Fisheries New Zealand
Tini a Tangaroa

Annual Review Report

For Highly Migratory Species Fisheries 2019/20

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Overview

The Annual Review Report for Highly Migratory Species Fisheries 2019/20 (Annual Review Report) reviews the delivery of management initiatives specified in the Annual Operational Plan for Highly Migratory Species Fisheries 2019/20 (Annual Operational Plan). The Annual Review Report also reviews overall performance of highly migratory species (HMS) fisheries in relation to some of the wider highly migratory species management objectives.

The Annual Operational Plan for 2019/20 ran from 1 July 2019 to 30 June 2020. This Annual Review Report will review the delivery of tasks during the timeframe of the Annual Operational Plan, and over the 2018/19 fishing year, or earlier years if the data is not yet available[1].

The Annual Operational Plan for 2019/20 identified tasks under Key Focus Areas and Business as Usual items, which were designed to contribute towards the 12 Management Objectives defined in the National Fisheries Plan for HMS 2019:

Use outcome	1	Support viable and profitable commercial HMS fisheries in New Zealand
	2	Maintain and enhance world class game fisheries in New Zealand fisheries waters
	3	Māori interests (including customary, commercial, recreational, and environmental) are enhanced
Environmental outcome	4	Maintain sustainable HMS fisheries within environmental standards
	5	Implement an ecosystem approach to fisheries management, taking into account associated and dependent species
	6	Protect, maintain, and enhance fisheries habitat
Governance conditions	7	Maintain an effective fisheries management regime
	8	Recognise and deliver Deed of Settlement obligations
	9	Ensure New Zealand interests are taken into account internationally
	10	Contribute to Pacific capacity development

[1] The fishing year for HMS fisheries is from 1 October to 30 September.

Key Focus Areas (KFAs)

KFA 1: MANAGE INTERACTIONS OF HMS FISHERIES WITH SEABIRDS

New Zealand's *National Plan of Action to reduce the incidental catch of seabirds in New Zealand fisheries 2013* (National Plan of Action for Seabirds 2013) set 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.*

The Annual Operational Plan 2019/20 contained a number of management initiatives to meet objectives contained in the National Plan of Action for Seabirds 2013. These included monitoring of seabird captures and fleet behavior, advocating for improvements internationally, and supporting science related to seabird captures. The new National Plan of Action for Seabirds 2020 will drive management initiatives of the Annual Operational Plan 2020/21.

Seabird captures

During the 2018/19 fishing year, there were 57 observed captures of seabirds in the surface longline fishery (10% observed effort). This figure comprises 44 dead and 13 live releases. This is a decrease compared with the 2017/18 fishing year, when 99 seabirds were observed captured (12.9% observed effort).

Seabird proxy measures

In lieu of capture rates (due to low observer coverage), seabird proxy measures are used to provide an indication of incidental seabird captures in the surface longline fishery. Three proxy measures are used: the level of observed compliance with mitigation measures; the level of self-reporting of non-fish bycatch on observed trips compared with non-observed trips; and vessel adherence to protected species risk management plans.

Observed compliance with mitigation measures

Tori line, line weighing, and night setting use rates on observed sets.

The Fisheries (Seabird Mitigation Measures – Surface Longlines) Circular 2018[2] required that commercial fishers use two out of three prescribed mitigation measures when setting surface longlines:

1. Use tori lines; and
2. *Either:*
    a. Set lines at night (night setting); *or*
    b. Use weighted lines

The following table provides the seabird mitigation use rates in the southern bluefin tuna surface longline fishery, swordfish surface longline fishery, and 'all tunas' surface longline fisheries combined (southern bluefin, bigeye, pacific bluefin, and yellowfin)[3].

[2] The 2018 Circular was revoked on 10 January 2020, when the Fisheries (Seabird Mitigation Measures – Surface Longlines) Circular 2019 came into force to reflect changes relating to the use of hook-shielding devices.

[3] The surface longline fishery has been divided into these three groups because different target species can result in different mitigation set-up. For example, surface longline operations targeting swordfish may prefer to day set and use line weighting, compared with surface longline operations targeting southern bluefin tuna, which may prefer to set at night.

Previously, the information captured as part of observer reporting of line weighting has not been sufficient to report if the snoods were being weighted according to the required specifications, resulting in 0% compliance reporting. Therefore, information in **Table 1** could imply a level of non-compliance that is overstated. The observer reporting was amended, and since July 2018, captures sufficient information to report the use of line weighting.

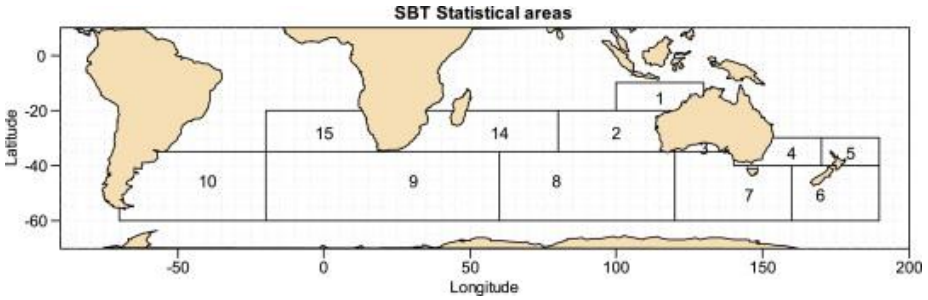
Table 1. Observed mitigation use rates (percentage of observed effort with specific mitigation measures) per year and area for surface longline effort targeting southern bluefin tuna.

Fishing year	Area (CCSBT stratum)	Tori line and night setting	Tori line and line weighting	Tori line, night setting, and line weighting	Tori line only	Night setting only
2017/18	5	67	1	26	2	4
	6	63		37		
2018/19	5	85	3	11		1
	6			100		

Table 2. Observed mitigation use rates (percentage of observed effort with specific mitigation measures) per year and area for of surface longline effort targeting swordfish and all tunas apart from southern bluefin tuna.

Fishing year	Area (CCSBT stratum)	Tori line and night setting	Tori line and line weighting	Tori line, night setting, and line weighting	Tori line only	Night setting only
2017/18	5	70		23		7
	6	100				
2018/19	5	14	11	62	13	
	6					

Note that the CCSBT statistical areas are illustrated in the below map:



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.

During the 2018/19 fishing year, non-fish bycatch forms that contained at least one seabird capture were submitted for 16% of non-observed commercial trips[4], compared with 50% for observed commercial trips. The low percentage of forms submitted for non-observed commercial trips compared with the high percentage of forms submitted for observed commercial trips suggests a level of underreporting of seabird captures for non-observed commercial trips. Similar differences in reporting have been seen over the last four fishing years, as provided in **Table 3**.

[4] Observer trip reports can cover multiple commercial trips.

Table 3. Percentage of trips where non-fish bycatch forms with at least one seabird were filed.

Fishing year	Percentage of observed commercial trips for which non-fish bycatch forms were submitted	Percentage of non-observed commercial trips for which non-fish bycatch forms were submitted
2014/15	35%	6%
2015/16	56%	9%
2016/17	32%	3%
2017/18	37%	4%
2018/19	50%	16%

The difference in observed and non-observed reporting has been raised at Fish Plan Advisory Group meetings and Longline Workshops, and fishers were reminded that reporting seabird captures is a legal requirement and fishers are encouraged to be more diligent in this area.

Vessel adherence to protected species risk management plans

The Protected Species Liaison Officer Programme continues to work with the surface longline fishery. A key output from the programme is assisting vessels in developing protected species risk management plans specific to their operations. From late 2017/18, vessels have been audited against their protected species risk management plans when they were observed. The Programme Report contains a table summarising the information documented in the protected species risk management plans and the audit forms. This table is not reproduced in this document due to its size, however it is available here . The table indicates most adherence with the use of tori lines, night setting, and avoiding using frozen bait. There was less adherence reported with managing fish waste and used bait discharge.

Other management initiatives

Seabird Advisory Group

The review of the National Plan of Action for Seabirds 2013 commenced in April 2017, and there was significant input from the multi-stakeholder, multi-agency Seabird Advisory Group, which was established under the previous National Plan of Action for Seabirds. A revised National Plan of Action for Seabirds 2020 was published in June 2020. Members of the HMS Team and the HMS Fish Plan Advisory Group regularly attended and contributed to meetings. Members of the HMS team also contributed to the internal finalisation process.

Commission for the Conservation of Southern Bluefin Tuna (CCSBT)

The CCSBT's 'Resolution to Align CCSBT's Ecologically Related Species Measures with those of Other Tuna RFMOs' was updated to reflect changes made at other regional fisheries management organisations to their ecologically related species resolutions.

The Ecologically Related Species Working Group of the CCSBT did not meet during 2020. The Group is convened on an ad hoc basis to address specific issues identified by the Extended Commission.

Western and Central Pacific Fisheries Commission (WCPFC)

At the WCPFC Commission meeting in December 2018, the previous seabird conservation and management measure[5] was amended (CMM2018-04). Key changes were the addition of: hook shielding devices as an optional standalone seabird mitigation measure; and the requirement to use at least one form of mitigation on the high seas between 30 and 25 degrees South. The HMS Team and the International Fisheries Policy Team worked together on incorporating the changes into New Zealand's domestic legislation and high seas permit requirements. The Fisheries (Seabird Mitigation Measures—Surface Longlines) Circular 2019 came into force on 10 January 2020. At the WCPFC Commission meeting in December 2019, the Commission adopted the Safe handling and release guidelines for seabirds as a Supplement to CMM 2018-04).

[5] Conservation and management measure to mitigate the impact of fishing for highly migratory fish stocks on seabirds (Conservation and management measures 2015-03)

Antipodean Albatross Working Group

Fisheries New Zealand led and contributed to the Antipodean Albatross Working Group[6]. The latest meeting was in June 2019, when the group convened a workshop, led by Fisheries New Zealand, the Department of Conservation, and the Southern Seabirds Solutions Trust, to identify and prioritise knowledge gaps, and to discuss management actions.

Additionally, in 2019, International Fisheries Management gave a presentation highlighting ways that New Zealand could offer assistance to Forum Fisheries Agency members to increase efforts to reduce the risk of bycatch of Antipodean albatrosses. Although the presentation was warmly received, New Zealand has not been approached directly for assistance since.

Other engagement

At the HMS Longline Workshops in November 2018 and May 2019, Fisheries New Zealand presented information to fishers on seabird capture rates, compliance with seabird mitigation measures, and the update to the seabird mitigation measures. The Protected Species Liaison Officer Programme also presented an update on activities in the surface longline fleet.

During 2018/19 fishing year, Fisheries New Zealand engaged with recreational fishers through the Wellington Boat Show, the New Zealand Boat Show, the Auckland On-water Boat Show, and the Tauranga Fishing and Boat Show. At each event, Fisheries New Zealand provided copies of the Responsible Fishing Guide that details safe methods to deal with seabirds that have been caught on hooks and on line. Southern Seabirds Solutions Trust shared stand space provided by Fisheries New Zealand at all of these shows. Additionally, Fisheries New Zealand is working with the Southern Seabirds Solutions Trust and the Department of Conservation in developing a five year road-map looking at seabird interactions with recreational fishing.

The Southern Hemisphere Risk Assessment

The National Plan of Action for Seabirds 2013 is based on a risk assessment approach to identify and manage seabird interactions with commercial fisheries. As many of New Zealand's seabird species migrate widely and interact with a wide range of fisheries internationally, the Southern Hemisphere Risk Assessment has been developed to extend across the southern hemisphere. The second iteration of the risk assessment has been completed, with collaboration from Japan, South Africa, and Australia. An update was presented to the CCSBT Ecologically Related Species Working Group in May 2019. A further iteration is scheduled to occur in time to be presented to the next CCSBT Ecologically Related Species Working Group (which is yet to be scheduled).

Te Pātuitanga Ahumoana a Kiwa

Through its Te Pātuitanga Ahumoana a Kiwa (Te Pātui) team, the Ministry for Primary Industries engages with Pacific Island Countries and territories providing capacity building assistance to fisheries administrations. This support includes developing national governance approaches including fisheries management system development and implementation.

[6] The Antipodean Albatross Working Group was set up in 2017 to address concerns that, based on recent research, the antipodean albatross will be functionally extinct within 20 years. The objective of the group was to investigate the declining population and determine what actions are needed to remedy it. Members of the group include HMS team members, the Department of Conservation, the Ministry of Foreign Affairs and Trade, industry representatives, environmental non-governmental organisations (eNGOs), and National Institute of Water and Atmospheric Research.

KFA 2: CONTRIBUTE TO INTERNATIONAL PROCESSES THROUGH REGIONAL FISHERIES MANAGEMENT ORGANISATIONS

New Zealand is a member of the CCSBT and the WCPFC. As a member of these regional fisheries management organisations, the HMS Team and the International Fisheries Policy team have a number of commitments, including preparing for annual meetings, ensuring obligations are upheld, and proposing changes.

Over the course of the 2018/19 financial year, officials from the HMS team, International Fisheries Policy team, Fisheries Compliance team, and Fisheries Science team attended several meetings for these regional fisheries management organisations.

Prior to these meetings, consultations took place to inform domestic stakeholders on international management issues and to allow for input into New Zealand's negotiation positions.

The Commission for the Conservation of Southern Bluefin Tuna

Fisheries New Zealand administers the CCSBT Catch Documentation Scheme and authorised vessel list, prepares and submits fisheries data, and prepares for and attends annual meetings.

Last year, officials attended the following CCSBT meetings:

- Twenty Third Meeting of the Scientific Committee, 2-7 September, 2019
- Thirteenth Meeting of the Compliance Committee, 10-12 October, 2019
- Twenty Fifth Annual Meeting of the Commission, 14-17 October, 2019
- The meetings of the Ecologically Related Species Working Group, 28-31 May, 2019

The main focus of the Scientific Committee was on the development of a new management procedure, which is the mechanism that guides the setting of the global total allowable catch. The Scientific Committee agreed on one management procedure to recommend to the Commission. There were no exceptional circumstances that required the 2020 total allowable catch to be revised.

For the Compliance Committee meeting, New Zealand objectives included seeking endorsement for our proposed changes to improve information sharing on potential illegal, unreported, and unregulated fishing of southern bluefin tuna. New Zealand also sought amendments to annual review report templates in order to refine and clarify reporting requirements.

Key recommendations from the Compliance Committee included to adopt proposed changes to improve information sharing on potentially illegal, unreported, and unregulated fishing of southern bluefin tuna, and to adopt changes proposed to the annual review report templates.

For the Commission meeting, New Zealand objectives included seeking progress on resolving the potential underreporting in the Australia southern bluefin tuna farming operations, and the review of the Japanese market to confirm southern bluefin tuna catches.

Outcomes of the Commission meeting included the adoption of a new management procedure (as recommended by the Scientific Committee) and agreement to trial an electronic catch documentation scheme (currently a paper-based system) used to record information on each fish.

