



# Annual Review Report for HMS fisheries for 2015–16

Containing: Progress against key focus areas and business-as-usual tasks; and Summary of key indicators for the 2014-15 fishing year

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# 1 Key Focus Areas (KFA)

## 1.1 KFA AND MANAGEMENT OBJECTIVES

Annual KFAs are designed to contribute to the 12 Management Objectives defined in *Fisheries 2030*:

### **Use Outcomes**

1. Promote a viable and profitable tuna fishery in New Zealand
2. Maintain/enhance world class game fisheries in New Zealand waters
3. Deliver fair opportunities for access to HMS fisheries
4. Minimise wastage and promote humane treatment
5. Māori interests are enhanced

### **Environmental Outcomes**

6. Maintain a sustainable fishery for HMS within environmental standards
7. Implement an ecosystem approach to fisheries management
8. Protect, maintain, and enhance fisheries habitat
9. Allow for HMS aquaculture development while protecting ecosystem and wild fisheries

### **Governance Conditions**

10. Recognise and provide for Deed of Settlement obligations
11. Influence international for a and ensure New Zealand interests are taken into account
12. Maintain an effective fisheries management regime

## 1.2 KFA 1: SUPPORT EFFECTIVE INTERNATIONAL MANAGEMENT OF HIGHLY MIGRATORY FISHERIES

In addition to business as usual tasks relating to international management and regional fisheries management organisations (RFMOs), MPI engaged in several large international projects in the 2015-2016 year.

MPI lead initiatives to improve Convention of the Conservation of Southern Bluefin Tuna (CCSBT) management and successfully led the revision of the CCSBT strategic plan. MPI also participated in establishing new seabird reporting requirements for southern bluefin fisheries, and made progress in international accounting for all southern bluefin mortalities.

At the Western and Central Pacific Fisheries Commission (WCPFC) management meetings from August to December, MPI advocated strongly for the establishment of target reference points (TRP) and harvest strategies for bigeye, albacore, yellowfin and skipjack. New Zealand's Harvest Strategy Standards states that a "harvest strategy specifies target and limit reference points and management actions associated with achieving the targets and avoiding the limits." Setting regional TRPs and limit reference points (LRPs) for bigeye, albacore, yellowfin and skipjack will be an important part of making sure that the total allowable catch (TAC) and the country allocations derived from it are set at sustainable levels. The WCPFC successfully established a TRP for skipjack, and work continues for other stocks.

The WCPFC rules on reporting albacore catch in the South Pacific were clarified and strengthened. WCPFC members must report the catch of vessels targeting albacore in the South Pacific as well as bycatch of albacore by other vessels. Members must also report the number of vessels actively fishing for South Pacific Albacore in the Convention area south of 20° South.

WCPFC also revised the rules of its Compliance Monitoring Scheme, which is the process that the Commission uses to assess the performance of member countries in implementing management measures.

An update was provided at the November 2015 Science Working Group meeting on the stock status of striped marlin and other gamefish. Catch rates have remained stable, but attention will continue to be paid to size of catch and recruitment stock, which has decreased noticeably since tagging began. No new measures have been deemed necessary at this time.

### **1.3 KFA 2: SUPPORT PROFITABLE TUNA FISHERIES IN NEW ZEALAND**

Supporting profitable tuna fisheries in New Zealand was considered a KFA in 2015-2016 because MPI aimed to put additional attention and effort into several BAU tasks associated with maintaining efficient management systems and supporting profitable fisheries.

No additional New Zealand HMS fisheries were put up for certification through MSC during the year.

Throughout 2015-2016, multiple stakeholder meetings were held to collect information about fishery status and receive input into annual and medium-term planning. Stakeholders were also invited to participate in the HMS Science Working Group's research planning meetings in order to create a productive and cost-effective research plan. At several stakeholder meetings, MPI facilitated and allowed for discussion of the possibility of an official organisation to support collective representation for HMS fisheries stakeholders other than FINZ (the current representative body for large tunas, including Albacore).

### **1.4 KFA 3: REVISE AND UPDATE THE NATIONAL FISHERIES PLAN FOR HMS**

The National Fisheries Plan for HMS was adopted by then-Minister of Fisheries in 2010, and covers 2010 to 2015. Once again the next five-year plan is being developed in a collaborative process with the Fish Plan Advisory Group (FPAG). Delays in this project were due to a lack of resources within the HMS team and discussions on fish plans across the wider fisheries directorate. The HMS team is now working in collaboration with other teams in the directorate to develop a draft plan for the FPAG to review with the expectation that a final plan can be submitted prior to the end of the financial year.

### **1.5 KFA 4: MANAGE INTERACTION OF HMS FISHERIES WITH SEABIRDS**

Domestically, MPI hoped to improve compliance with existing measures, increase use of line weighting, analyse existing mitigation techniques, and revise regulations to better meet "best practice". In 2015-2016, seabird issues were prioritised at stakeholder meetings and Fish Plan Advisory Group meetings. MPI also held several Seabird Advisory Group (SAG) meetings and established the Joint MPI-DOC Seabird Project Planning Group, which first met in December 2015.

The HMS team will establish capture rate reduction targets and proxy targets for the following HMS fisheries:

- Small Vessel Surface Long Line (the smaller ice boats that dominate the domestic fleet)
- Small Vessel Swordfish Surface Long Line (again smaller domestic boats but targeting swordfish)
- Large Vessels Surface Long Liners (typically the freezer vessels operating off the west coast of the South Island, which are not here this year, however may return)

Capture rate reduction targets are intended to provide a gauge against which the Practical Objective of the NPOA-Seabirds objective [of continuous improvement in New Zealand fisheries] can be measured. As observer coverage levels are not high enough in the small vessel or small vessel swordfish surface long line fisheries to set capture rate reduction targets, four proxy measures have been proposed, as follows:

- Tori line, line weighing, and night setting use rates on observed sets (compliance rates to be calculated based on observer data quarterly and annually in order to track improvement over time).
- Seabird Liaison Officer questionnaire responses about mitigation (to be coordinated by the Seabird Liaison Officers).
- Number of vessels with Seabird Management Plans (SMP) in place (to be coordinated by the Seabird Liaison Officers).
- Levels of self-reporting will be measured using the percentage of trips (observed and unobserved) where a non-fish bycatch form has been filed.

Data for these proxies is incomplete looking backward, but initial proxy targets will be laid out in the 2016-2017 AOP while initial data collection takes place as part of this plan. At the time of this report, there was only one company with a SMP in place, and we have the following limited data on self-reporting. In the 2012/2013 fishing year, 46 of 521 fishing trips were linked to at least one non-fish bycatch form (approximately 8%). In 2013/2014, 32 of 456 trips were linked to at least one non-fish bycatch form (approximately 7%). That rate doubled the next year, with 60 of 411 trips having a form (approximately 15%). Future numbers and analysis should help us understand trends in self-reporting.

In line with the NPOA-Seabirds, the HMS team also wrote Species-Specific Action Plans for the two highest risk seabird populations in HMS fisheries, Gibson's and Antipodean Albatrosses. These actions will be included in the 2016-2017 AOP as an Appendix and considered when establishing key performance indicators for the Seabird KFA.

In addition to working with fishers to boost the efficacy of seabird bycatch reduction strategies in place on vessels, a new prototype hook pod is being trialled and new tori line designs and materials tested. Quantitative and qualitative data was gathered by the Seabird Liaison Officer, especially relating to seabird captures, incentives and disincentives to report seabird captures, and the perceptions of fishers of seabird mitigation rules and the current state of seabirds.

Internationally, MPI Science is continuing with the seabird risk assessment, which is covering the entirety of the Southern Hemisphere. Seabird mitigation-related proposals were brought to both the CCSBT and the WCPFC. The CCSBT revised seabird rules under a new measure relating to ecologically related species. The requirements confirm that vessels from countries that are CCSBT members are bound by the mitigation and reporting rules of the relevant tuna RFMO, depending on where the vessel is fishing. New Zealand was also able to push through changes that will allow data to be collected on individual mitigation methods

being used as part of observed trips. The New Zealand delegation to the WCPFC additionally proposed an amendment to the seabird mitigation rules of the WCPFC to extend the rules from 30° South to 25° South. Although the proposal had broad support, agreement could not be reached at the Commission meeting.

## **1.6 KFA 5: MANAGE INTERACTION OF HMS FISHERIES WITH SHARKS**

Following on from last year, in 2015-2016, MPI 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

In 2015-2016, MPI consulted with stakeholders at various meetings around New Zealand to receive feedback on the implementation of the shark finning ban and stakeholder comments relating to shark mitigation. This was done in conjunction with MPI's own monitoring of the implementation of the new reporting requirements in relation to sharks.

A study of Mako shark populations around New Zealand was completed, and MPI helped to fund and support a study on the efficacy and feasibility of various shark mitigation techniques.

## **2 Business as Usual (BAU)**

### **2.1 BAU 1: 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 the CCSBT and the WCPFC. In 2015, HMS, International, Compliance and Science team members attended several meetings for each of these RFMOs.

#### **WCPFC Meetings 2015-2016**

- Scientific Committee, 5-13 August, 2015
- Technical and Compliance Committee, 23-29 September, 2015
- Annual WCPFC Meeting, 3-8 December, 2015
- New Zealand delegations also attended various FFA and Te Vaka Moana meetings throughout the year.

#### **CCSBT Meetings 2015-2016**

- Scientific Committee, 1-6 September, 2015
- Compliance Committee, 9-11 October, 2015
- Annual CCSBT Meeting, 13-16 October, 2015

- Catch Documentation Scheme (CDS) workshop, 5-7 April 2016

## **WCPFC**

Work at the WCPFC this year primarily focused on harvest strategies, seabirds, and compliance monitoring. The WCPFC successfully established a TRP for skipjack in December 2015. New Zealand strongly advocated for the establishment of a TRP for South Pacific Albacore, especially in light of a recent stock assessment undertaken by the WCPFC Science Committee showing that the stock size is lower than previously believed. The Forum Fisheries Agency (FFA), a group of WCPFC members who work collectively to support Pacific Island Country (PIC) fisheries, signed the Tokelau Arrangement in May 2015 in order to move forward on albacore management, despite the lack of a TRP.

