP Billfish	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2005 to 2015 (Average)
Striped marlin	965	806	1058	858	731	663	858	519	1086	1530	907
Blue marlin	26	29	24	32	78	50	18	9	37	30	33
Shortbill spearfish	14	8	5	15	21	5	0	6	12	22	11
Swordfish	16	25	24	18	37	51	47	38	34	29	31
Billfish recaptures	1	4	3	2	1	1	4	4	2	7	3

9.2 Striped marlin recreational catch



Source: Recreational catch of striped marlin from NZSFC and Gamefish Tagging Programme records.