There was little progress on resolving the potential underreporting in the Australian southern bluefin tuna farming operations, and confirming of catches on the Japanese markets. However, Australia committed to provide a plan for stereo video implementation and Japan will present a proposal for a market survey at the next CCSBT meeting.

The Western and Central Pacific Fisheries Commission

WCPFC meetings that were attended by New Zealand officials during the 2018/19 fishing year were:

- 5 Dec 2019 to 11 Dec 2019 - 16th Regular Session of the Commission
- 25 Sep 2019 to 1 Oct 2019, 15th Regular Session of the Technical and Compliance Committee,
- 12 Aug 2019 to 20 Aug 2019, 15th Regular Session of the Scientific Committee
- A number of Pacific Islands Forum Fisheries Agency meetings throughout the year.

WCPFC16 adopted New Zealand's proposal for voluntary guidelines for the handling and safe release of seabirds caught by longline fishing. The guidelines are based on the Agreement on the Conservation of Albatrosses and Petrels' best practice to ensure that seabirds captured alive are released in as good a condition as possible.

WCPFC16 agreed on an objective for Electronic Monitoring, based on the objectives already established for the Regional Observer Programme. This includes the collection of scientific data and monitoring of compliance with WCPFC measures.

WCPFC16 agreed on a consolidation of the existing individual five shark Conservation and Management Measures (CMM). This included revised alternative measures to fins naturally attached, ensuring that individual shark carcasses and their corresponding fins can be easily identified (by being placed in the same bag; being bound together with rope/wire or being tagged).

A Forum Fisheries Agency (FFA) -led CMM on mobulid rays was adopted – which prohibits targeted fishing for mobulid rays and promotes safe handling and release of mobulid rays accidentally caught.

WCPFC16 agreed to re-invigorate the south Pacific albacore working group, to be chaired by Fiji. FFA have proposed that this working group focus on (i) agreeing an overall total catch/effort limit and pathway to achieve the Target Reference Point (TRP); (ii) agreeing on the split of this total catch/effort limit between high seas and exclusive economic zones; and (iii) development of a new Conservation Management Measure (CMM).

The South Pacific striped marlin stock is overfished and undergoing overfishing. The Scientific Committee will consider a Limit Reference Point for this stock in 2020.

While there is a commitment to the development of harvest strategies, a number of members (both Forum Fishery Agency members and distant water fishing nations) expressed concern about the complexity of the process and the need for more time, and capacity building, to enable members to get up to speed on harvest strategies. As a result there was no agreement on the value of holding a Science-Management Dialogue.

The Commission was unable to agree on a Target Reference Point (TRP) for skipjack tuna – a core component of a harvest strategy. New Zealand and FFA members supported a TRP of 42% of the estimated recent average spawning biomass in the absence of fishing, consistent with both the level of fishing effort for skipjack in 2012 and the condition of the skipjack stock in 2012. Some distant water fishing nations called for further scientific consideration of the interaction between skipjack and other tuna species; an analysis of the impact of new technology ("effort creep"); and questioned the use of the 2012 baseline. The Scientific Committee will provide further advice in 2020.

By 2020, the Commission is scheduled to agree on an overall limit for high seas purse seine fishing and a framework for allocations. WCPFC16 was unable to agree on terms of reference for a two-day workshop to develop limits and allocations. Instead, a compromise was made to add an extra two days to the 2020 Commission to enable this discussion.

New Zealand supported the FFA proposal to change the way the Commission deals with Flag State Investigations into alleged violations of compliance by vessels, which would enable the Commission to focus on systemic issues of compliance at the member state level. WCPFC will continue work to enhance the operation of the Compliance Monitoring Scheme, particularly to ensure that members are concentrating on the compliance issues of highest risk to the objectives of the WCPFC Convention.

KFA 3: STRENGTHEN MANAGEMENT OF NON-COMMERCIAL HMS FISHERIES

Customary Fishing

Customary fisheries are the fishing rights of tangata whenua, which are guaranteed through the Te Tiriti o Waitangi – the Treaty of Waitangi. These rights are provided for under the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 and the 1992 Deed of Settlement. Under the Deed of Settlement, the Crown has specific obligations to Māori to provide for customary fisheries management practices and traditional gathering of fish.

When consulting on fisheries issues, the Fisheries Act 1996 requires the Crown to provide for the input and participation of tangata whenua who have a non-commercial interest in the stock concerned; or an interest in the effects of fishing on the aquatic environment in the area concerned, while having particular regards to kaitiakitanga. The recently approved National Fisheries Plan for HMS outlines an objective to 'ensure Māori interests (including customary, commercial, recreational, and environmental) are enhanced'. Therefore, providing for input and participation of tangata whenua in fisheries management decision making and enhancing and strengthening customary interest is an important component of the work of the HMS team.

In the context of the rpaid development of a recreational fishery for southern Bluefin tuna in their area the team were welcomed by the Te Whanau Apanui iwi at Te Maru o Hinemahako Marae, just west of Waihau Bay. An overview of the southern bluefin tuna fishery. The hui went well, and the team was able to provide the iwi with background information about the fishery, including the international context, was provided while the HMS team was able to learn about what the fishery means to iwi and their concerns going forward. There was also discussion around having iwi participate in the next southern bluefin tuna recreational survey.

A member of the HMS team attended workshops on lifting Manatū Ahu Matua's capability to engage with the Treaty partner, including setting up a separate forum for rangatahi Māori at the Ministry for Primary Industries to provide input.

The HMS team contributed in two articles in the Hi Ika – Kōanga customary fisheries magazine. One article being "Woman from Te Tai Tokerau represents NZ in Pacific forum" and the second, "Evidence of diversity or Whanaungatanga in action?". A member of the HMS team also provides support as an editor for this magazine.

Throughout the year, the HMS team meet with representatives from Te Ohu Kaimoana to build a positive working relationship and to discuss various matters in HMS fisheries.

There was no recorded take of HMS through customary permits in 2019. The potential use of customary permits for southern bluefin tuna in the future is provided for by increasing the customary allowance in recent years, following engagement at iwi forums.

A member of the HMS team was selected to attend and present at the GirlBoss Connect regional summit. The purpose of the summit was to encourage female high school students, particularly Māori and Pasifika, to peruse careers in science, technology, engineering and mathematics. However, due to COVID-19, this was postponed.

A member of the HMS team was selected to attend the Maori Fisheries Conference. However, this was cancelled due to COVID-19.

Recreational Fishing

Monitoring

Fisheries New Zealand continued to support the monitoring of recreational fisheries for HMS through amateur charter vessel reporting for southern and Pacific bluefin tuna and voluntary reporting, including through the long-standing gamefish tagging programme and through targeted diary and logbook schemes. Further information can be found in the "MONITORING OF NON-COMMERCIAL FISHERIES" section.

Southern Bluefin Tuna Recreational Fishery Working Group

Fisheries New Zealand funded a survey of recreational southern bluefin tuna in 2019. The total landed catch estimated from the 2019 survey was 192 southern bluefin tuna. These fish we all caught in June and July. A further 34 southern bluefin tuna were recorded by other sport fishing clubs. In addition, logbook data from charter boats recorded 42 southern bluefin tuna and based on anecdotal information of the South Island fishery the landed catch by private fishers was estimated to be 67 southern bluefin tuna. An allowance of 15% to 30% was made for unaccounted catch. The recreational harvest estimate for southern bluefin tuna in 2018–19 October fishing year is 25.9 tonnes and the estimated range is 24.4 tonnes to 27.9 tonnes.

Fisheries New Zealand hosted a Southern Bluefin Tuna Recreational Fishery Working Group meeting at the Tauranga Sports Fishing Club. The Group was initiated in 2018, in order to monitor the recreational fishery in response to a significant surge in catch in 2017 on the east coast of the North Island. The Group includes tangata whenua, commercial, and recreational sector representatives.

In 2019, the Minister of Fisheries implemented a recreational bag limit of one southern bluefin tuna per person per day for the recreational fishery by way of Gazette notice under Section 11 of the Fisheries Act 1996. Feedback from Compliance officers indicate that this new rule has been complied with by recreational fishers throughout the season.

Preliminary results from the recent recreational catch survey were presented to the group. Reporting options to improve certainty around the estimate of recreational catch were discussed. There were mixed views from the group with some recreational representatives fearful of precedent setting beyond the southern bluefin tuna fishery. However, overall, there was willingness to further discuss options that would allow better information collection from recreational sector.

Recreational and purse seine sectors meetings

The HMS team facilitated a third meeting with commercial and recreational stakeholders, with the objective of fostering positive working relationships to manage on-water interactions between the two sectors and to report back on the summer season. Both groups agreed that working together over the summer season resulted in fewer negative interactions. The two sectors are now building on their shared interest to find common goals for the wider regional management of shared HMS fish stocks.

Business As Usual (BAU) tasks

BAU 1: MANAGE INTERACTIONS OF HMS FISHERIES WITH SHARKS

New Zealand's *National Plan of Action for the conservation and management of sharks 2013* (National Plan of Action for Sharks)[7] sets out goals and objectives for the conservation and management of sharks. The long-term objective of the plan 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.

Fisheries New Zealand is focused on understanding and managing the interaction of HMS fisheries with sharks. All shark related actions are aligned with the goals of National Plan of Action for 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

Monitoring HMS sharks capture

Commercial catch of HMS sharks

Information on commercial catch of blue sharks, mako sharks, and porbeagle sharks is provided in **Figure 14**, **Figure 15**, and **Figure 17**.

Non - commercial catch of HMS sharks

An estimate of the current customary catch of porbeagle shark is not available. The Maori customary catch is probably negligible because porbeagle sharks usually occur over the outer continental shelf or beyond.

Historically there was a recreational target fishery for mako shark and they were highly prized as a sport fish. Most mako sharks are now taken as a bycatch while targeting other species. Reported catch has declined since the mid-1990s with many recreational fishers choosing to tag and release.

National Plan of Action for Sharks

Following an initial meeting of a stakeholder group convened to participate in a review of the NPOA-sharks further work was deferred pending completion of the NPOA-seabirds. This delay was to manage the workload of Fisheries New Zealand, Department of Conservation, stakeholders and tangata whenua who were engaged in both processes. In light of the current resource constraints of Covid-19, a time to initiate the review of the NPOA-sharks has yet to be determined but this will be considered as part of the work planning for 2020/21.

[7]Available here: https://fs.fish.govt.nz/Page.aspx?pk=165

International Actions

HMS sharks spend only part of their lives in New Zealand waters and may migrate over considerable distances. New Zealand cooperates with other countries to manage these species via regional fisheries management organisations (including WCPFC and CCSBT), treaties (including the Convention on the Conservation of Migratory Species of Wild Animals), and international agreements (including the Convention on International Trade in Endangered Species of Wild Fauna and Flora).

WCPFC

As noted earlier in this report, WCPFC16 agreed on a consolidation of the existing individual five shark Conservation and Management Measures (CCM 2019-04).).

A Forum Fisheries Agency (FFA) -led CMM on mobulid rays (CMM 2019-05) was adopted – which prohibits targeted fishing for mobulid rays and promotes safe handling and release of mobulid rays accidentally caught.

The Convention on the Conservation of Migratory Species of Wild Animals (CMS)

CMS is an environmental treaty that provides a global platform for sustainable use and conservation of migratory species and their habitats. New Zealand is also a signatory to the subsidiary agreement to the CMS that is focused on migratory sharks. New Zealand became a Signatory to the Memorandum of Understanding on the Conservation of Migratory Sharks in 2015.

CMS COP13 took place in Gandhinagar, India from 17 to 22 February 2020. Participants included representatives from CMS Parties, international governmental organisations, and non-governmental organisations.

The meeting agreed to list three species of shark on Appendices I and II of CMS, which will give them greater protection. New Zealand is a range state for smooth hammerhead shark, and tope shark (known as school shark in New Zealand).

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

At the most recent CITES meeting in August 2019, parties determined that two species of mako shark (short and longfin - *Isurus oxyrinchus* and *Isurus paucus*) would be regulated under Appendix II of the Convention. This means CITES documentation is now required to export mako shark products, certifying they have been legally acquired from a sustainable source.

Of the two species of mako shark, only the shortfin mako shark (*Isurus oxyrinchus*) occurs in the New Zealand exclusive economic zone and it is already managed under the Quota Management System. This practice already aligns well with a CITES Appendix II listing, which requires species to be legally acquired and sustainable.

The regulating of these species of mako shark under the Trade In Endangered Species Act will mean that CITES permits will be required for export or re-export of mako shark specimens to another country (including parts and derivatives) that were either:

- caught within New Zealand's exclusive economic zone (a CITES export permit) or
- imported legally into New Zealand from another country (a CITES re-export permit)
- Bringing mako shark into New Zealand from the high seas (an Introduction from the Sea certificate)

No CITES permits will be required for landing mako sharks caught in the New Zealand exclusive economic zone itself or for use of mako shark products domestically within New Zealand. The HMS team made relevant stakeholders aware of the new requirements.

BAU 2: ENGAGE WITH FISHERY STAKEHOLDERS

Engaging with HMS fisheries stakeholders is an important aspect of business as usual for the HMS team. Engagement with HMS fisheries stakeholders occurs in a variety of ways, through various fora. In 2018/19, the HMS Team engaged with stakeholders via the following:

- Hosted two HMS Fish Plan Advisory Group meetings, one virtual
- Hosted the Longline Workshops
- Hosted the Southern Bluefin Tuna Recreational Management Advisory group
- Hosted the Antipodean Albatross Working Group
- Facilitated a meeting between the New Zealand Sport Fish Council and purse seine representatives
- Attended Iwi fisheries forums, providing early opportunities for tangata whenua to input and participate in fisheries management.
- Held stakeholder pre-meeting consultations prior to attendance at CCSBT and WCPFC regular meetings
- Liaised with the Protected Species Liaison Programme
- Maintained communications with FINZ HMS representative
- Maintained communications with Te Ohu Kaimoana representatives
- Provided input into the Customary Fisheries Hi Ika newsletter.
- Notified stakeholders on consultation on amendments to the Fisheries (Seabird Mitigation Measures—Surface Longlines) Circular 2019
- Ensured that the National Fisheries Plan for HMS Fisheries, Annual Operational Plans, and Annual Review Reports are available on the Fisheries New Zealand website.

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 fishery characterisations and stock assessments. New Zealand also has obligations to CCSBT and WCPFC to provide observer coverage as follows:

- CCSBT: a target of 10% of catch and effort
- WCPFC: 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 the regional observer programme or, if fishing is immediately adjacent to a member's exclusive economic zone, the national observer programme.

Fisheries Management works with Observer Services to plan observer coverage. Observer coverage is planned by month and by fishery and to achieve the target coverage levels, taking into account high risk areas and times. Observer coverage is planned for the financial year to align with cost recovery processes, however this report provides observer coverage information by fishing year.

For the 2018/19 fishing year, observer coverage in the surface longline fisheries targeting bigeye tuna, pacific bluefin tuna, swordfish, and yellowfin tuna combined was 9.5% of effort. Observer coverage in the surface longline fishery targeting southern bluefin tuna was 9.4%. The following diagrams illustrate the representativeness of observer coverage compared with total fishing effort.