Another major issue facing the WCPFC members is the management of Bigeye. The WCPFC has previously established measures relating to the tropical tunas (bigeye, yellowfin, and skipjack) including controls surrounding fish aggregating devices (FADs). However, these FAD controls have failed to come into effect due to a lack of resolution on the issue of disproportionate conservation burden on small island developing states and territories. At the 2015 WCPFC meeting, the members failed to come to a resolution on this issue.

Ongoing areas of interest for New Zealand at the WCPFC include compliance monitoring, management of High Seas area, and the New Zealand Aid initiative to move to catch-based management arrangements.

## **CCSBT**

As part of its business as usual, MPI administers the CCSBT Catch Documentation Scheme (CDS), the authorised vessel list, prepares and submits fisheries data, and prepares for annual subsidiary meetings.

At the 2015 CCSBT Commission meeting, progress was made on accounting for all sources of southern bluefin mortality, which is due to be fully implemented in 2018. There are still concerns about non-member catch and general misreporting. An important discussion at this year's meeting related to the ongoing funding of the annual aerial surveys, which is currently the primary indicator of juvenile abundance for the stock. Funding arrangements were decided upon, with the proviso that there would be a transition to gene tagging as the method to collect data on juvenile abundance.

The European Union was also accepted as a member of the Extended Commission (formerly a cooperating non-member). This year was not a TAC setting year but next year's Commission meeting will be.

## **2.2 BAU 2: MONITOR COMMERCIAL AND NON-COMMERCIAL FISHERIES FOR HMS**

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 for each fishery component



**WCPFC:** 100% coverage for purse seine vessels operating on the high seas between 20° North and 20° South

In 2015-2016, MPI concentrated on meeting CCSBT standards, collecting data to assess the use of seabird mitigation techniques and recording shark handling practices.

In regard to non-commercial fisheries, MPI supported various aspects of voluntary reporting through the gamefish tagging programme and targeted logbook schemes.

## 2.3 BAU 3: HMS COMPLIANCE

In 2015-2016, MPI focused on meeting domestic and international reporting obligations. Domestically, MPI's target was one routine unload inspection per vessel, per year. Observer reports were assessed and followed up in cases where potential breaches were discovered. A special focus area was compliance with the shark finning ban and its associated reporting requirement along with compliance with bird mitigation requirements. Internationally, MPI's focus was compliance with the CCSBT Catch Documentation Scheme.

During the 2014/2015 fishing year, 54 of our 75 vessels were physically inspected (72%), and 22 vessels were inspected by plane. 3 of these plane inspections were of vessels that were not physically inspected, bringing our total inspection rate to 76%. Seven breaches, all relating to low-level recordkeeping and reporting, were detected.

Issues were found with the reporting of shark discards under the new Schedule 6 rules. These issues were then raised with stakeholders as part of the longline workshops and MPI will continue to monitor this issue as part of the implementation of the shark finning ban.

The CCSBT 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.

<b>CDS (during 2014 Calendar year):</b>	% of CMFs for exports where catch/ harvest weights are the same on both exporter and importer copies	97.5%
	% of CMFs for exports where SBT catch/harvest numbers are the same on both exporter and importer copies <sup>5</sup>	97.5%
	% of CMFs with all correctly corresponding CTFs (where required)	99.8%
	<ul style="list-style-type: none"> <li>% of CTFs where fish numbers exactly match CMF</li> </ul>	100%
	<ul style="list-style-type: none"> <li>% of CTFs where fish weights within 2.5% of CMF</li> </ul>	99.8%
	Number of Duplicate Tag Numbers Submitted in Tagging Data	246
	Has the Member responded to the issues identified in the Secretariat's 2013 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 <sup>4</sup>	99.7%
	% of CMFs for Domestic Landings where the catch/harvest weight differs from the landed weight by $\leq 2.5\%$	100%

*Table 1: CCSBT CDS Compliance Statistics*

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

## 2.4 BAU 4: IMPLEMENT THE HMS RESEARCH PLAN

Planning and implementing research related to HMS fisheries is achieved jointly by the HMS Fisheries Management team and the Fisheries Science team at MPI. This is done with input from NIWA, DOC and stakeholders.

### **New research projects in the HMS research plan for 2015-16**

- Albacore catch sampling
- Age, growth and reproduction of blue sharks
- Stable isotope analysis of HMS to determine their spatial and temporal movements and assess trophic linkages

### **Continuation of Ongoing Projects**

- Data reports for international obligations
- Commercial catch sampling for HMS
- Age, growth and reproduction of mako sharks
- Stable isotope analysis of HMS to assess trophic linkages, and spatial and temporal movement trends of HMS sharks
- Multi-year stock monitoring of striped marlin, including logbook programme
- Catch-at-age data for southern bluefin
- Management of data from the gamefish tag recapture programme

All research projects scheduled for the 2015/16 year met the requirements for their agreed milestones.

## 2.5 BAU 5: CONTRIBUTE TO IMPLEMENTATION OF THE MINISTRY'S MOU ON PACIFIC CAPACITY

The Ministry has a supporting role providing technical assistance to develop Pacific countries' fisheries management and monitoring, control and surveillance capacity, including through Te Vaka Moana (TVM). In 2015-2016, as in other years, work was done to continue building and maintaining strategic relationships with key resource providers in the Pacific region and to coordinate targeted provision of capacity. Additionally, MPI focused on ongoing work as advice provider to the Administrator of Tokelau in the implementation of their Offshore Regulations (2012). MPI worked on developing a strategy for moving the

Pacific region towards catch based management. The addition of a new full time employee focused on building capacity in offshore Pacific fisheries should also increase productivity in this area.

## 2.6 ENGAGE WITH FISHERIES STAKEHOLDERS

Engaging with HMS fisheries stakeholders is an important aspect of business as usual for MPI. Engagement with stakeholders occurs in a variety of ways through various fora. In 2015/16, MPI held the following meetings with stakeholders:

- Meetings of the HMS Fish Plan Advisory Group
- 2 longline workshops held in Tauranga
- Pre-meeting consultations prior to attendance at CCSBT and WCPFC Commission and scientific meetings
- 2 meetings of the research advisory group
- 4 meetings of the HMS working group

## 3 Stock status for HMS Species

Stock	Last Assessment	Overfishing occurring	Stock overfished
Bigeye tuna	2014	Y	Y
Yellowfin tuna	2014	N	N
Skipjack tuna	2014	N	N
Albacore tuna	2015	N	N
Pacific Bluefin (NC)	2014	Y	Y
Southern Bluefin tuna	2014	N	Y
Swordfish	2013	N	N
Striped Marlin	2012	N	N

*Table 2: Summary stock status information for HMS fisheries (\*blue shaded cells indicate a change i.e. updated stock assessment and change to overfishing or overfished)*

### 3.1 HISTORICAL STOCK STATUS TRAJECTORY AND TUNA STOCKS

#### 3.1.1 Tropical tuna stock assessment updates

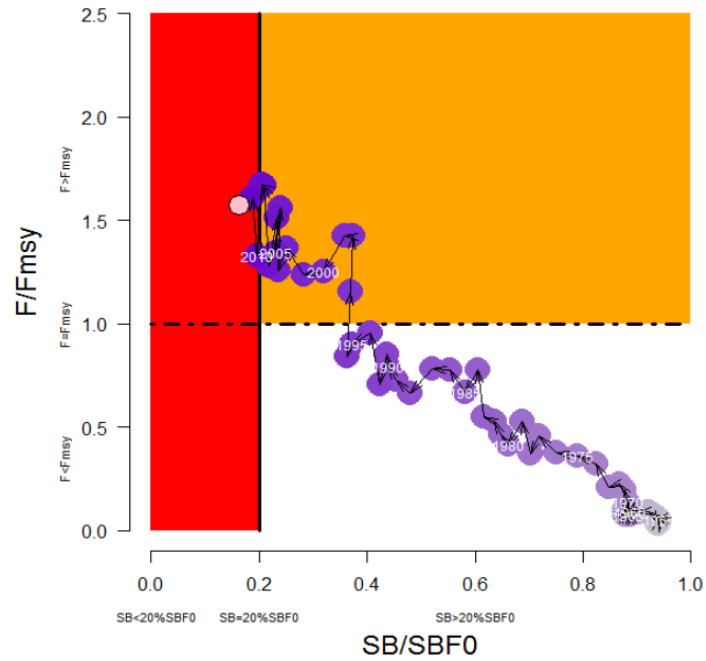
All assessments, except southern bluefin tuna, are presented to the Scientific Committee of WCPFC; the dates of the most recent assessment for each key species is shown in the table above. In 2015, stock assessments for albacore were updated.

Southern bluefin tuna stock assessments are carried out by the Scientific Committee of the CCSBT. The most recent assessment was presented at CCSBT Extended Scientific

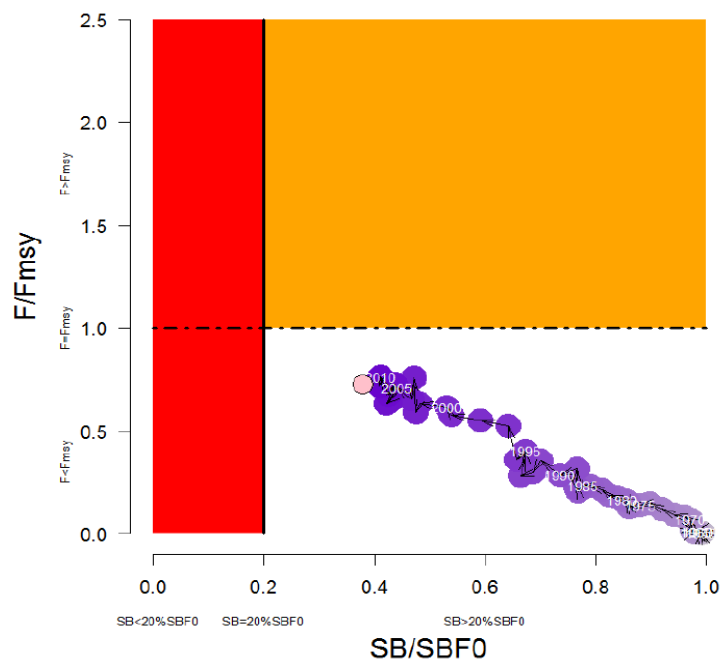
Committee in September 2014. The assessment suggested that the southern bluefin tuna spawning biomass is at a very low fraction (9%) of its original biomass, as well as below the level that could produce maximum sustainable yield (MSY). However, there has been some improvement since the 2011 stock assessment.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

## 3.2 Historical stock status trajectory for tuna stocks

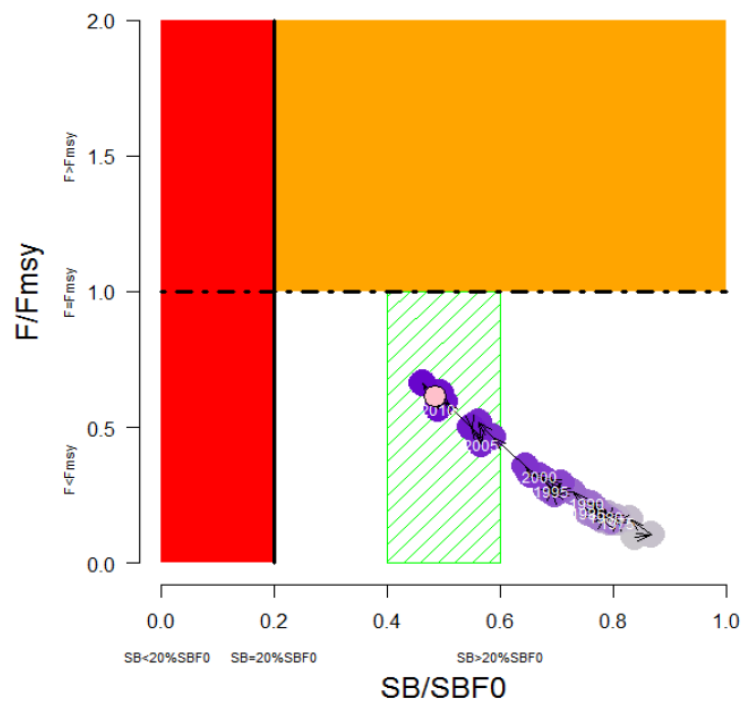
### 3.2.1 Bigeye (Assessed 2014)



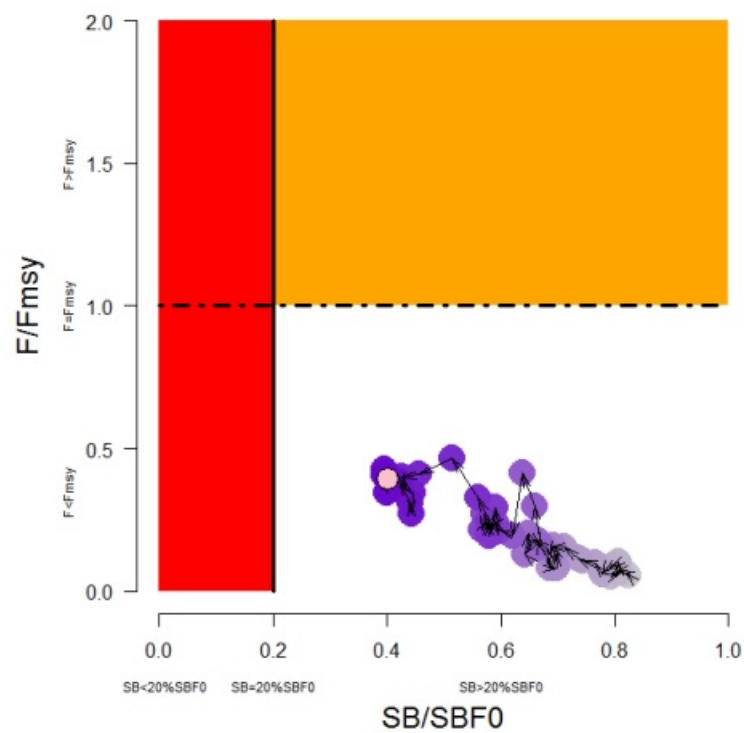
### 3.2.2 Yellowfin (Assessed 2014)



### 3.2.3 Skipjack (Assessed 2014)



### 3.2.4 Albacore (Assessed 2015)

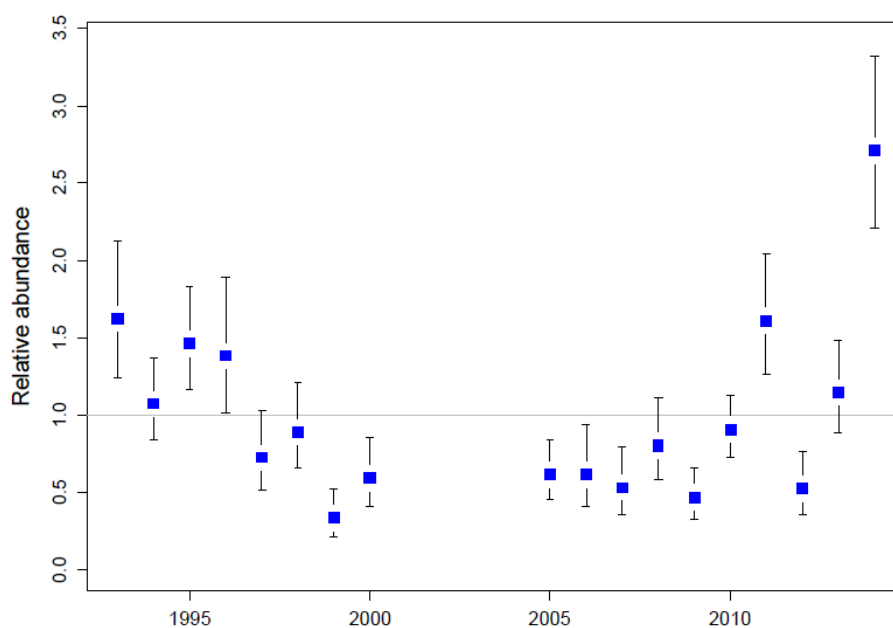


### 3.2.5 Southern Bluefin Tuna

- Stock assessment done in 2014; previous assessment 2011;
- Stock remains at a very low state;
- Biomass of fish aged ten and over (B10+) relative to unfished biomass is estimated at 7%, which is up from 5% reported in the 2011 assessment;
- Spawning stock status has improved - currently benefitting from recent high recruitments; and
- Concerns regarding sources of mortality are not currently accounted for in design of the management procedure.

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

- To rebuild the status of stock to an interim building 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;
- The TAC shall be set for three-year periods; and
- The national allocation of the TAC within each three-year period will be apportioned according to the Resolution on the Allocation of the Global Total Allowable Catch.



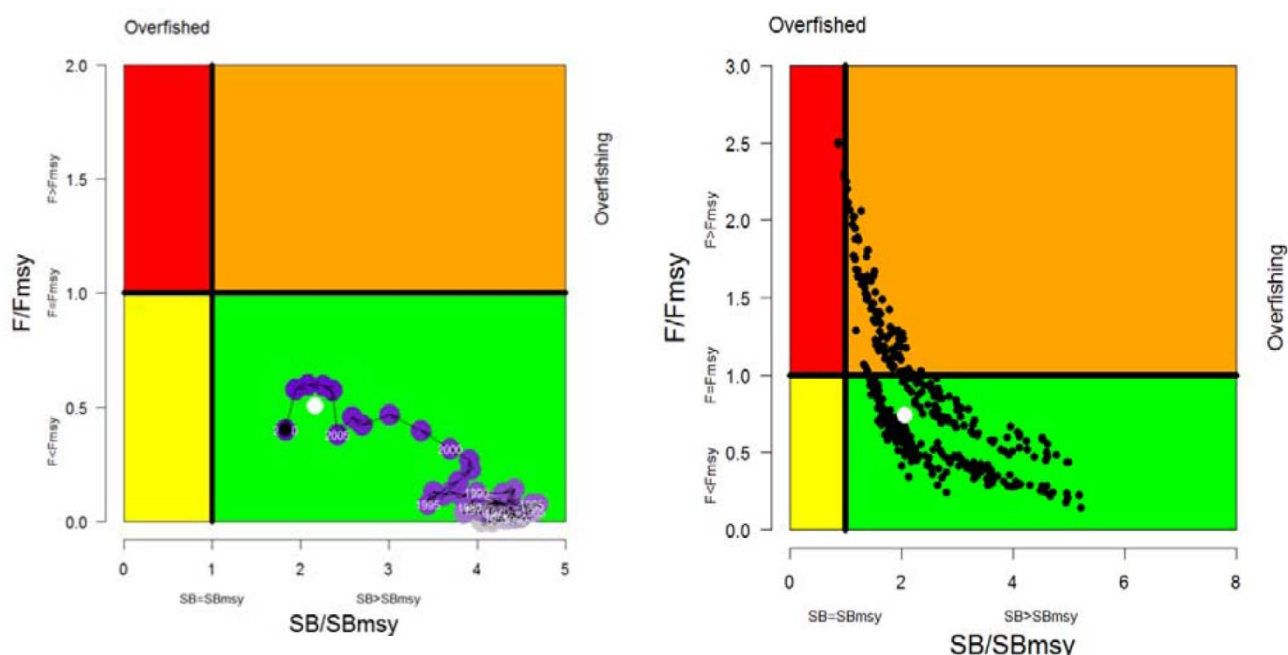
Time series of relative abundance estimates for southern bluefin tuna from Australian Aerial Survey (with 90% confidence intervals). No survey done in 2015.