For the 2018/19 fishing year, observer coverage in the domestic purse seine fishery targeting skipjack tuna was 12.4% of effort (in terms of sets observed). For the 2018/19 fishing year, there was no observer coverage in the troll fishery targeting albacore.

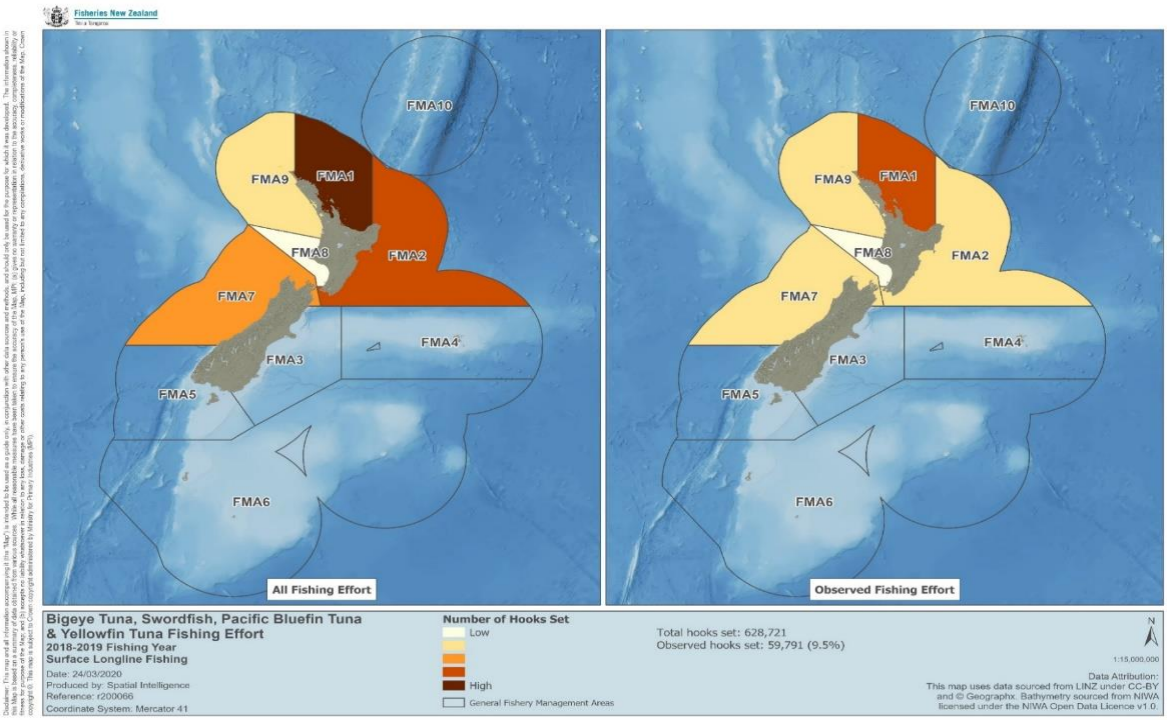


Figure 1. All fishing effort (number of hooks) and observed fishing effort (number of hooks observed) for the 2018/19 fishing year for the surface longline fisheries targeting bigeye tuna, pacific bluefin tuna, swordfish, and yellowfin tuna.

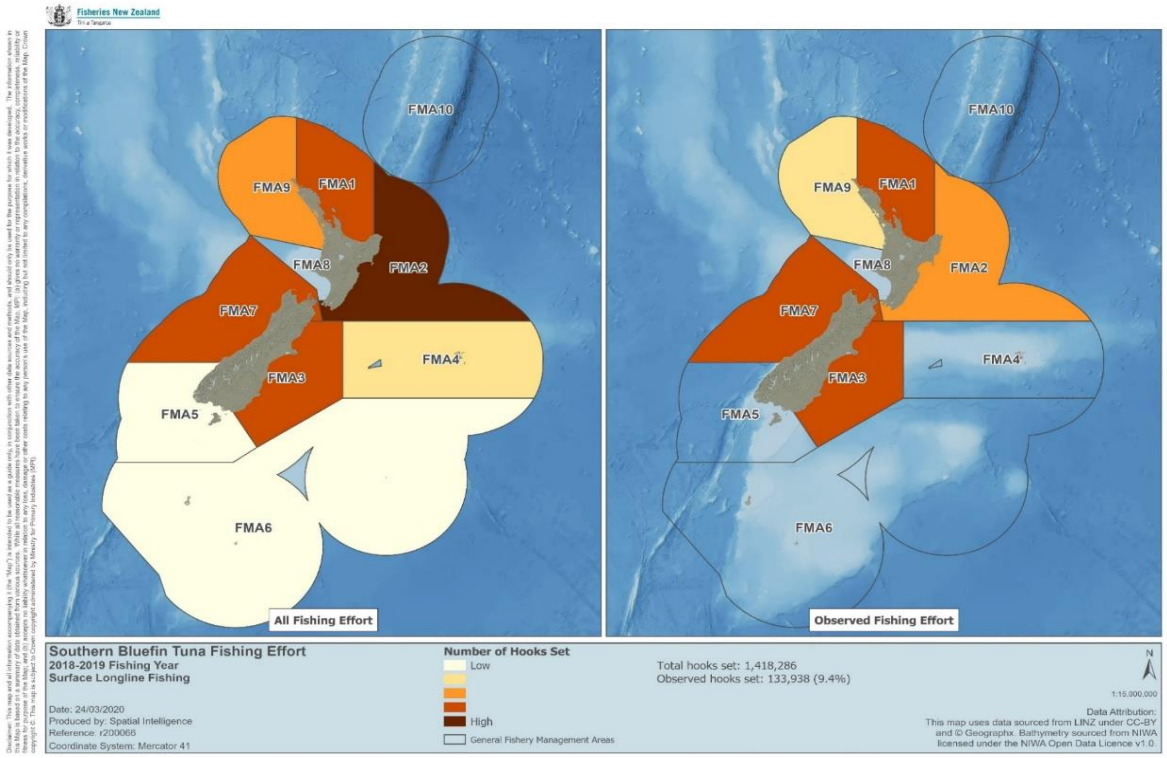


Figure 2. All fishing effort (number of hooks) and observed fishing effort (number of hooks observed) for the 2.018/19 fishing year for the surface longline fishery targeting southern bluefin tuna.

BAU 4: ENSURE HMS COMPLIANCE WITH MANAGEMENT MEASURES.

During the 2018/19 fishing year, there were 51 inspections in port of 21 surface longline vessels. There were six offenses detected. All the offenses were for alleged non-compliance with seabird mitigation measures. Two cases are still being processed, two cases resulted in warnings, and two cases resulted in prosecutions.

The seabird proxy measure on self-reporting of non-fish bycatch indicates a level of underreporting of seabird captures. As mentioned previously, this has been raised at the Fish Plan Advisory Group meetings and the Longline Workshops, where it was highlighted that reporting seabird captures is a legal requirement, and fishers were encouraged to be more diligent in this area. New strategies to address this issue are under consideration.

CCSBT Catch Documentation Scheme

The CCSBT Secretariat reports country Catch Documentation Scheme compliance statistics to the annual meeting of the CCSBT Compliance Committee. New Zealand's report for the 2018 calendar year is shown in **Table 4**.

New Zealand's level of compliance with the Catch Documentation Scheme continues to be high. As of 1 January 2018, the Catch Tagging Form has been electronic. A function of the electronic form is that if a tag number has been used previously, a duplicate input will be highlighted. This feature has drastically reduced the number of duplicate tags submitted.

Table 4. CCSBT Catch Documentation Scheme compliance statistics for the 2018 calendar year

Category	Compliance
% of CMFs for Domestic Landings that contain complete and accurate information	100%
% of CMFs for Exports that contain complete and accurate information	100%
% of CMFs for Domestic Landings where the catch/harvest weight differs from the landed weight by <=5%	100%
% of CMFs for Exports where the catch/harvest weights are the same on both exporter and importer copies	99.1%
% of CMF for Exports where SBT catch/harvest numbers are the same on both exporter and importer copies	98.2%
% of CTFs where fish numbers exactly match CMF	100%
% of CTFs where fish weights match CMF within 5%	100%
Number of duplicate tag numbers submitting in tagging data	13

Note: 'CMF' is Catch Monitoring Form; 'CTF' is Catch Tagging Form; 'SBT' is southern bluefin tuna.

BAU 5: DEVELOP AND IMPLEMENT HMS RESEARCH PLAN

Research provides important information for input into fisheries management. Planning and implementing research related to HMS fisheries is achieved jointly by the HMS team and the Fisheries Science team at Fisheries New Zealand. This is done with input from the Department of Conservation and stakeholders. A list of ongoing research projects is provided in **Table 5**.

Table 5. Continuation of ongoing projects.

Code	Title	Description
ALB2018-01	Albacore catch sampling	Results will be used in 2021 assessment update ***(ongoing, annual)***.
HMS2019-01	Data reports for NZ HMS fisheries	Annual data reports to the two relevant tuna RFMOs – CCSBT and WCPFC ***(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).***
STM2019-01	Monitoring of STM including logbook programme	Ongoing, annual implementation of STM recreational monitoring programme including the implementation of the logbook programme ***(ongoing, annual).***
STM2019-02	Full characterisation of STM fisheries	Characterisation of commercial fisheries that catch striped marlin***.***
STN2018-01	Annual catch-at-age of STN	Data used as inputs to stock assessments; the next update scheduled for 2020 ***(ongoing, annual).***
STN2019-02	Recreational catch of STN	Estimation of recreational harvest of southern bluefin tuna in New Zealand ***(annual)***.
SWO2019-01	Characterisation of the commercial SWO fishery	Characterisation of the fishery for and analysis of CPUE for swordfish in the commercial longline fishery in New Zealand waters.
TAG2019-01	Data management from gamefish tagging programme	Ongoing, annual programme that has been running for more than 40 years ***(ongoing, annual).***

BAU 6: CONTRIBUTE TO THE IMPLEMENTATION OF THE MINISTRY FOR PRIMARY INDUSTRIES' MOU ON PACIFIC CAPACITY DEVELOPMENT

The Ministry for Primary Industries' Memorandum of Understanding (MoU) Programme for Pacific capacity development is implemented under the Te Pātuitanga Ahu Moana a Kiwa (Te Pātui) Programme. Through the Te Pātui programme, New Zealand is uniquely positioned to contribute significantly to securing the long-term prosperity of Pacific Island Countries and territories (PICTs). We support PICTs through technical assistance, which develops capacity within their fisheries management and monitoring, control, and surveillance (MCS) frameworks.

In 2019/2020, as in other years, Te Pātui has worked with key resource providers in the Pacific region including, the Pacific Community (SPC) and the Pacific Islands Forum Fisheries Agency (FFA). Maintaining these strategic relationships has ensured coordinated and targeted provision of capacity building assistance to countries with which New Zealand has bilateral arrangements.

Throughout the year, Te Pātui worked in close partnership with Pacific fisheries agencies, delivering focussed activities in the Federated States of Micronesia (FSM), Fiji, Kiribati, Republic of the Marshall Islands (RMI), Solomon Islands, Tonga and Vanuatu. The Te Pātui team delivered a number of capacity building workshops to PICTs Fisheries Administrations. These workshops focussed on strengthening management systems and frameworks, data analysis and reporting, policy development and implementation, and were carried out both in-country and as attachments to Fisheries New Zealand.

In Fiji, Te Pātui has continued to assist the Fiji Ministry of Fisheries to review offshore fisheries management plans, assisting with consultations, analysis of fisheries data, discussing Fiji's development goals for the tuna fishery, as well as paths to implementation. The team provided assistance to Tonga to undertake full reviews of its management plans for both deep-water snapper and marine aquarium fisheries. This meant full and in-depth analysis of management objectives, activities and implementation successes and failures. Both of these reviews informed the improvement of respective management approaches and plans, which are now being implemented across both fisheries.

In RMI, the Te Pātui team has been working closely with the Marshall Islands Marine Resources Authority (MIMRA) to develop a plan to manage RMI tuna fisheries sustainably. The previous tuna plan had been drafted externally as a response to international compliance requirements and had limited accessibility to government, public, and industry, making it difficult to implement. Our work therefore focussed on developing the capability of MIMRA staff to develop a plan in consultation with relevant stakeholders, taking into account MIMRA's strategic objectives. This has increased MIMRA's ownership of the plan, with the implementation phase set to commence in the coming financial year. The Te Pātui team similarly worked with the Vanuatu Fisheries Department to update their plans and policy documents on Illegal, Unreported and Unregulated (IUU) fishing and related compliance measures.

Te Pātui hosted visiting contingents from the Pacific in New Zealand. In October 2019, fisheries officers from five PICTs (Cook Islands, Papua New Guinea, Kiribati, Solomon Islands, and Tonga) travelled to Auckland to strengthen their writing and communicating skills. These skills are essential in engagement with, and providing information to various stakeholders. The Pacific fisheries officers were also able to observe how we patrol our coastal fisheries officers.

In February 2020, the team hosted two fisheries management officers from Vanuatu. They learnt about the use of scientific processes to support community-led decision making. The officers were involved in a University of Otago Department of Marine Science short course in Dunedin that focussed on designing and conducting coastal ecosystem assessments in conjunction with Tangata Kaitiaki. The course, based at the Ngāi Tahu Marae, enabled fruitful knowledge sharing of kaitiaki and Pacific customary fisheries practices.

Additionally, the Ministry for Primary Industries and Fisheries New Zealand focused on ongoing work as advice provider to the Administrator of Tokelau in the establishment of their Fisheries Management Agency; assistance is continuing with the implementation of the new Agency across both fisheries management and MCS activities.

Commercial HMS fisheries information

This section of the report provides information on commercial HMS fisheries, including stock status, catch against total allowable commercial catch, and catches of non-quota species.

STOCK STATUS FOR HMS SPECIES

Table 6. Summary of stock status information for HMS fisheries.

Fishing year	Last assessment	Stock overfished	Overfishing occurring
Albacore tuna	2018	No	No
Bigeye tuna	2018	No	No
Pacific bluefin tuna	2018	Yes	Yes
Skipjack tuna	2019	No	No
Southern bluefin tuna	2017	Yes	No
Striped marlin	2019	Likely	Close to
Swordfish	2017	No	No
Yellowfin tuna	2017	No	No

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 6**.

In 2019, stock assessments for skipjack tuna and south west pacific striped marlin were updated. Parts of the information below are taken from “The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, Fifteenth Regular Session of the Scientific Committee, 2019, SUMMARY REPORT.”