### 3.2.6 Swordfish

There was no stock assessment conducted for south Pacific swordfish in 2015. Therefore, the stock status description from the 9<sup>th</sup> 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)



### 3.2.7 Pacific Bluefin

There was an updated stock assessment for bluefin tuna in the Pacific Ocean in 2014. Although no target or limit reference points have been established for the Pacific bluefin stock under the auspices of the WCPFC and Inter-American Tropical Tuna Committee (IATTC), the current  $F_{\text{average}}$  (average fishing mortality) over 2009-2011 exceeds all target and limit biological reference points commonly used by fisheries managers, except for  $F_{\text{loss}}$  (the fishing mortality corresponding to the lowest observed spawning stock and associated recruitment). The ratio of spawning stock biomass (SSB) in 2012 relative to unfished SSB (depletion ratio) is less than 6%. In summary, based on reference point ratios, **overfishing** is occurring and the stock is **overfished**.

The scientific body responsible for assessing Pacific bluefin, the International Scientific Committee for Tuna and Tuna-like species in the North Pacific Ocean (ISC), provided the following conservation advice:

- The current (2012) Pacific bluefin tuna biomass level is near historically low levels and the stock is experiencing high exploitation rates above all biological reference points except for  $F_{\text{loss}}$ ;
- Further, substantial reductions in fishing mortality and juvenile catch over the whole range of juvenile ages should be considered to reduce the risk of SSB falling below its historically lowest level;
- Based on projection results, the recently adopted WCPFC conservation and management measure (CMM) (2013-09) and IATTC resolution for 2014 (C-13-02), if continued into the future, are not expected to increase SSB if recent low recruitment continues;
- Unless the historical average level (1952-2011) of recruitment is realised, an increase of SSB cannot be expected under the current WCPFC and IATTC conservation and management measures, even under full implementation; and
- Given the low level of SSB, uncertainty in future recruitment, and importance of recruitment in influencing stock biomass, monitoring of recruitment should be strengthened to allow the trend of recruitment to be understood in a timely manner

The 10th Regular Session of the Northern Committee (NC) (September 2014) adopted a draft CMM for Pacific Bluefin tuna and submitted it to the Commission (WCPFC11) for adoption. WCPFC11 adopted CMM 2014-04: Conservation and Management Measure to establish a multi-annual rebuilding plan for Pacific Bluefin tuna<sup>1</sup>.

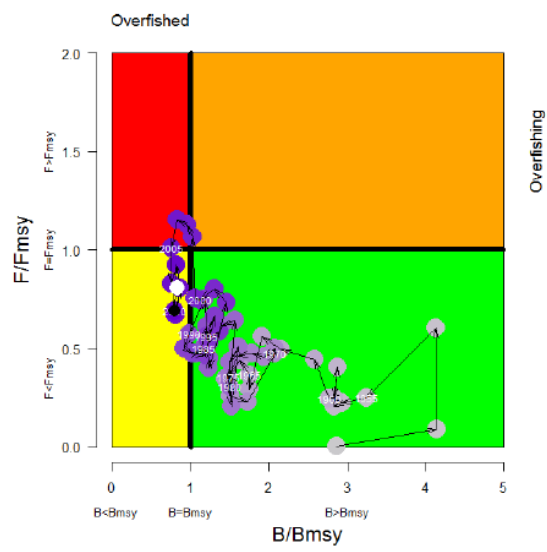
### 3.2.8 Striped Marlin

There was no stock assessment conducted for southwest Pacific striped marlin in 2014. Therefore, the stock status description from SC9 is still current:

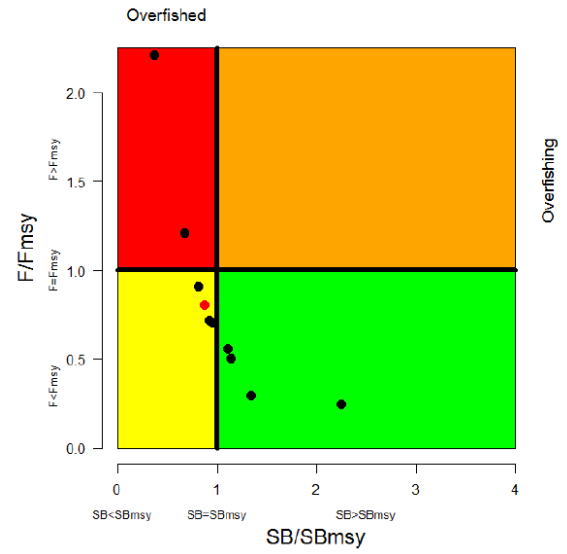
- *Overfishing is not occurring* in the striped marlin stock
- Based on recent trend in spawning biomass, striped marlin is *approaching an overfished state*

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<sup>1</sup> <https://www.wcpfc.int/doc/cmm-2014-04/conservation-and-management-measure-establish-multi-annual-rebuilding-plan-pacific>



*Temporal trend in annual stock status of south-west Pacific Striped Marlin relative to SBMSY (x-axis) and FMSY (y-axis), for the period 1952–2010 (Ref.case)*

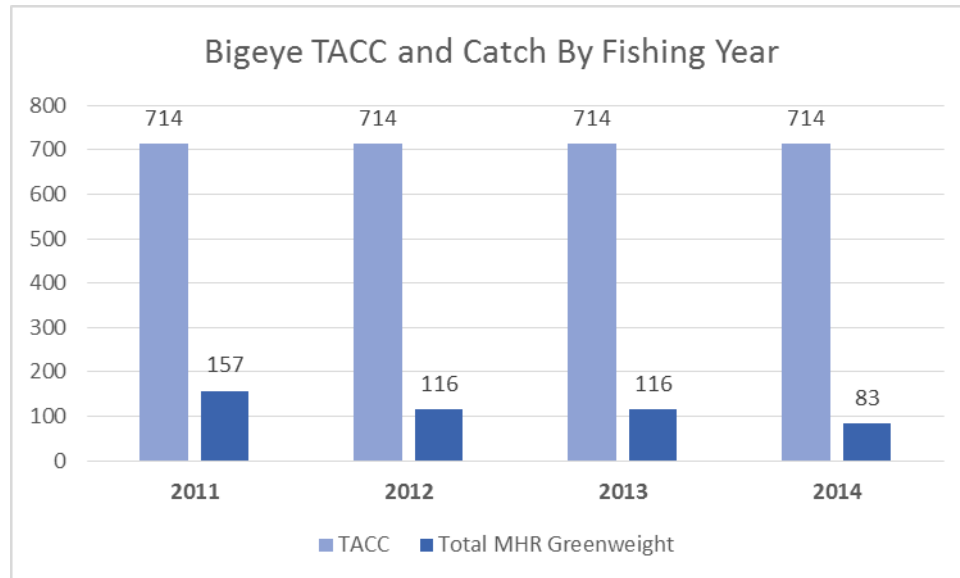


*Summary of current stock status of south-west Pacific Striped Marlin (based on 2007-10) for the key model runs. Red circle represents the Ref.case run.*

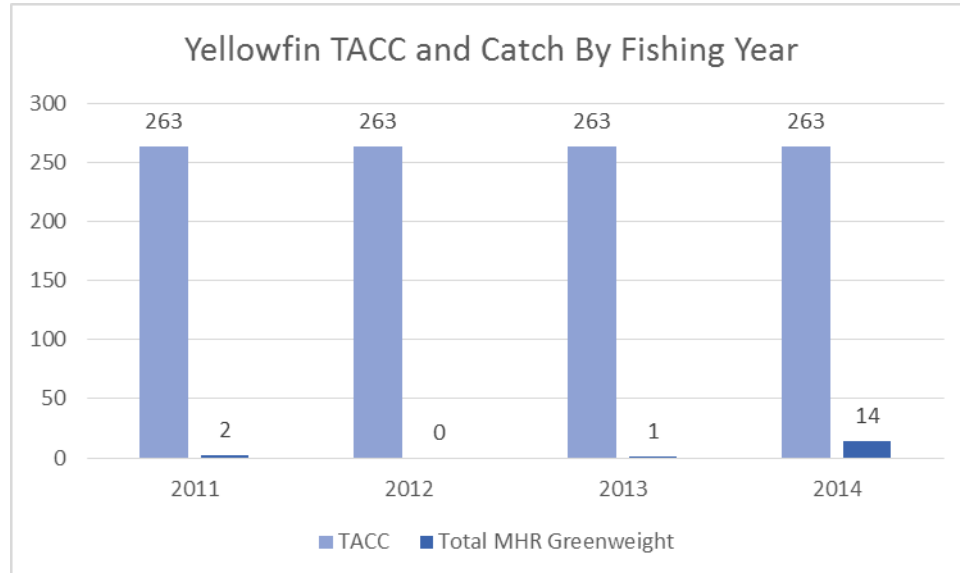
### 3.3 Catch against Total Allowable Commercial Catch (TACC)

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.

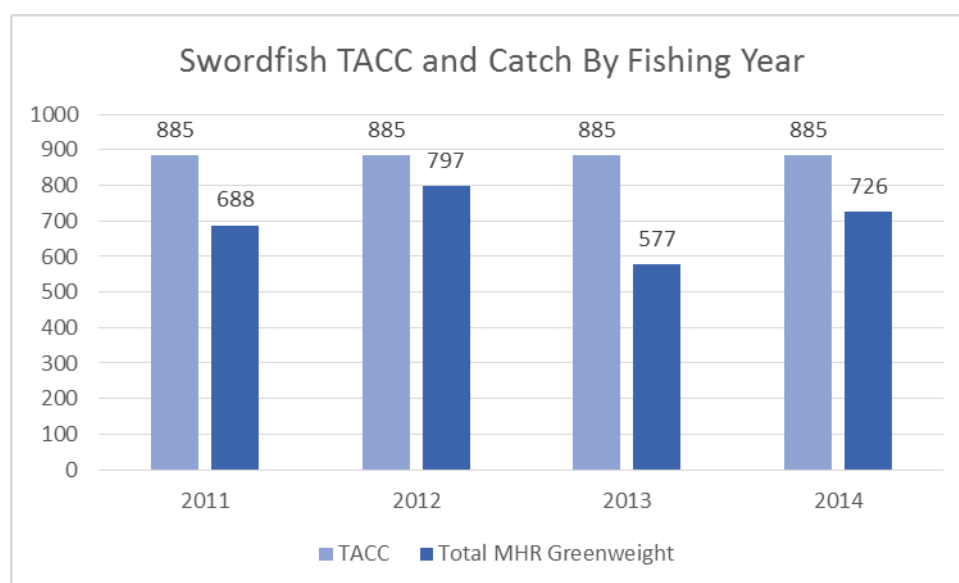
#### 3.3.1 Bigeye (BIG)



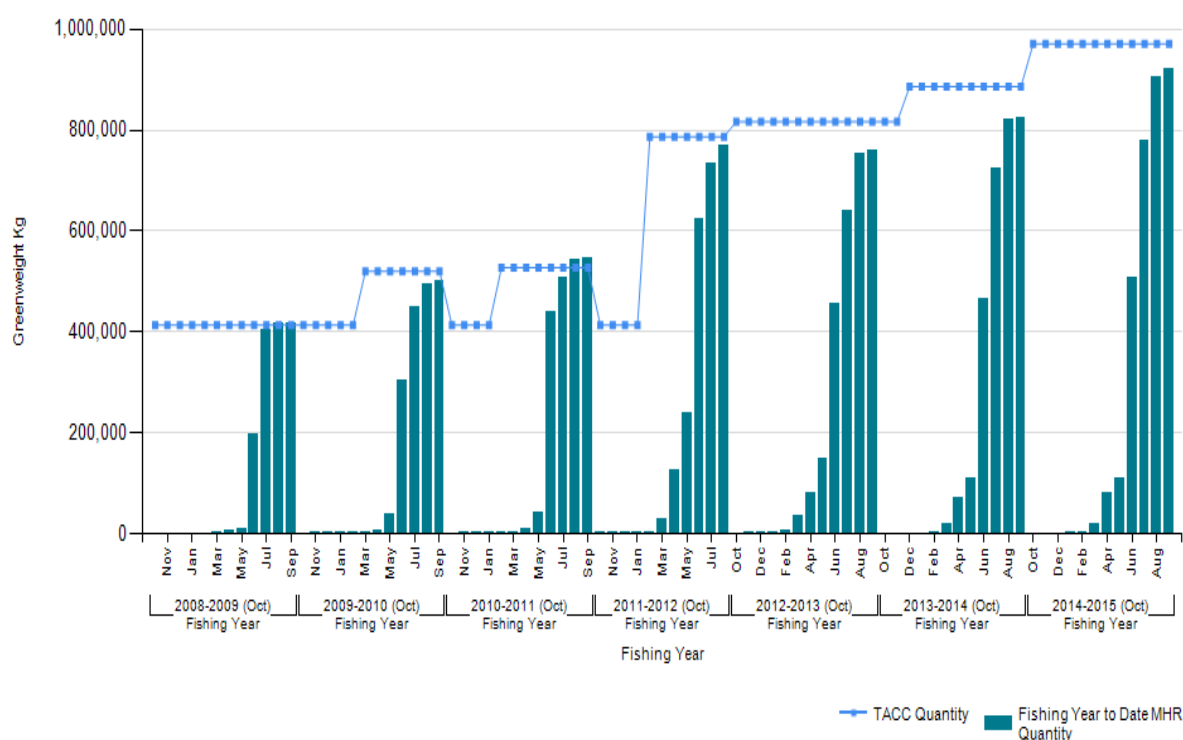
#### 3.3.2 Yellowfin (YFN)



### 3.3.3 Swordfish (SWO)

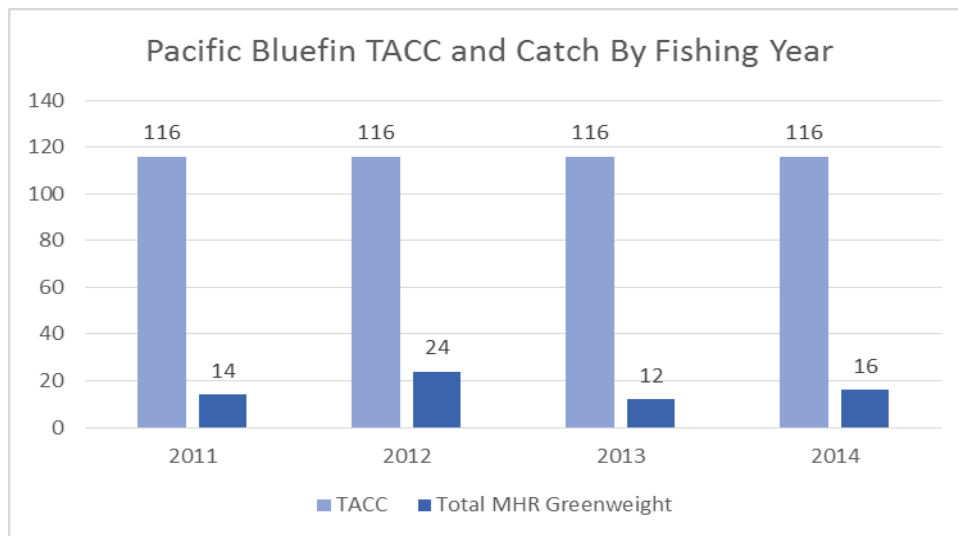


### 3.3.4 Southern Bluefin Tuna (STN)

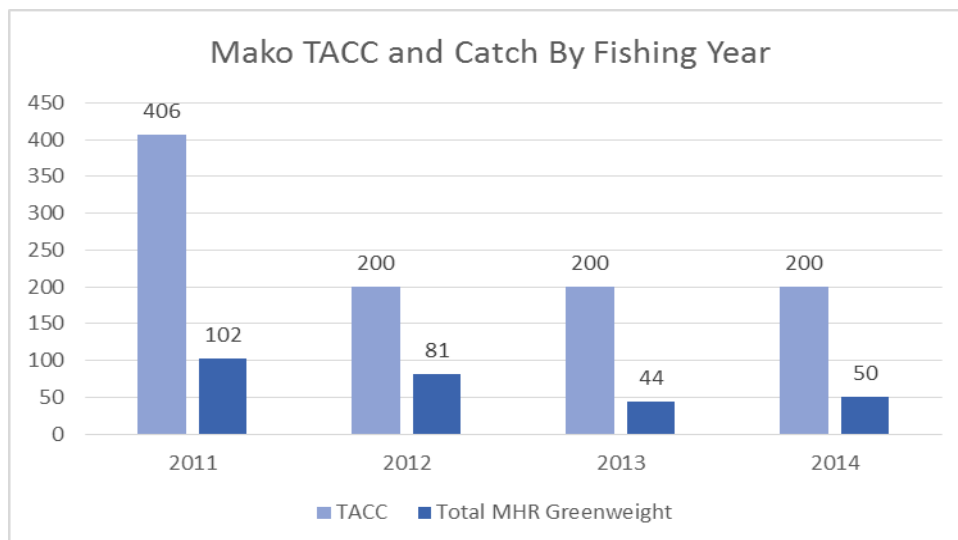


Please note that graph is in kilos rather than tonnes. Southern bluefin tuna is represented here by a different graph that gives monthly cumulative catch against the TACC and thus illustrates in-season increases to the TACC quantity.

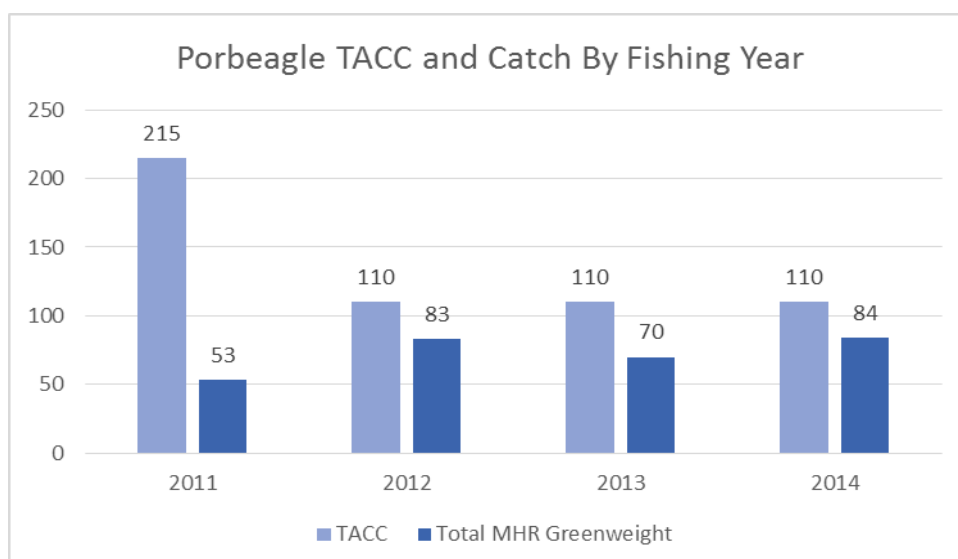
### 3.3.5 Pacific Bluefin Tuna (TOR)