Albacore tuna (assessed 2018)

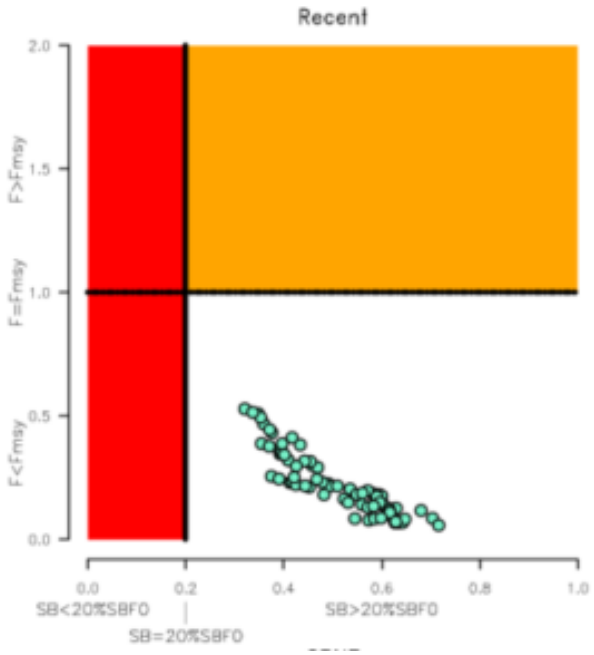


Figure 3. Estimated time-series (or "dynamic") Majuro plot from the albacore 'diagnostic case' model run.

The latest stock assessment for South Pacific albacore tuna (*Thunnus alalunga*) was conducted in 2018. The stock assessment indicates that South Pacific Albacore tuna is not overfished (100% probability) and overfishing is not occurring (100% probability).

The WCPFC Scientific Committee recommended that longline fishing mortality and longline catch be reduced to avoid further decline in the vulnerable biomass, so that economically viable catch rates can be maintained.

The Scientific Committee noted that the total provisional Pacific Ocean catch south of the equator in 2018, updated since the paper was submitted, was 80,820 mt, a 13% decrease from 2017 and a 2% decrease from the average 2013-2017. Longline catch in 2018 (77,776 mt) was a 14% decrease from 2017 and an 8% decrease from the 2013-2017 average.

The average stock status in 2016 (the last year of the assessment) across the 72 model runs was SBlatest/SBF=0 = 0.52, below the interim target reference point (SBlatest/SBF=0 = 0.56) established by the WCPFC in 2018. The probability of being below the TRP in 2016 is 63%. The stock is not overfished nor is overfishing occurring.

The stock biomass is expected to decline from the 2016 level of 0.52 to 0.39 by 2035. The risk of the stock biomass breaching the limit reference point in 2035 is expected to be 23%. The longline-vulnerable biomass (the longline catch per unit effort proxy) is expected to decrease by 36% relative to 2013 levels.

The Scientific Committee notes that the 2018 South Pacific albacore stock assessment pertained to the WCPFC Convention Area. The South Pacific albacore catch in the eastern Pacific Ocean has recently increased and the scheduled 2021 South Pacific albacore assessment may pertain to the entire south Pacific stock in order to incorporate all population dynamics. WCPFC and the Inter American Tropical Tuna Commission (IATTC) compatible measures would be more easily implemented should an entire south Pacific assessment be conducted.

Bigeye tuna (assessed 2017)

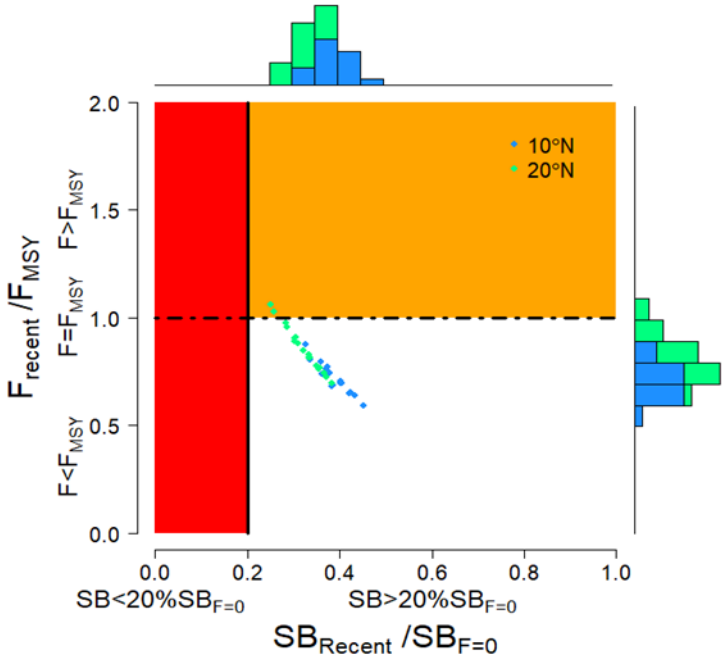


Figure 4. Estimated time-series (or "dynamic") Majuro plot from the bigeye 'diagnostic case' model run.

The latest stock assessment for bigeye tuna (*Thunnus obesus*) was conducted in 2018. The stock assessment indicates that bigeye tuna is not experiencing overfishing (94% probability) and it appears it is not in an overfished condition (0% probability).

The Scientific Committee noted that levels of fishing mortality and depletion differ among regions, and the fishery impact was higher in the tropical region (Regions 3, 4, 7 and 8 in the stock assessment model), with particularly high fishing mortality on juvenile bigeye tuna in these regions. Therefore it is recommended that Commission could continue to consider measures to reduce fishing mortality from fisheries that take juveniles, with the goal to increase bigeye fishery yields and reduce any further impacts on the spawning biomass for this stock in the tropical regions.

The Scientific Committee noted that the total bigeye catch in 2018 was 145,402 mt, a 13% increase from 2017 and a 1% decrease from the average 2013-2017. Longline catch in 2018 (71,305 mt) was a 23% increase from 2017 and a 7% increase from the 2013-2017 average. Purse seine catch in 2018 (64,119 mt) was a 10% increase from 2017 and a 4% increase from the 2013-2017 average. Pole and line catch (1,677 mt) was a 3% increase from 2017 and a 60% decrease from the average 2013-2017 catch. Catch by other gear (8,301 mt) was a 25% decrease from 2017 and 45% decrease from the average catch in 2013-2017.

The Scientific Committee noted that under recent fishery conditions, the bigeye stock is initially projected to increase as recent estimated recruitments support adult stock biomass. Adult stock biomass is then projected to decline slightly before again increasing. Projected fishing mortality is below FMSY (median F2020/FMSY = 0.62, the risk of F2020 > FMSY = 0%) and projected median spawning biomass is above the LRP (SB2020/SBF=0 = 0.2) (median SB2020/SBF=0 = 0.41; median SB2020/SBMSY = 1.79. Risk that SB2020 < LRP = 0%). Projections are from the updated model runs of Vincent et al. (2018).

Yellowfin tuna (Assessed 2017)

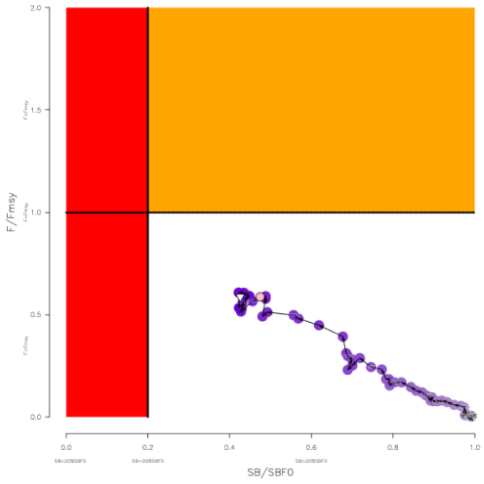


Figure 5. Estimated time-series (or "dynamic") Majuro plot from the yellowfin 'diagnostic case' model run.

The latest stock assessment for yellowfin tuna (*Thunnus albacares*) was conducted in 2017. The stock assessment indicates that the yellowfin tuna stock is not experiencing overfishing (96% probability) and it appears that the stock is not in an overfished condition (92% probability).

WCPFC Scientific Committee reiterated that measures should be implemented to maintain current spawning biomass levels until the Commission can agree on an appropriate target reference point.

The Scientific Committee noted that the total yellowfin catch in 2018 was 666,971 mt (the second highest catch on record), a 2% decrease from 2017 and a 9% increase from the average 2013-2017. Purse seine catch in 2018 (374,062 mt) was a 22% decrease from 2017 and a 1% increase from the 2013-2017 average. Longline catch in 2018 (94,509 mt) was an 11% increase from 2017 and a 4% increase from the 2013-2017 average. Pole and line catch (12,201 mt) was a 1% decrease from 2017 and a 48% decrease from the average 2013-2017 catch. Catch by other gear (186,199 mt) was a 79% increase from 2017 and 51% increase from the average catch in 2013-2017.

The Scientific Committee noted that under recent fishery conditions, the yellowfin stock is initially projected to increase as recent estimated recruitments support adult stock biomass. Adult stock biomass is then projected to decline slightly before again increasing. Projected fishing mortality is below FMSY (median F2020/FMSY = 0.74, the risk of F2020 > FMSY = 3%) and projected median spawning biomass is above the LRP (SB2020/SBF=0 = 0.2) (median SB2020/SBF=0 = 0.32; median SB2020/SBMSY = 1.33. Risk that SB2020 < LRP = 8%).

It was also noted that under recent fishery conditions, the yellowfin stock was initially projected to increase as recent estimated relatively high recruitments support adult stock biomass, and then decline slightly.

Skipjack tuna (assessed 2019)

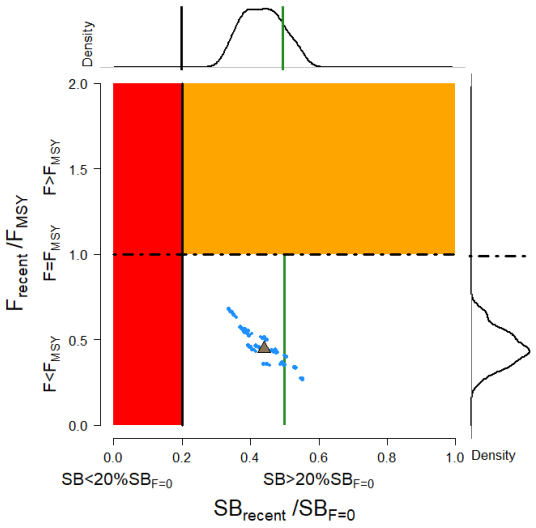


Figure 6. Majuro plot for the recent spawning potential (2015 – 2018) summarizing the results for each of the models in the structural uncertainty grid with weighting.

The latest stock assessment for skipjack tuna (*Katsuwonus pelamis*) was conducted in 2016. The stock assessment indicates that skipjack tuna stocks are not in an overfished state, nor is it experiencing overfishing.

The Scientific Committee noted that the stock was assessed to be above the adopted Limit Reference Point and fished at rates below FMSY with 100% probability. Therefore, the skipjack stock is not overfished, nor subject to overfishing. At the same time, it was also noted that fishing mortality is continuously increasing for both adult and juvenile while the spawning biomass reached the historical lowest level.

The skipjack interim Target Reference Point (TRP) is 50% of spawning biomass in the absence of fishing. The trajectory of the median spawning biomass depletion indicates a long-term trend, and has been under the interim TRP since 2009 (i.e., for 10 years). Since the median spawning biomass has been consistently below the interim TRP, SC15 recommends that the Commission take appropriate management action to ensure that the biomass depletion level fluctuates around the TRP (e.g., through the adoption of a harvest control rule).

The Scientific Committee noted that the total provisional catch in 2018 was 1,795,048 mt, a 10% increase from 2017 and a 1% decrease from 2013-2017. Purse seine catch in 2018 (1,469,520 mt) was a 15% increase from 2017 and a 2% increase from the 2013-2017 average. Pole and line catch (138,534 mt) was a 4% increase from 2017 and a 9% decrease from the average 2013-2017 catch. Catch by other gear (182,888 mt) was a 16% decrease from 2017 and 19% decrease from the average catch in 2013-2017.

The Scientific Committee noted that the median level of spawning potential depletion from the uncertainty grid was SBrecent/SBF=0 = 0.44 with a probable range of 0.37 to 0.53 (80% probability interval). There were no individual models where SBrecent/SBF=0 < 0.2, which indicated that the probability that recent spawning biomass was below the LRP was zero.

Southwest Pacific Striped marlin (Assessed 2019)

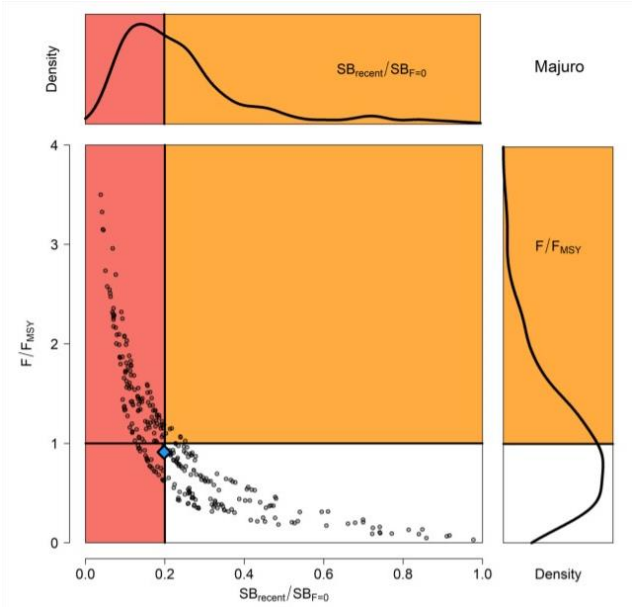


Figure 7. Majuro plot for the recent spawning biomass (2014 – 2017) summarizing the results for each of the models in the structural uncertainty grid.

The latest stock assessment for southwest Pacific striped marlin (*Kajikia audax*) was conducted in 2019. the Scientific Committee noted that there are no agreed limit reference points for the WCPO billfish. However, the Scientific Committee also noted that based on the adopted uncertainty grid, the southwest Pacific striped marlin assessment results indicate that the stock is likely overfished, and close to undergoing overfishing according to MSY based reference points.

The Scientific Committee recommends that WCPFC16 identify an appropriate limit reference point for this stock. Key management quantities can be found in Table SMLS-02. The recent spawning biomass depletion relative to the unfished condition was close to the LRP adopted for tunas (SBrecent/SBF=0 = 0.2). 114. The Scientific Committee noted that recent catches are approximately half the MSY, and that recent fishing mortality is slightly less than the fishing mortality that would result in MSY.

The Scientific Committee noted that the median of recent spawning biomass depletion relative to the unfished condition was (SBrecent/SBF=0) = 0.198, with a probable range of 0.093 to 0.464 (80% probable range), and there was a roughly 50.33% probability (151 out of 300 models) that the recent spawning biomass depletion relative to the unfished condition was below the LRP adopted for tunas (SBrecent/SBF=0 = 0.2).

The Scientific Committee noted that the median of recent spawning biomass relative to the spawning biomass at MSY was (SBrecent/SBMSY) = 0.737 with a probable range of 0.334 to 1.635 (80% probable range), and there was a roughly 68.66% probability (206 out of 300 models) that the recent spawning biomass depletion was below the spawning biomass at MSY.