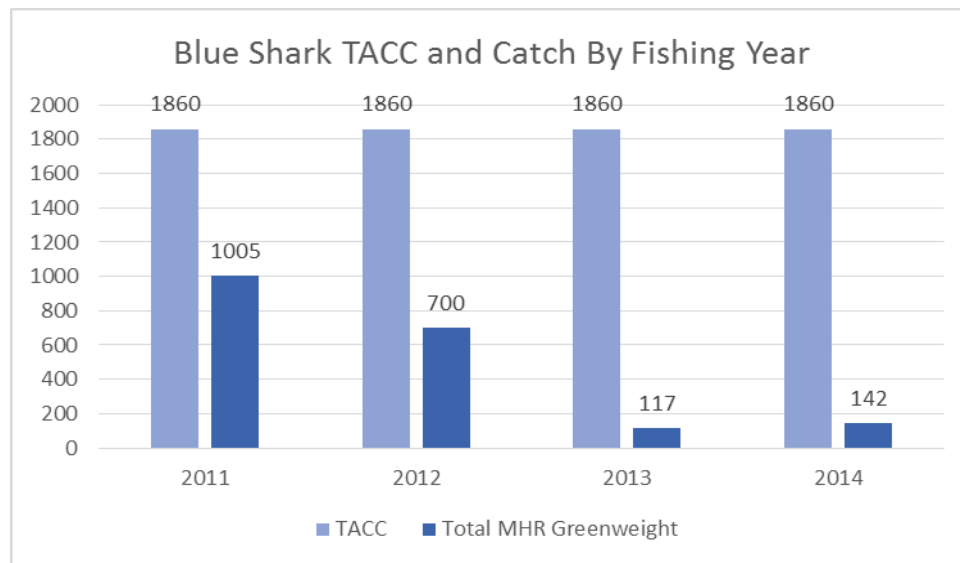
### 3.3.6 Mako shark (MAK)



### 3.3.7 Porbeagle shark (POS)



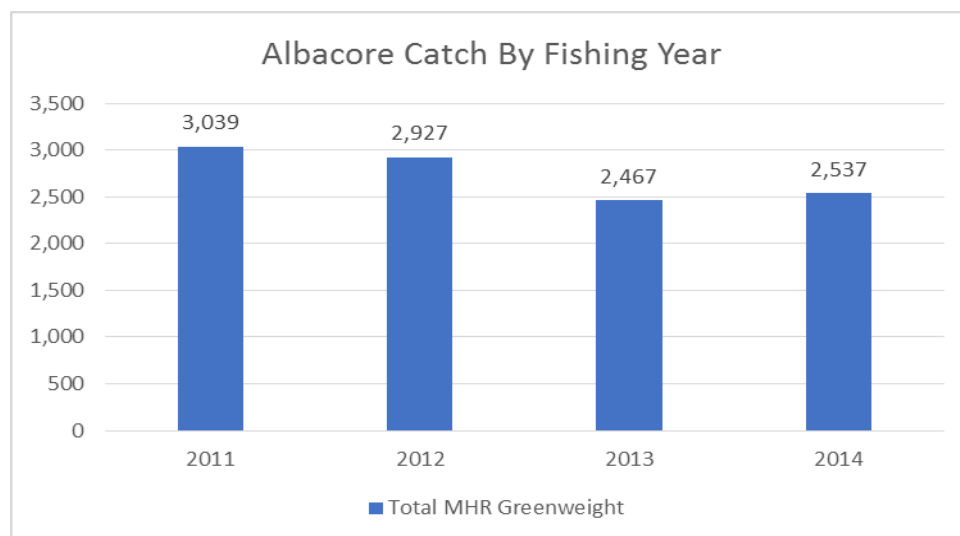
### 3.3.8 Blue shark (BWS)



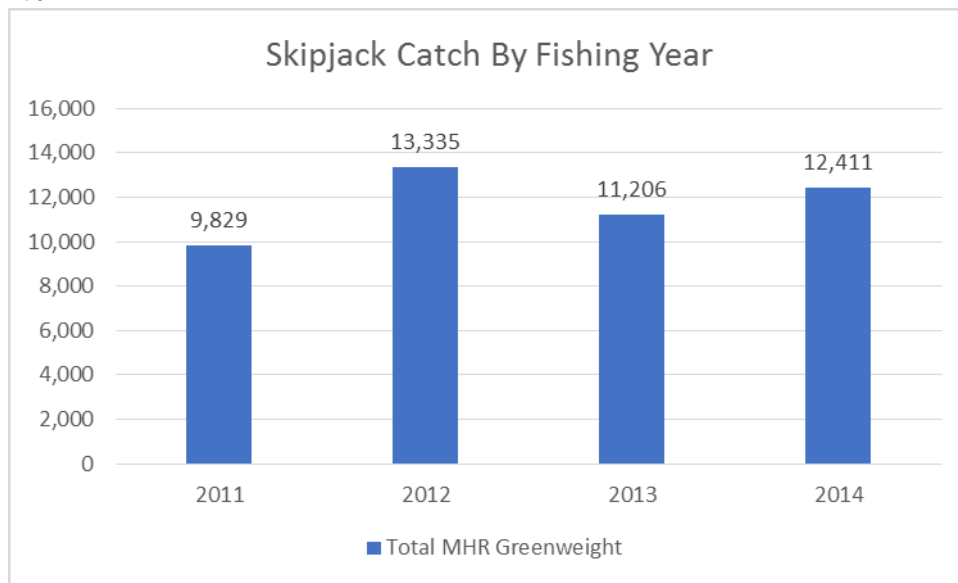
## 3.4 CATCHES OF NON QUOTA SPECIES

All amounts are shown in tonnes.

### 3.4.1 Albacore



### 3.4.2 Skipjack



## 4 Environmental reporting

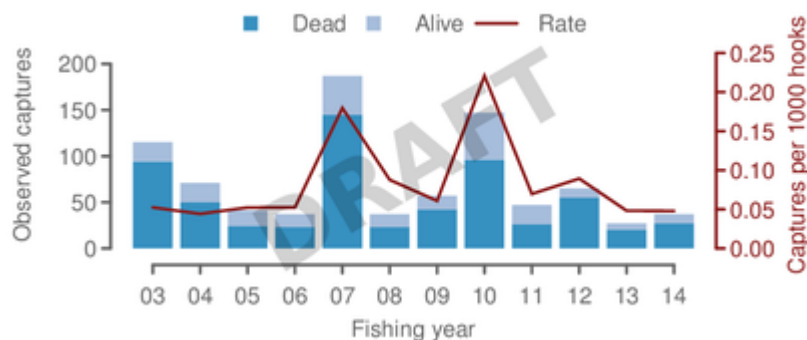
### 4.1 Seabirds - surface longline (SLL) fisheries

“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.

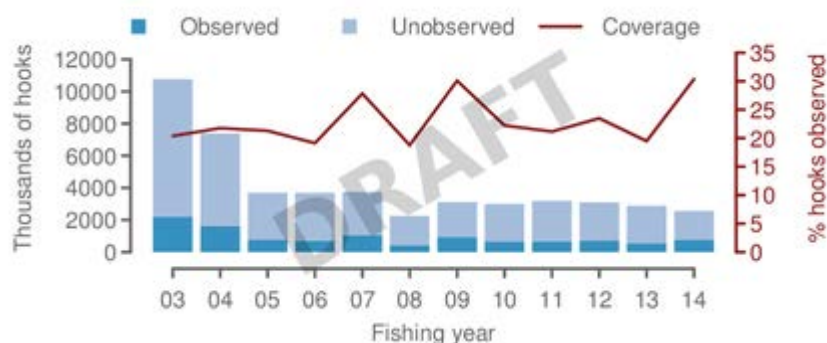
In the 2013–14 fishing year, there were 37 observed captures of all birds in surface longline fisheries. Observed captures were of southern Buller’s albatross (23), New Zealand white-capped albatross (6), white-chinned petrel (1), southern royal albatross (1), grey petrel (1), great albatrosses (1), fulmars, petrels, prions and shearwaters (1), albatrosses (1), Gibson’s albatross (1), and Campbell black-browed albatross (1). No estimates of total captures were made.” (Dragonfly, Ltd.)

Unless otherwise indicated, the source is the database of protected species bycatch compiled by Dragonfly Ltd, see <https://data.dragonfly.co.nz/psc-dev/>. For more information on the methods used to prepare the data, see [Abraham and Thompson \(2011b\)](#).