The Scientific Committee noted that the median of relative recent fishing mortality was (Frecent/FMSY = 0.911) with an 80% probability interval of 0.313 to 1.891, and there was a roughly 44.3% probability (133 out of 300 models) that the recent fishing mortality was above FMSY.

South Pacific Swordfish (Assessed 2017)

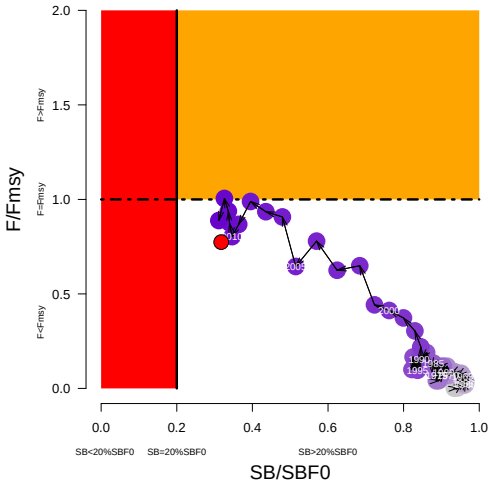


Figure 8. Estimated time-series (or "dynamic") Majuro plot from the South Pacific swordfish 'diagnostic case' model run.

The latest stock assessment for south Pacific swordfish (*Xiphias gladius*) was conducted in 2017. The stock assessment indicated that it is highly likely that south Pacific swordfish stocks are not in an overfished condition (0% probability of being overfished), and the stock is not experiencing overfishing (32% probability of overfishing).

WCPFC Scientific Committee recommends that the Commission consider developing appropriate management measures for the area north of 20°S to the equator and that current restrictions on catches south of 20°S also be maintained.

WCPFC Scientific Committee noted that there has been an increase in fishing mortality notably from the mid-1990s, and that the biomass relative to unfished levels is estimated to have declined rapidly during the period late-1990s to 2010 followed by a more gradual although continued decline after 2010, across the uncertainty grid.

Pacific bluefin (assessed 2018)

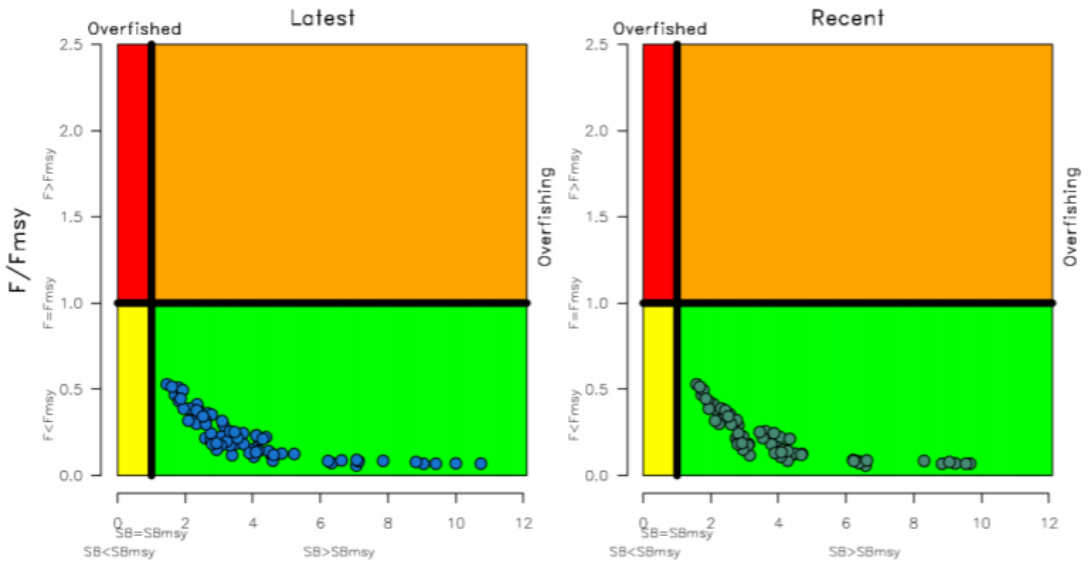


Figure 9. Kobe plots for PBF summarising the results for each of the models in the structural uncertainty grid under the SBlatest/SBF=0 and the SBrecent/SBF=0 reference points.

The last stock assessment for Pacific bluefin tuna (Thunnus orientalis) was assessed by the International Science Committee in 2018. The stock assessment indicated that the Pacific bluefin tuna stock is in an overfished state, and overfishing is occurring. The Scientific Committee noted that the Pacific bluefin tuna spawning stock biomass is depleted to 3.3% of the estimated unfished spawning stock biomass.

The Scientific Committee noted that the total Pacific bluefin tuna catch by ISC members in 2018 was 10,148 mt, a 31% decrease from 2017 and a 25% decrease from the 2013-2017 average. Pacific bluefin tuna is caught by various fishing gears including purse seine, longline, set net, troll, pole-and-line, handline and recreational fisheries.

Southern bluefin tuna (assessed 2017)

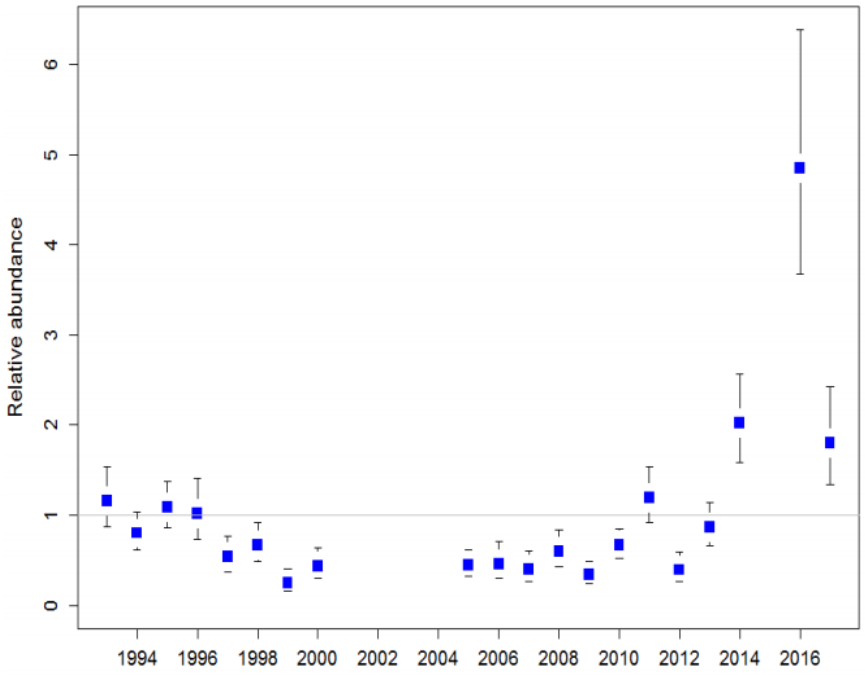


Figure 10. Time series of relative abundance estimates for juvenile southern bluefin tuna from Australian Aerial Survey conducted over the Great Australian Bight (with 90% confidence intervals).

The latest stock assessment for southern bluefin tuna (*Thunnus maccoyii*) was conducted in 2017. The stock assessment indicates that southern bluefin tuna stock remained at a low state, estimated to be 13% of the unfished biomass. There has been improvement since previous stock assessments that indicated the stock was at 5.5% of unfished biomass in 2011 and 9% in 2014. The 10+ age class was estimated to be 11% of unfished biomass, which is an increase from the estimate of 5% in 2011 and 7% in 2014. The current fishing mortality rate is below the level associated with the level to produce maximum sustainable yield.

COMMERCIAL CATCH AGAINST TOTAL ALLOWABLE COMMERCIAL CATCH

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 is from Fisheries New Zealand's Bi Hub database.

The main surface longline target species are bigeye tuna, southern bluefin tuna, and swordfish. For these three species, information on total catch, effort, and catch per unit effort has been provided. Other species caught by surface longline are blue sharks, mako sharks, porbeagle sharks, pacific bluefin tuna, and yellowfin tuna. For these species, information on total catch has been provided.

Bigeye tuna

In 2018/19, bigeye tuna total allowable commercial catch remained at 714 tonnes. Commercial catch was 55 tonnes. Over the last five fishing years, commercial catch has ranged between 55 and 173 tonnes (see **Figure 11**).

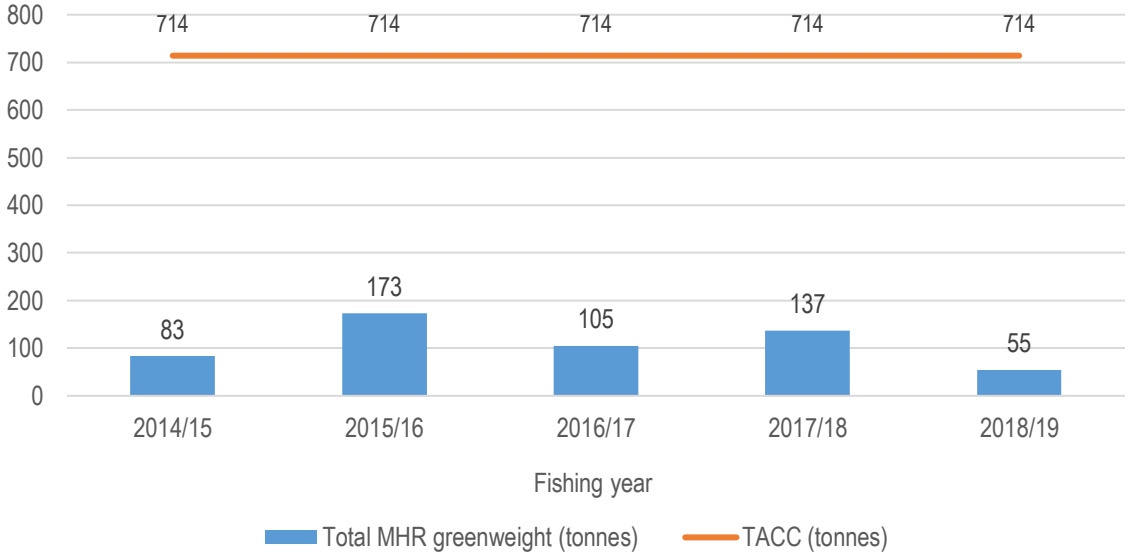


Figure 11. Bigeye tuna (BIG1) total allowable commercial catch and catch[8] for the five most recent fishing years.

Bigeye tuna is targeted and caught as bycatch in the surface longline fishery. Bigeye tuna is also caught as bycatch in the troll fishery, the bottom longline fishery, and the purse seine fishery.

The number of surface longline vessels targeting bigeye tuna in the last five fishing years has ranged between 17 and 27. The number of hooks set targeting bigeye tuna in the last five fishing years has ranged between 400,000 and 620,000 hooks (see **Figure 12**).

[8] Monthly harvest returns (MHR) is used to provide information on catch. An MHR is required to be submitted to FishServe by all fishing permit holders and other persons. A return is to be completed for each calendar month for all fish taken during that month.

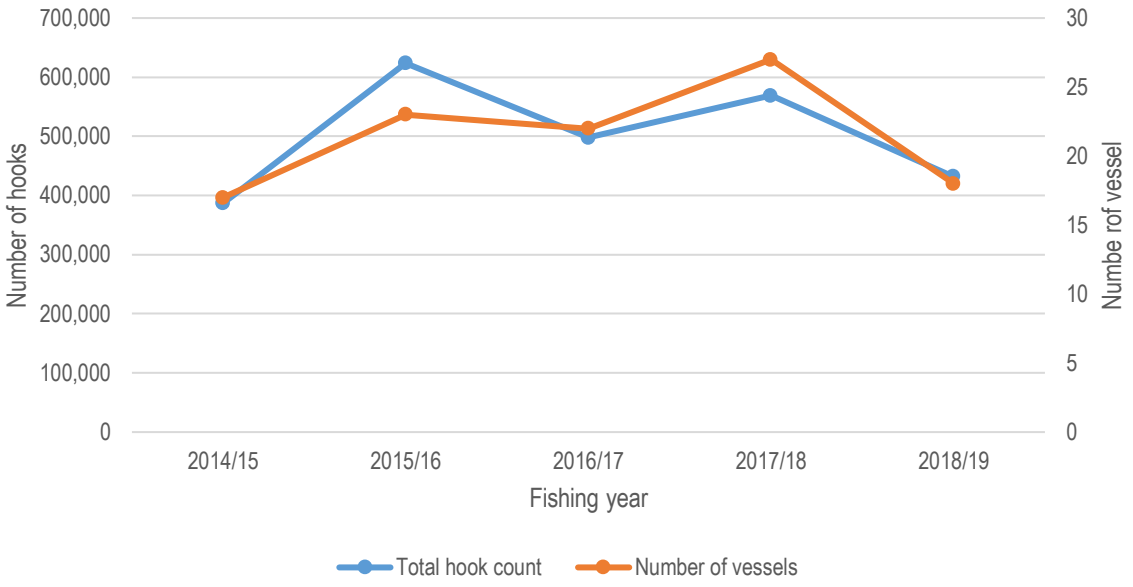


Figure 12. Number of surface longline vessels and number of hooks set targeting bigeye tuna over the last five fishing years.

For bigeye tuna, catch per unit effort over the last ten fishing years has ranged between 1.4 and 3.9 fish per 1,000 hooks (see **Figure 13**).

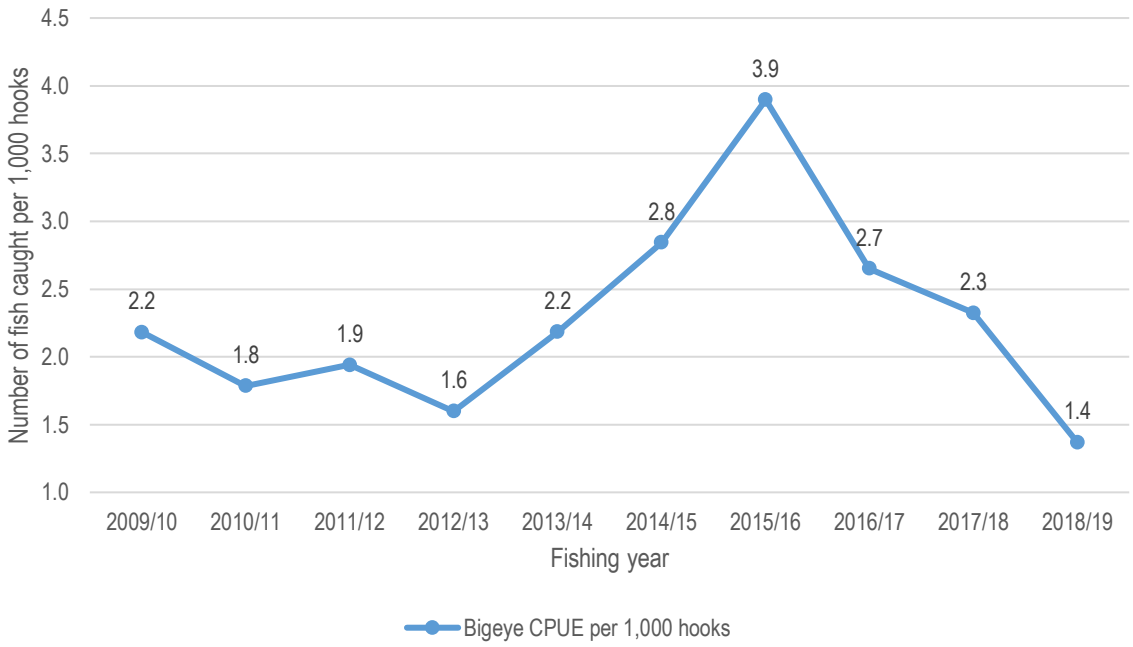


Figure 13. Catch per unit effort[9] of bigeye tuna when targeted in the surface longline fishery over the last ten fishing years.

[9] The catch per unit effort was calculated by using the estimated targeted commercial effort (in terms of number of hooks) and the estimated commercial catch from that targeted effort (in terms of number of fish caught). The catch per unit effort is not standardised. The information is aggregated over all New Zealand fisheries waters (excluding effort and catch from outside New Zealand fisheries waters), and is provided for the last ten fishing years.

Blue shark

In 2018/19, blue shark total allowable commercial catch remained at 1,860 tonnes. Commercial catch was 101 tonnes. Over the last five years, commercial catch has ranged between 101 and 163 tonnes (see **Figure 14**).

Blue sharks are caught as bycatch mainly in the surface longline fishery. Blue sharks are also caught as bycatch in a number of other fisheries, such as the bottom longline fishery, the midwater trawl fishery, and the set net fishery.

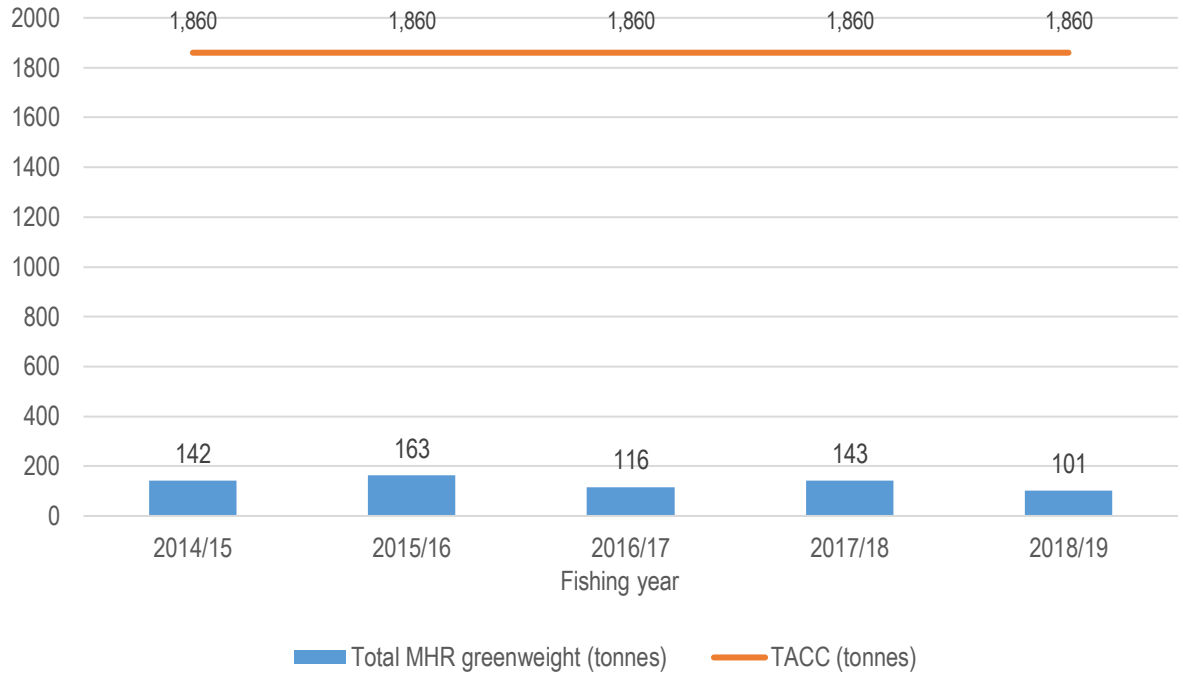


Figure 14. Blue shark (BWS1) total allowable commercial catch and catch[10] for the five most recent fishing years.

Mako shark

In 2018/19, mako shark total allowable commercial catch remained at 200 tonnes. Commercial catch was 27 tonnes. Over the last five fishing years, commercial catch has ranged between 27 and 71 tonnes (see **Figure 15**).

Mako sharks are caught as bycatch mainly in the surface longline fishery. Mako sharks are also caught as bycatch in a number of other fisheries, such as the bottom longline fishery, the set net fishery, and the midwater trawl fishery.

[10] This catch does not include those sharks that are returned under Schedule 6.

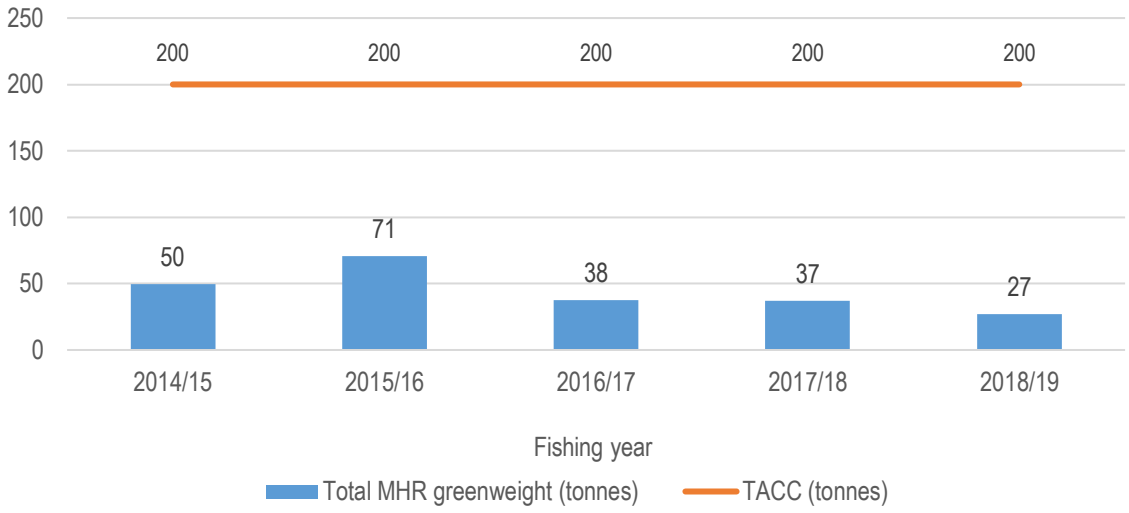


Figure 15. Mako shark (MAK1) total allowable commercial catch and catch[11] for the five most recent fishing years.

Pacific bluefin tuna

In 2018/19, Pacific bluefin tuna total allowable commercial catch remained at 116 tonnes. Commercial catch was 22 tonnes. Over the last five fishing years, commercial catch has ranged between 14 and 22 tonnes (see **Figure 16**).

Pacific bluefin tuna is occasionally targeted in the surface longline fishery, however mainly caught as bycatch. Pacific bluefin tuna is also caught as bycatch in a number of other fisheries, such as the midwater trawl fishery and the bottom trawl fishery.

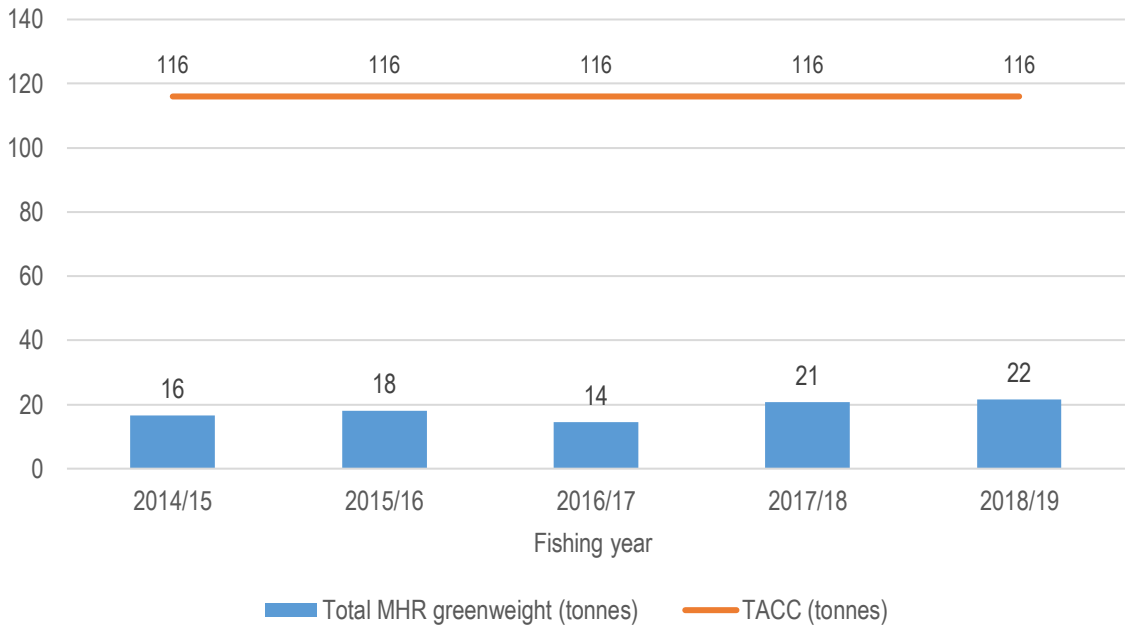


Figure 16. Pacific bluefin tuna (TOR1) total allowable commercial catch and catch for the five most recent fishing years.

[11] This catch does not include those sharks that are returned under Schedule 6.

Porbeagle shark

In 2018/19, porbeagle shark total allowable commercial catch remained at 110 tonnes. Commercial catch was 57 tonnes. Over the last five fishing years, commercial catch has ranged between 27 and 84 tonnes (see **Figure 17**).

Porbeagle sharks are caught as bycatch mainly in the surface longline fishery. Porbeagle sharks are also caught as bycatch in a number of other fisheries, such as the southern blue whiting midwater trawl fishery, the set net fishery, and the bottom longline fishery.

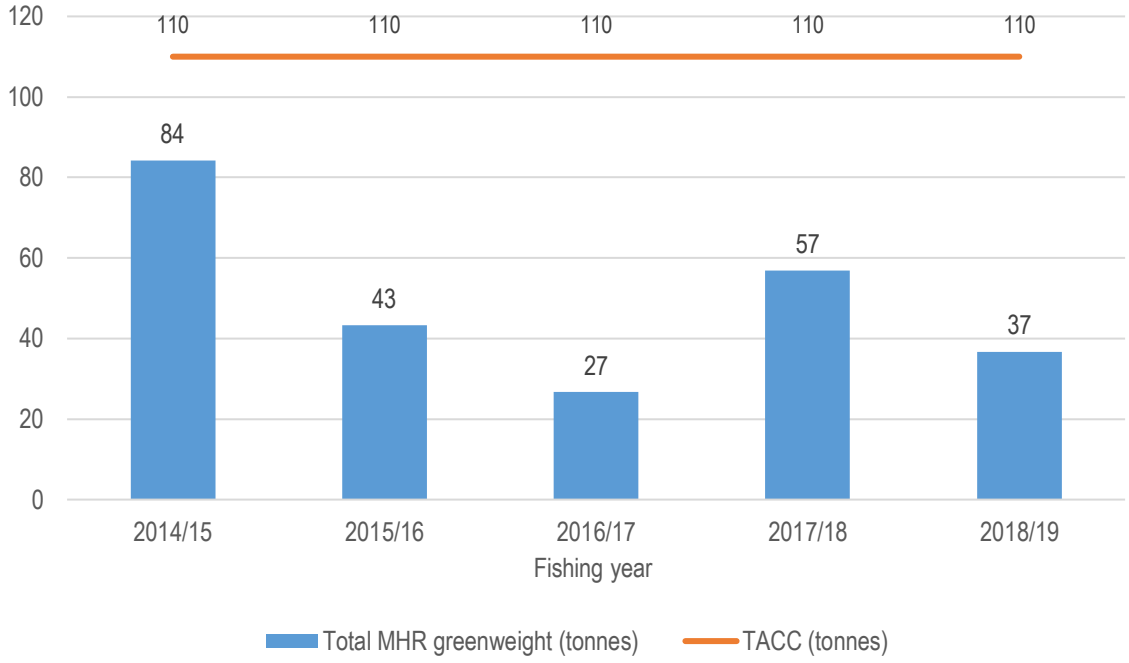


Figure 17. Porbeagle shark (POS1) total allowable commercial catch and catch[12] for the five most recent fishing years.

[12] This catch does not include those sharks that are returned under Schedule 6.

Southern bluefin tuna

In 2018/19, southern bluefin tuna total allowable catch remained at 1,047 tonnes. Commercial catch was 1,008 tonnes. Over the last five fishing years, commercial catch has ranged between 913 and 1,008 tonnes (see **Figure 18**).

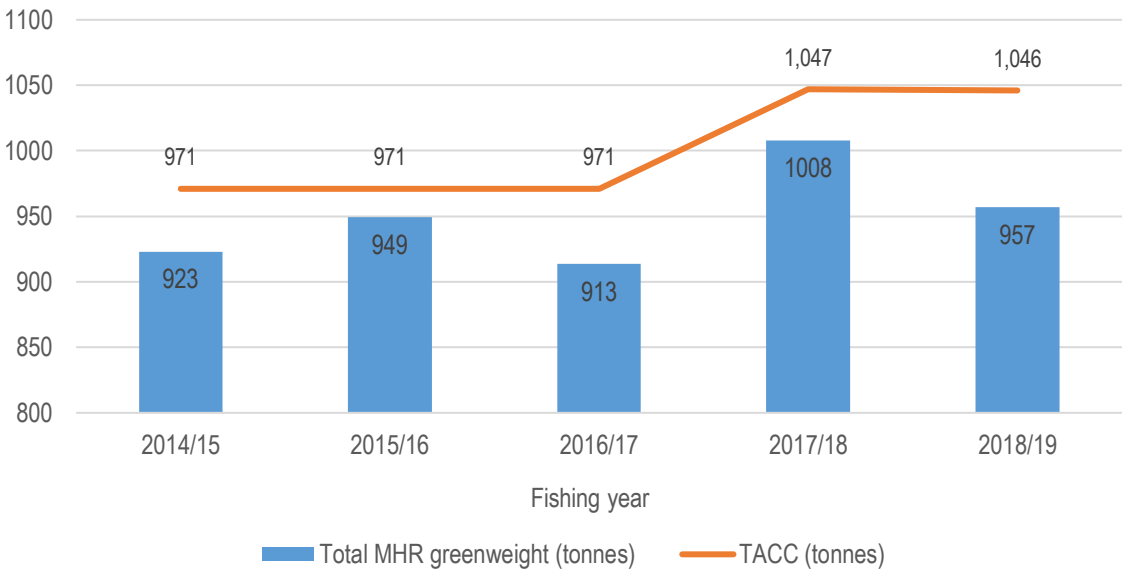


Figure 18. Southern bluefin tuna (STN1) total allowable commercial catch and catch for the five most recent fishing years.