#### Observed captures of birds in surface longline fisheries



#### Fishing effort and observations in surface longline Fisheries

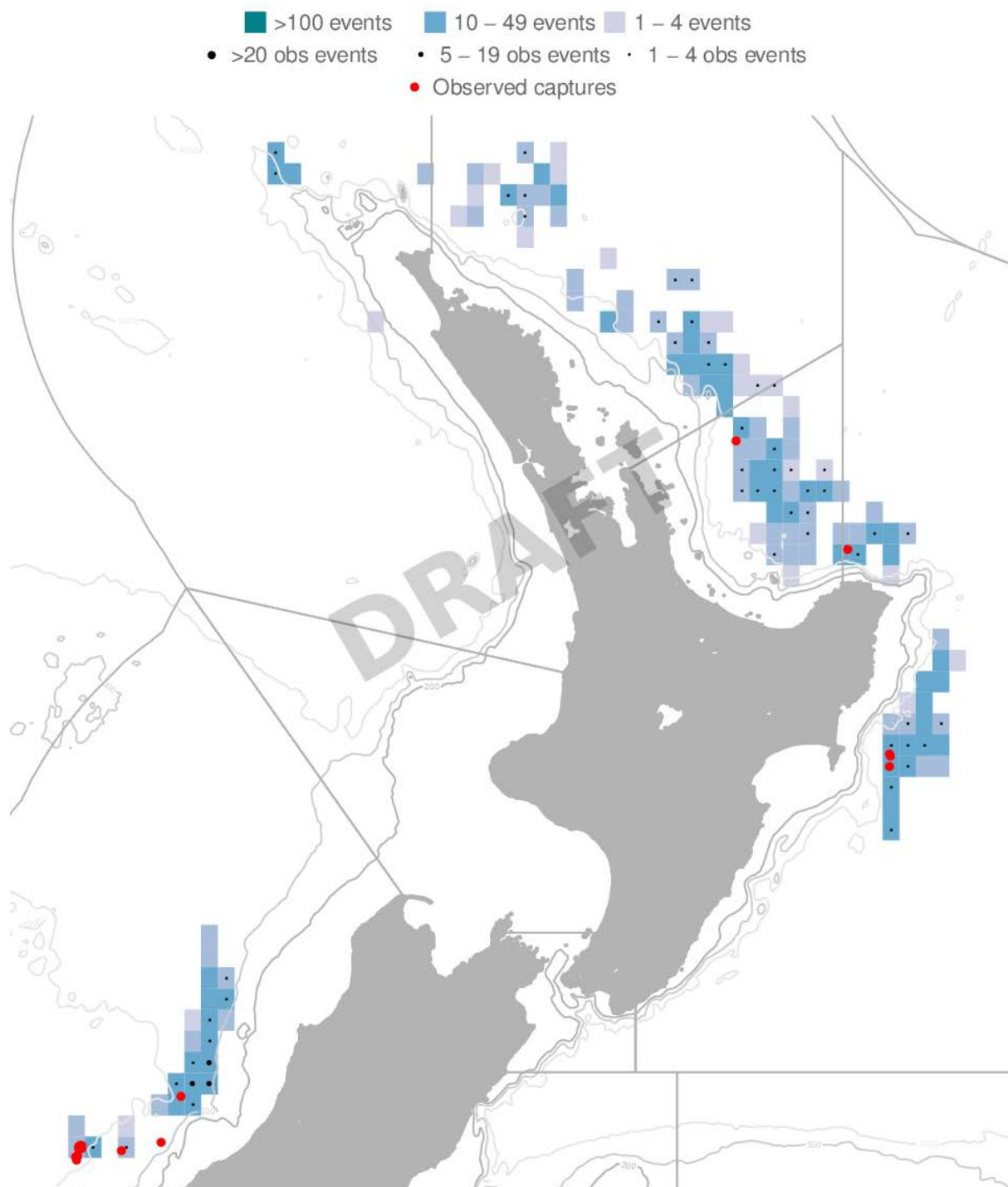




Fishing effort			Observed captures		
	All hooks	Observed hooks	Percent	Number	Rate
2002–03	10 770 488	2 195 152	20.4	115	0.052
2003–04	7 386 484	1 607 304	21.8	71	0.044
2004–05	3 679 765	783 812	21.3	41	0.052
2005–06	3 690 869	705 945	19.1	37	0.052
2006–07	3 739 912	1 040 948	27.8	187	0.18
2007–08	2 246 139	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	147	0.221
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	30.4	37	0.048

**Table 3:** Effort and seabird captures in SLL fisheries by fishing year. (Due to Ministry for Primary Industries 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)

## Map of SLL fishing effort and observed captures, October 2003 – September 2014



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, 94% of the effort is shown.

Source: Aquatic Environment and Biodiversity Annual Review 2014. A summary of environmental interactions between the seafood sector and the aquatic environment.

Species or species group	Dead	Alive
Campbell black-browed albatross	1	
Fulmars, petrels, prions and shearwaters		1
Gibson's albatross	1	
Great albatrosses	2	
Grey petrel	1	
New Zealand white-capped albatross	6	
Southern Buller's albatross	15	9
White-chinned petrel	1	
<b>TOTAL</b>	<b>27</b>	<b>10</b>

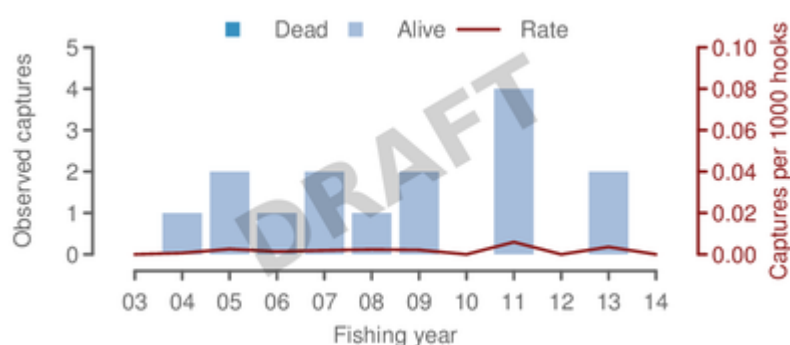
Table 4: Summary of observed captures by species (dead and alive) on SLL vessels during the 2014–15 fishing year

## 4.2 Turtles - surface longline fisheries

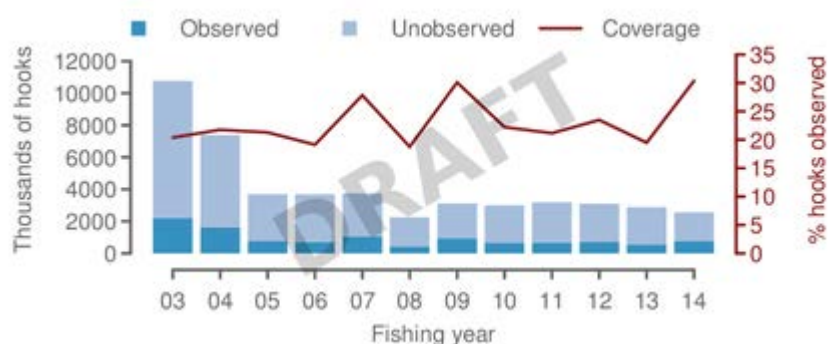
“In the 2013–14 fishing year, there were no observed captures of turtles in surface longline fisheries. No estimates of total captures were made.” (Dragonfly)

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

Observed captures of turtles in surface longline fisheries – including provisional 2013-14 data



Fishing effort and observations in surface longline fisheries – including provisional 2013-14 data



All observed turtle captures in this period were alive on capture and were released.

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

**Table 4:** Observed captures of turtles in SLL fisheries, by fishing year (Source: New Zealand Annual Report to the [Western and Central Pacific Fisheries] Commission. Part 1: Information on fisheries, research and statistics: New Zealand. Available at: <http://www.wcpfc.int/meetings/11th-regular-session-scientific-committee#>)

### 4.3 Other non-target associated and dependent species

Species	Scientific name	2009	2010	2011	2012	2013	2014
Blue shark	<i>Prionace glauca</i>	810	713	785	985	661	106
Mako shark	<i>Isurus oxyrinchus</i>	82	66	97	95	79	49
Moonfish	<i>Lampris guttatus</i>	89	112	107	91	65	51
Porbeagle shark	<i>Lamna nasus</i>	65	64	75	52	85	74
Ray's bream	<i>Brama brama</i>	175	118	144	150	847	658

**Table 5:** Landed catch (t) 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 2009 - 2013 and for some species may include catches from non-tuna fisheries. (Source: New Zealand Annual Report to the [Western and Central Pacific Fisheries] Commission. Part 1: Information on fisheries, research and statistics: New Zealand. Available at: <http://www.wcpfc.int/meetings/11th-regular-session-scientific-committee#>)

Species	2011	2012	2013	2014	% retained (2014)	discards % alive (2014)
Blue shark	53 432	132 925	158 736	80 118	16.2	89.2
Lancetfish	37 305	7 866	19 172	21 002	0.3	24.4
Porbeagle shark	9 929	7 019	9 805	5 061	30.6	70.7
Rays bream	18 453	19 918	13 568	4 591	96.1	7.4
Mako shark	9 770	3 902	3 981	4 506	30.3	68.8
Sunfish	3 773	3 265	1 937	1 981	2.4	80.0
Moonfish	3 418	2 363	2 470	1 655	96.6	87.5
Dealfish	223	372	237	910	0.4	24.9
Butterfly tuna	909	713	1 030	699	77.3	3.4
Pelagic stingray	4 090	712	1 199	684	0.0	93.5
Escolar	6 602	2 181	2 088	656	88.6	0.0
Deepwater dogfish	548	647	743	600	1.2	80.9
Oilfish	1 747	509	386	518	82.1	40.0
Rudderfish	338	491	362	327	10.7	83.3
Thresher shark	349	246	256	261	28.6	80.0
Big scale pomfret	139	108	67	164	74.5	75.0
Striped marlin	175	124	182	151	0.0	94.3
School shark	49	477	21	119	72.0	78.6
Skipjack tuna	255	123	240	90	80.0	0.0

**Table 6:** Total estimated catch (numbers of fish) of common bycatch species in the New Zealand longline fishery as estimated from observer data from 2010 to 2014. Also provided is the percentage of these species retained (2014 data only) and the percentage of fish that were alive when discarded, N/A (none discarded) (Source: New Zealand Annual Report to the [Western and Central Pacific Fisheries] Commission. Part 1: Information on fisheries, research and statistics: New Zealand. Available at: <http://www.wcpfc.int/meetings/11th-regular-session-scientific-committee#>)

## 5 Cost recovery levies

2015/2016 Plan	MPI Departmental		Observers		Research		Under/Over Recovery						
Stock	Compliance	Registry	MPI	DoC	MPI	DoC	MPI	DoC	2012/13 Total	2013/14 Total	2014/15 Total	2015/16 Total	Change
ALB	36,521	13,428	223		113,095	5,466	-53,568	639	219,661	246,303	89,142	115,805	26,663
BIG1	120,276	44,225	91,915	19,218	82,296	123,134	-48,100	-5,445	295,847	304,996	279,176	427,519	148,343
BWS1	2,489	915	15		268	58	-3,687	-58	31,680	126,292	12,846	0	-12,846
MAK1	763	281	5		45,762	18	-3,145	-2	4,084	2,712	37,188	43,681	6,493
MOO1	10,646	3,915	65		267	247	379	-40	15,838	16,510	14,376	15,478	1,102
POS1	299	110	2		32	7	-442	-7	3,778	100,406	419	0	-419
RBM1	12,465	4,583	76		312	289	483	-47	17,269	19,206	16,542	18,161	1,619
SKJ	36,208	13,313	49,946	9,722	57,078	0	-156,545	-9,722	360,702	217,231	0	0	-0
STN1	95,313	35,046	258,913	48,612	45,357	66,754	-28,746	-5,875	405,719	779,006	353,452	515,374	161,922
SWO1	44,024	16,187	33,640	7,032	30,123	30,385	-20,920	-2,331	42,527	149,527	104,012	138,141	34,129
TOR1	38,821	14,274	237		970	752	1,379	-146	38,301	49,081	51,970	56,287	4,317
YFN1	18,160	6,677	111		1,953	0	656		7,079	19,620	21,429	27,557	6,128
<b>TOTAL</b>	415,985	152,955	435,148	84,584	377,513	227,109	-312,256	-23,034	1,442,485	2,030,890	980,552	1,358,003	377,451
<b>2014/15 Comparatives</b>	465,508.00	170,054.00	368,271.00	73,612.00	146,497.00	113,881.00	-308,296.00	-48,975.00					
<b>Change</b>	49,523.00	17,099.00											

Table 7: Cost recovery levies for 2015/2016 financial year.