Southern bluefin tuna is targeted and caught as bycatch mainly in the surface longline fishery. Southern bluefin tuna is also caught as bycatch in a number of other fisheries, such as the midwater trawl fishery, the set net fishery, and the troll fishery.

The number of surface longline vessels targeting southern bluefin tuna in the last five fishing years has ranged between 27 and 32. The number of hooks set targeting southern bluefin tuna in the last five fishing years has ranged between 1,200,000 and 1,600,000 hooks (see **Figure 19**).

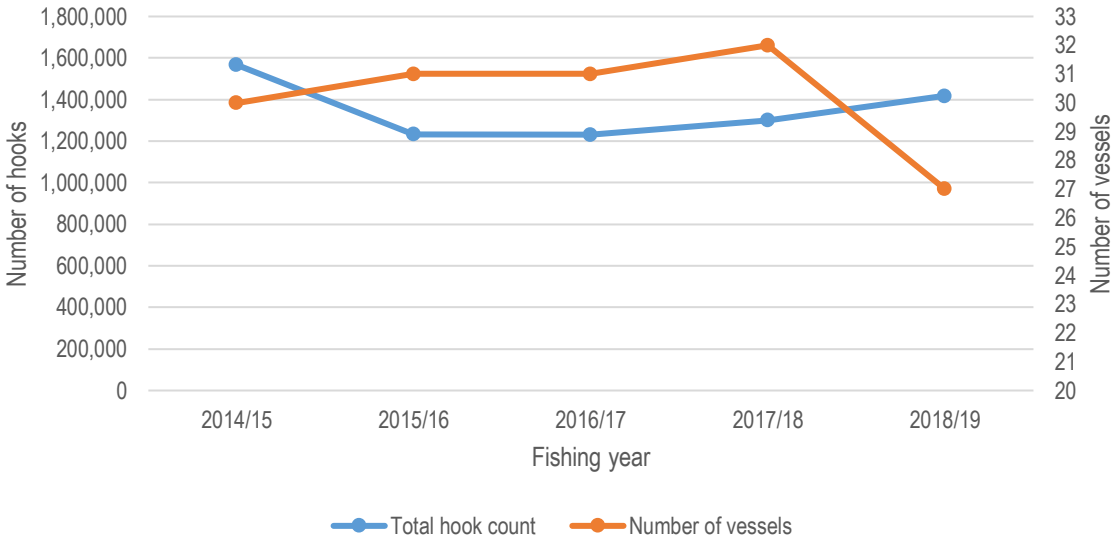


Figure 19. Number of surface longline vessels and number of hooks set targeting southern bluefin tuna over the last five fishing years.

Southern bluefin tuna is mainly caught between May and September, with smaller amounts being caught between October and February. Usually, catch peaks in July, however during 2018/19, catch peaked in June (see **Figure 20**).

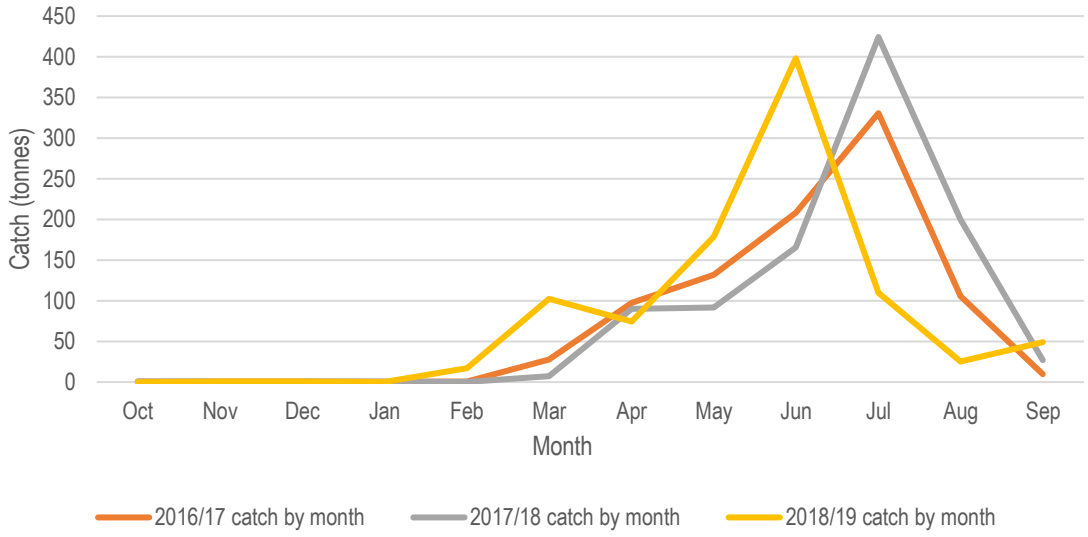


Figure 20. Southern bluefin tuna catch by month over the last three fishing years.

For southern bluefin tuna, catch per unit effort over the last ten fishing years has ranged between 5.4 and 16.7 fish per 1,000 hooks (see **Figure 21**).

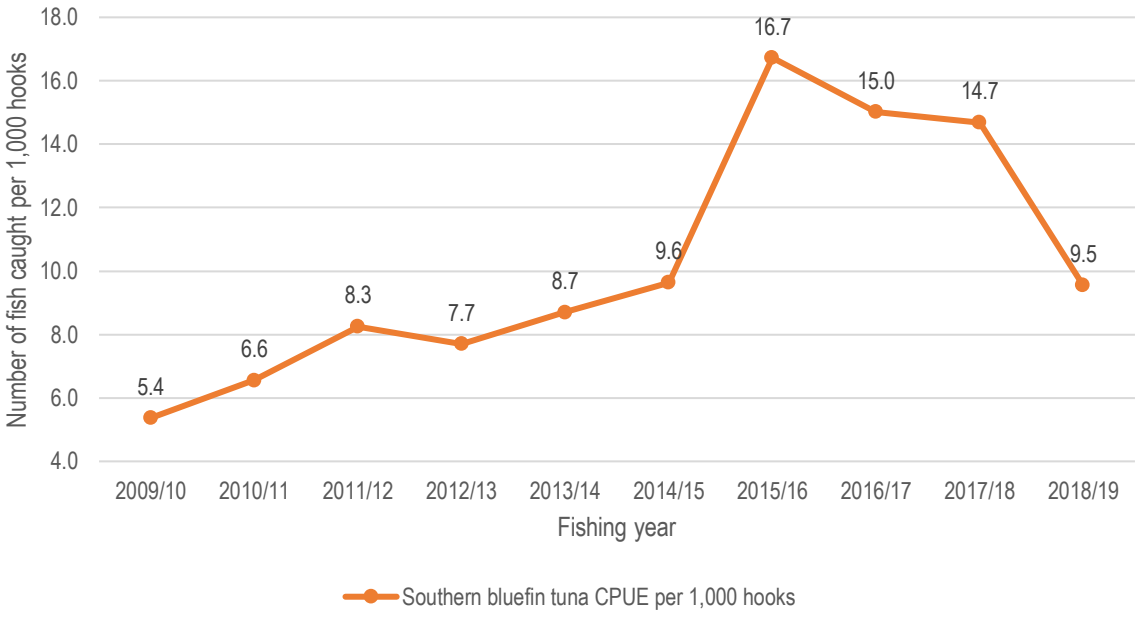


Figure 21. Catch per unit effort[13] of southern bluefin tuna when targeted in the surface longline fishery over the last ten fishing years.

[13] The catch per unit effort was calculated by using the estimated targeted commercial effort (in terms of number of hooks) and the estimated commercial catch from that targeted effort (in terms of number of fish caught). The catch per unit effort is not standardised. The information is aggregated over all New Zealand fisheries waters (excluding effort and catch from outside New Zealand fisheries waters), and is provided for the last ten fishing years.

Swordfish

In 2018/19, swordfish total allowable commercial catch remained at 885 tonnes. Commercial catch was 262 tonnes. Over the last five fishing years, commercial catch has ranged between 262 and 759 tonnes (see **Figure 22**).

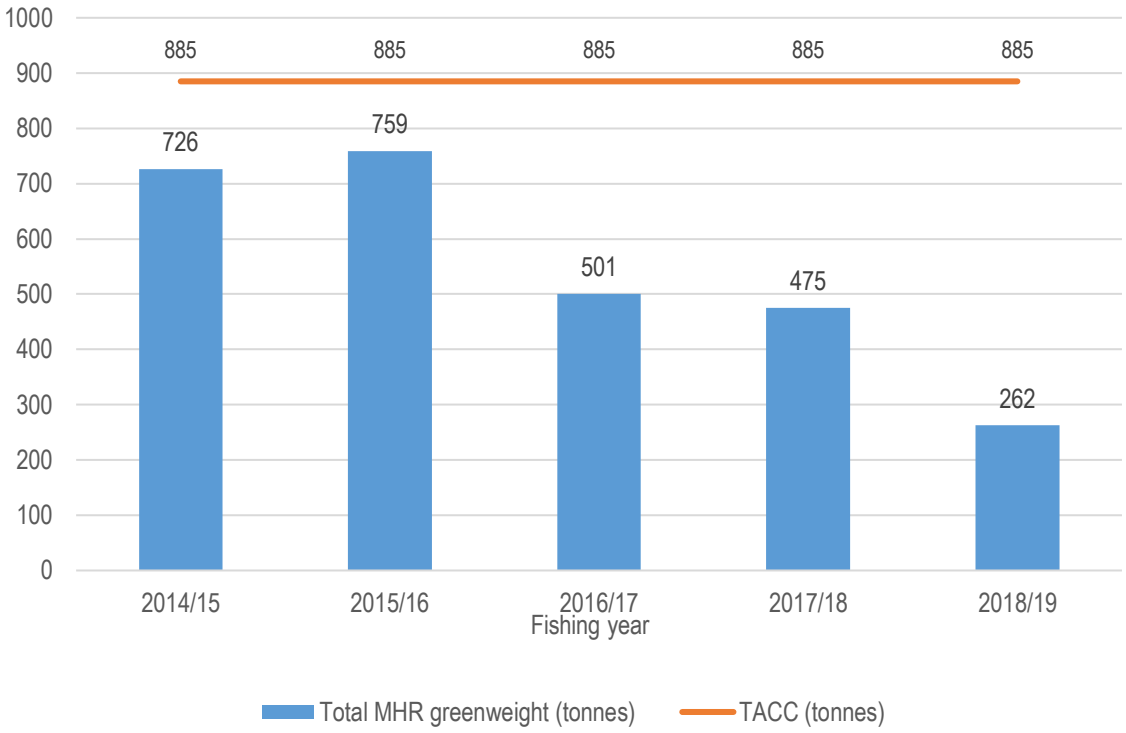


Figure 22. Swordfish total allowable commercial catch total allowable commercial catch and catch for the five most recent fishing years.

Swordfish is mainly targeted and caught as bycatch in the surface longline fishery. Swordfish is also caught as bycatch in a number of other fisheries, such as the bottom longline fishery and the midwater trawl fishery.

The number of surface longline vessels targeting swordfish in the last five fishing years has ranged between 18 and 22. The number of hooks set targeting southern bluefin tuna in the last five fishing years has ranged between 150,000 and 450,000 (see **Figure 22**).

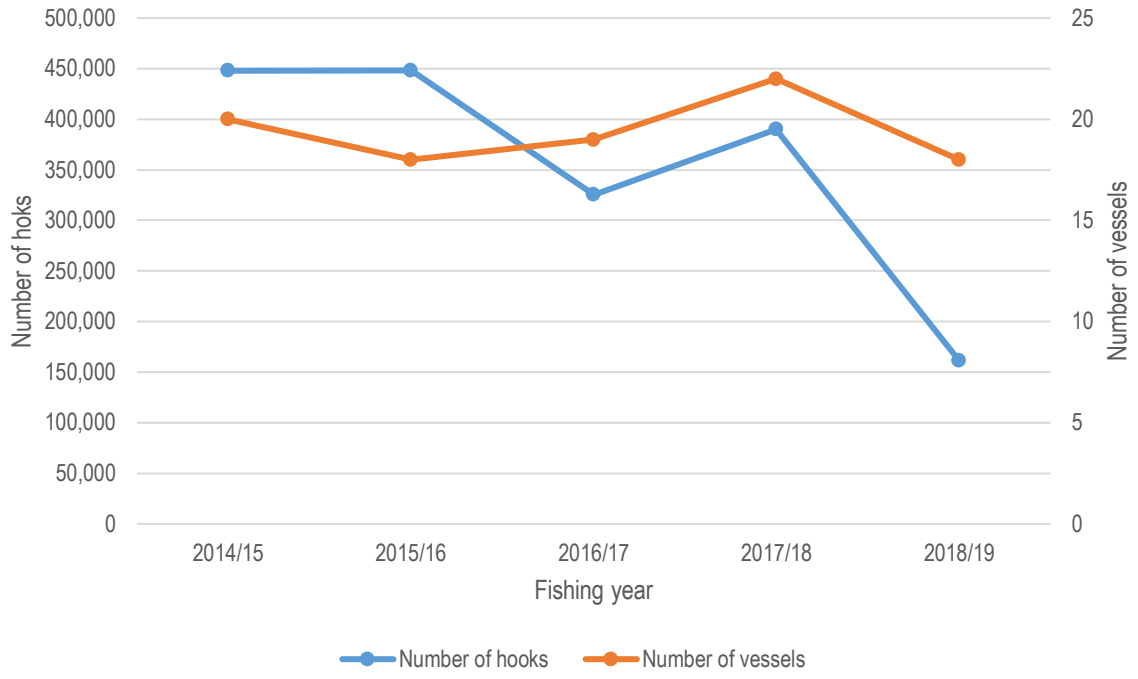


Figure 23. Number of surface longline vessels and number of hooks set targeting swordfish over the last five fishing years.

For swordfish, catch per unit effort over the last ten fishing years has ranged between 4.7 and 15 fish per 1,000 hooks (see **Figure 24**).