There is an overall increase in levies in 2015-16, but it is worth noting that this year follows 2014-15, which saw massive (~50%) decreases in levies. This year's increase in levies is relatively small and does not mark a reversal of last year's trend to previous levy levels. The largest increases were research costs, specifically in the case of southern bluefin and bigeye tunas. The largest decreases were for albacore and mako, reflecting the change from last year's higher-cost research projects.

## 6 List of HMS Research Projects as of 2 November 2015

### **Projects scheduled to finish in 2015-16**

ALB2013-01	Catch sampling of albacore
HHS2013-01	Stock dynamics of hammerhead sharks
HMS2014-02	Age, growth and reproduction of mako sharks
HMS2014-05	Stable isotope analysis of highly migratory species to assess trophic linkages and spatial and temporal movement trends of HMS sharks
STN2011-01	Catch-at-age data for southern bluefin tuna

### **Continuation of Ongoing Projects in 2016-17**

ALB2015-01	Albacore catch sampling
HMS2013-01	Data reports for New Zealand HMS fisheries for national and international obligations
HMS2014-01	Commercial catch sampling for highly migratory species
HMS2015-01	Age, growth, and reproduction of HMS sharks from observer collected samples – blue sharks
HMS2015-02	Stable isotope analysis of highly migratory species to determine their spatial and temporal movements and assess their trophic linkages
STM2013-01	Multi-year stock monitoring of striped marlin including logbook programme implementation
TAG2013-01	Management of data from the gamefish tag recapture programme

### **Proposed new projects for 2016-17**

HMS2016-01	Data reports for New Zealand HMS fisheries for national and international obligations
STN2016-01	Catch-at-age data for southern bluefin tuna
STM2016-01	Multi-year stock monitoring of striped marlin including logbook programme implementation
TAG2016-01	Management of data from gamefish tag-recapture programme

## 7 Observer Monitoring – Days by Fishery

		2014			2015									TOTAL
<i>SLL ECNI STN</i>		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
	Planned	0	0	0	0	0	0	0	24	55	72	23	0	174
	Achieved	0	0	0	0	0	0	0	15	11	57	11	0	94
<i>SLL WCSI STN</i>		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
	Planned	0	0	0	0	0	21	21	21	21	18	18	0	120
	Achieved	0	0	0	0	0	0	11	16	3	6	0	0	36
<i>SLL EC BIG/SWO</i>		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
	Planned	10	15	15	20	30	40	35	25	5	5	15	10	225
	Achieved	25	0	0	9	9	8	17	0	0	0	0	0	68
<i>SLL WC BIG/SWO</i>		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
	Planned	0	0	0	5	5	5	5	5	0	5	10	5	45
	Achieved	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>PS Domestic</i>		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
	Planned	0	0	0	25	15	20	0	0	0	0	0	0	60
	Achieved	0	0	0	13	35	4	0	0	0	0	0	0	52
<i>PS Super Seiner</i>		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
	Planned	0	0	0	0	0	30	0	0	0	0	0	0	30
	Achieved	0	0	0	0	11	28	23	0	0	0	0	0	62
<i>STN Charter</i>		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
	Planned	0	0	0	0	0	0	0	124	116	0	0	0	240
	Achieved	0	0	0	0	0	0	20	124	83	0	0	0	227

Table 8: Observer Coverage for 2014-2015 Fishing Year





## 8 Non-commercial monitoring

### 8.1 Gamefish tagging rates and numbers from the New Zealand Gamefish Tagging Programme

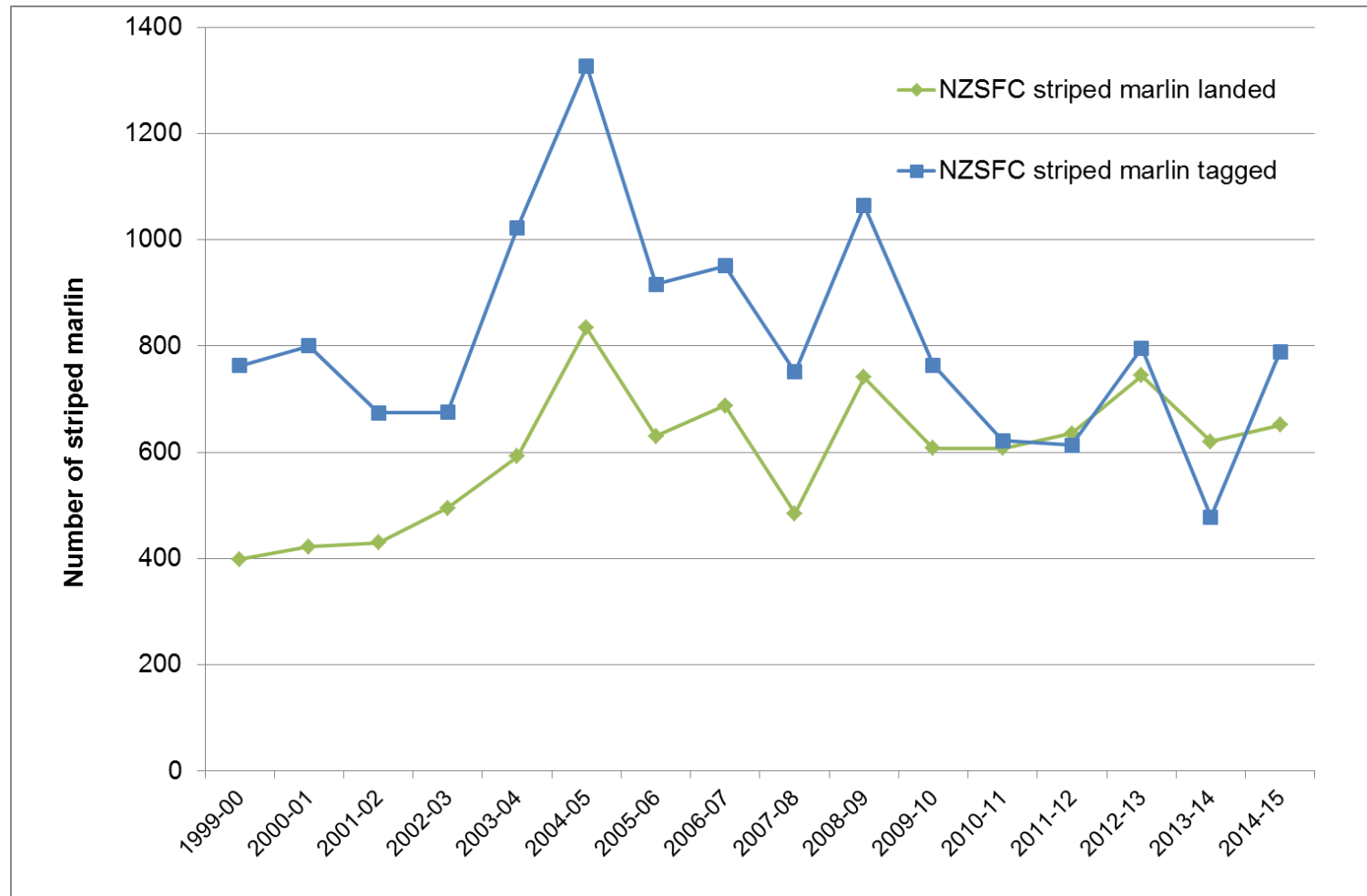
Mako	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2005 to 2015 (Average)
<b>NZ EEZ Tagged</b>	193	150	297	285	494	609	488	524	367	390	<b>380</b>
<b>% tagged</b>	81	82	87	87	90	92	92	94	93	97	<b>90</b>
<b>Recaptures</b>	3		2	5	7	7	8	11	6	0	<b>5</b>

Blue shark	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2005 to 2015 (Average)
<b>NZ EEZ Tagged</b>	95	157	108	101	73	128	142	148	120	83	<b>116</b>
<b>% tagged</b>	76	91	90	89	92	91	90	93	93	93	<b>90</b>
<b>Recaptures</b>	1	2	3	4	3	3	4	3	3	0	<b>3</b>

NZGTP Billfish	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2005 to 2015 (Average)
<b>Striped marlin</b>	923	965	806	1058	858	731	663	745	468	845	<b>806</b>
<b>Blue marlin</b>	17	26	29	24	32	78	50	17	9	29	<b>31</b>
<b>Shortbill spearfish</b>	11	14	8	5	15	21	5	0	6	12	<b>10</b>
<b>Swordfish</b>	5	16	25	24	18	37	50	33	27	13	<b>25</b>
<b>Billfish recaptures</b>	2	1	4	3	2	1	1	4	4	2	<b>2</b>

*Table 9: Gamefish Tagging Programme. These tables show the number of sharks and billfish tagged in the NZ Gamefish Tagging Programme in the EEZ by sport fishing year (July to June). The percent tagged is taken from NZ 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.*

## 8.2 Striped Marlin Recreational Catch



Recreational catch of striped marlin from New Zealand Sport Fishing Council and Gamefish Tagging Programme records