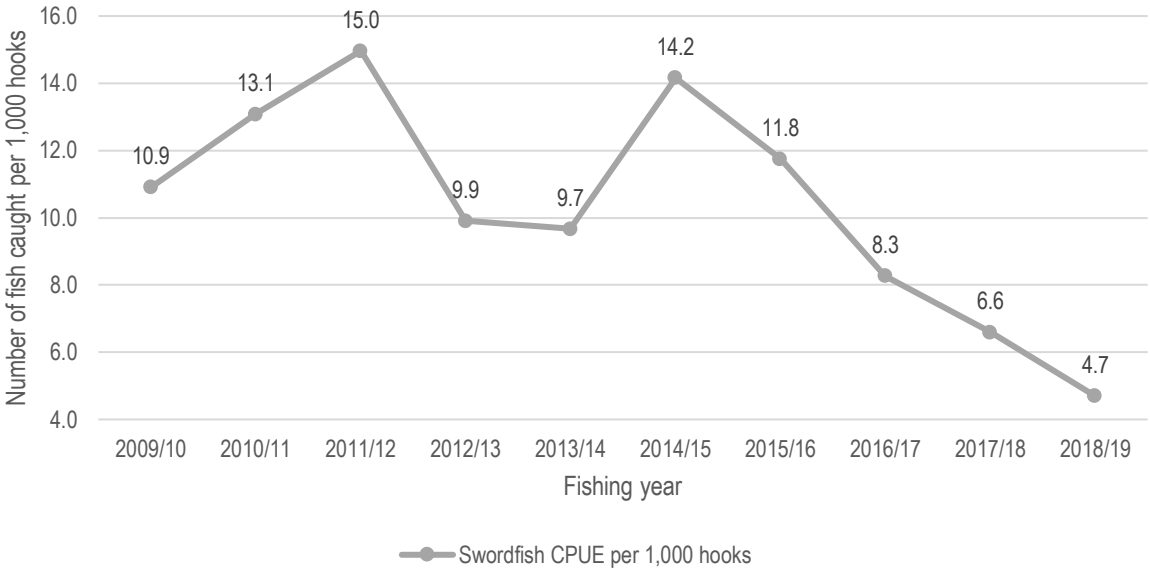


Figure 24. Catch per unit effort[14] of swordfish when targeted in the surface longline fishery over the last ten fishing years.

[14] The catch per unit effort was calculated by using the estimated targeted commercial effort (in terms of number of hooks) and the estimated commercial catch from that targeted effort (in terms of number of fish caught). The catch per unit effort is not standardised. The information is aggregated over all New Zealand fisheries waters (excluding effort and catch from outside New Zealand fisheries waters), and is provided for the last ten fishing years.

Yellowfin tuna

In 2018/19, yellowfin tuna total allowable commercial catch remained at 263 tonnes. Commercial catch was 5 tonnes (see **Figure 25**).

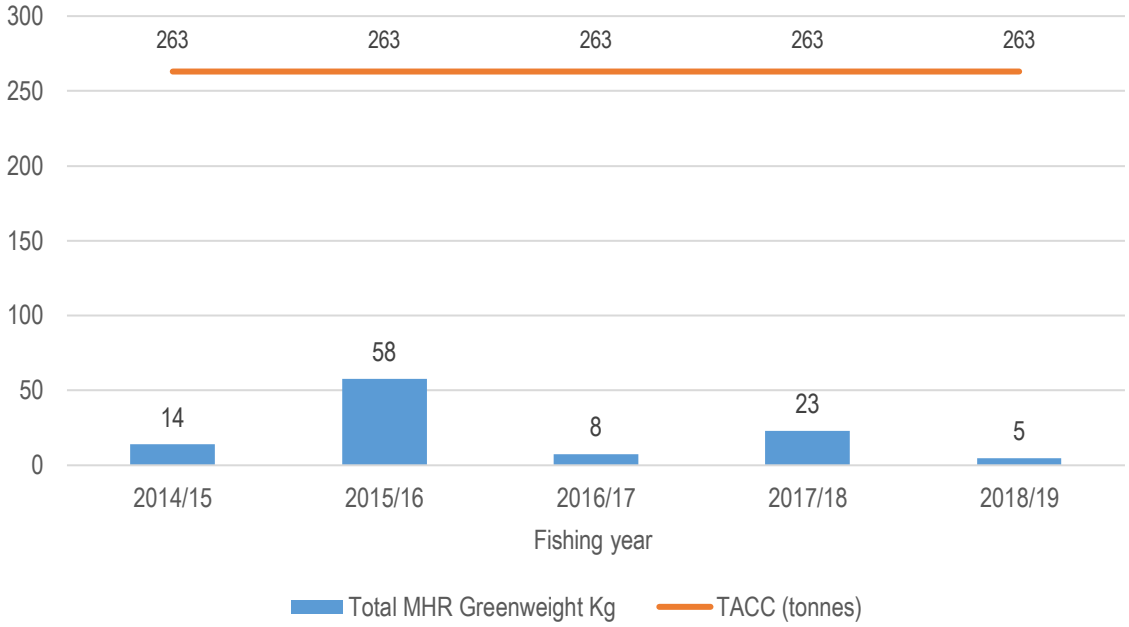


Figure 25. Yellowfin (YFN1) total allowable commercial catch and catch for the five most recent fishing years.

Yellowfin tuna is occasionally targeted in the surface longline fishery, however mainly caught as bycatch. Yellowfin tuna is also caught as bycatch in a number of other fisheries, such as the purse seine fishery, bottom longline fishery and troll fishery.

COMMERCIAL CATCHES OF NON-QUOTA SPECIES

Albacore tuna

In 2018/19, commercial catch of albacore tuna was 2,692 tonnes. Over the last five fishing years, commercial catch has ranged between 2,035 and 4,667 tonnes (see **Figure 26**).

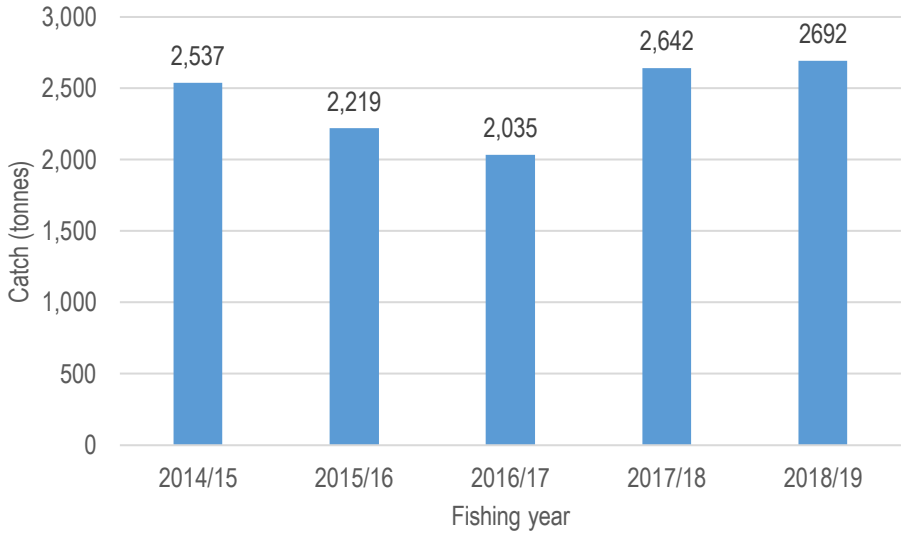


Figure 26. Total catch from Monthly Harvest Returns for albacore tuna catch (ALB1) for the five most recent fishing years.

Albacore tuna is targeted in the troll fishery. Albacore tuna is also caught as bycatch in a number of other fisheries, such as the surface longline fishery, the purse seine fishery, and the midwater trawl fishery.

The number of troll vessels targeting albacore tuna in the last five fishing years has ranged between 99 and 134. The number of vessel days targeting albacore tuna in the last five fishing years has ranged between 3,670 and 4,883 (see **Figure 27**).

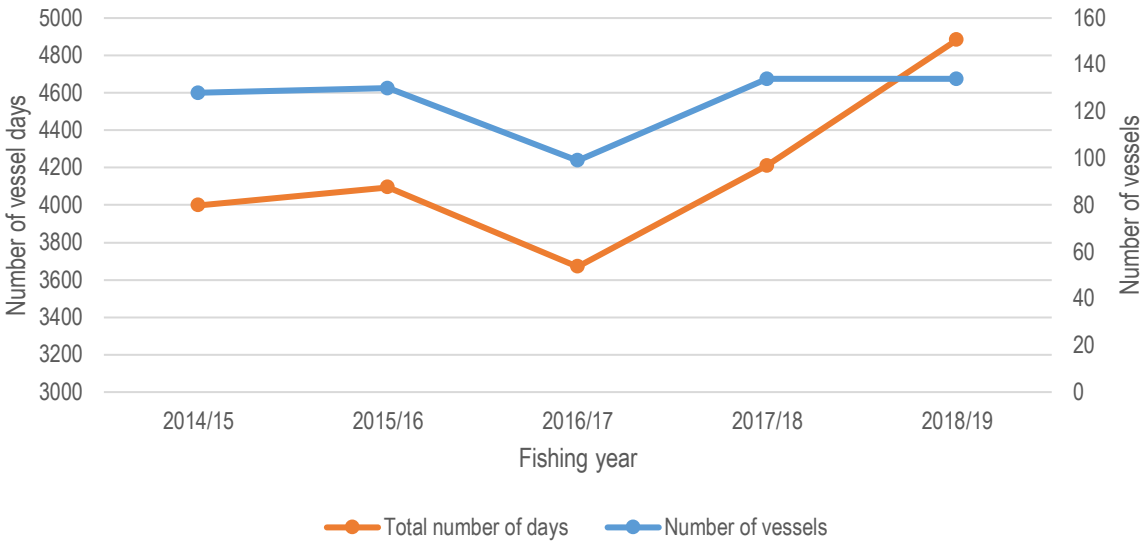


Figure 27. Number of troll vessels and vessel days targeting albacore tuna over the last five fishing years.

Skipjack tuna

In 2018/19, commercial catch of skipjack tuna was 5,177 tonnes. Over the last five fishing years, commercial catch has ranged between 3,821 and 12,411 tonnes (see **Figure 28**).

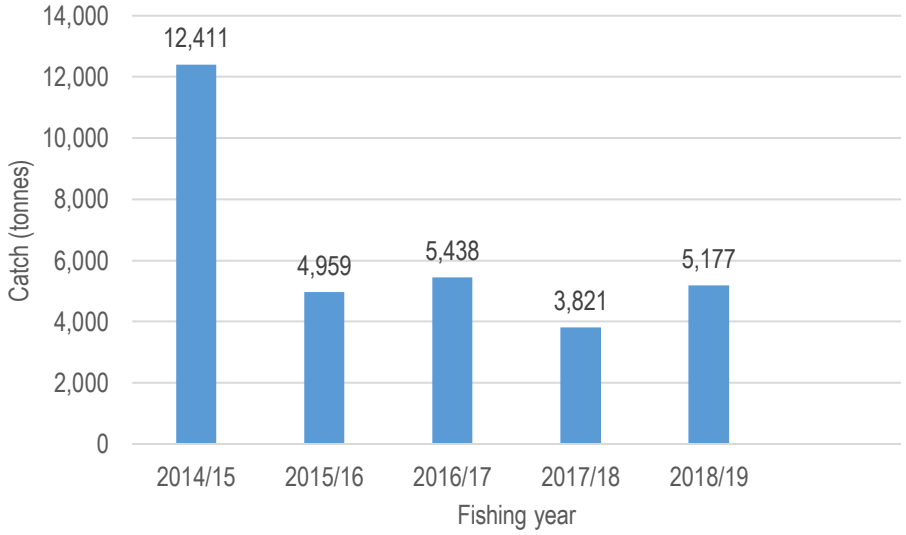


Figure 28. Total catch from Monthly Harvest Returns for skipjack tuna (SKJ1) over the five most recent fishing years.

Skipjack tuna is targeted in the purse seine fishery. Skipjack tuna is also caught as bycatch mainly in the troll fishery and the surface longline fishery.

The number of purse seine vessels targeting skipjack tuna in the last five fishing years has declined from 8 to 5 as three super seiners left the New Zealand fleet. This has had a significant impact on domestic catches. The number of shots targeting skipjack tuna in the last five fishing years has also declined form around 700 to around 250 0ver this period (see **Figure 29**).

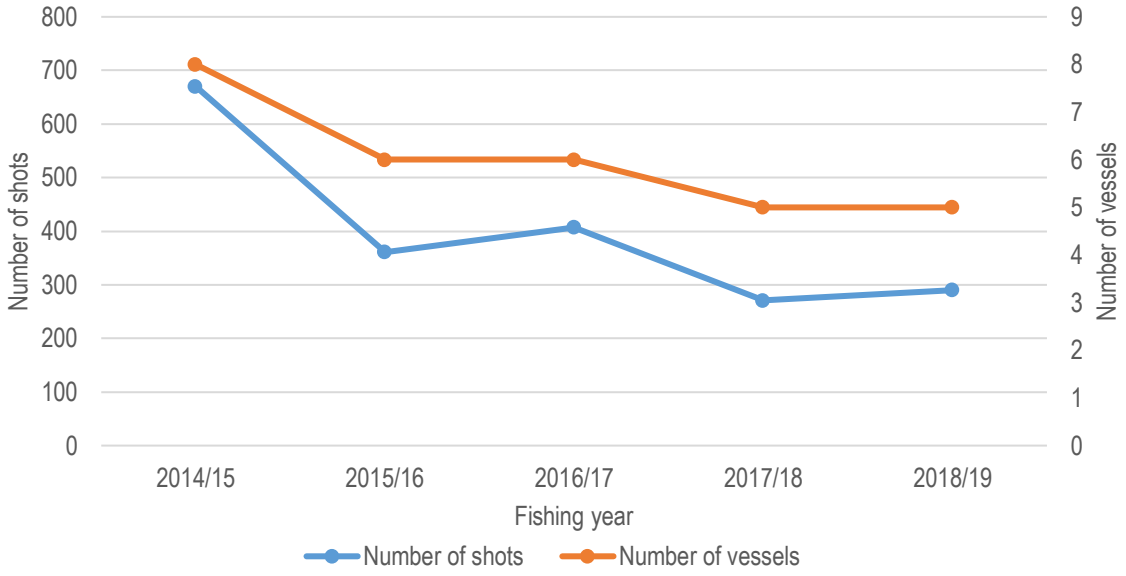


Figure 29. Number of purse seine vessels and shots targeting skipjack tuna over the last five fishing years.

Environmental reporting

This section usually includes information on seabird and turtle interactions with the surface longline fishery. The source of the information is the database of protected species bycatch compiled by Dragonfly Ltd. The database has not been updated with the 2018/19 fishing year information as yet, and therefore no information is included in this section. For 2017/18 information, please go to https://data.dragonfly.co.nz/psc-dev/.

OTHER NON-TARGET ASSOCIATED AND DEPENDENT SPECIES

Unless otherwise specified, the source of the information is the New Zealand Annual Report part 1 to the [Western and Central Pacific Fisheries] Commission.

For bycatch species of commercial interest, good estimates of landings are obtained from fisher records, while for less valuable species, observer data provides the best source of information. Here we provide data on major bycatch species including “key shark species” and species of special interest for the longline and purse seine fisheries within, and adjacent to, New Zealand fisheries waters.

The major bycatch species in the surface longline fishery have been brought into the New Zealand QMS. The large reduction in blue shark landed catch in 2014 was due to a lack of markets for HMS shark products. The large increase for Ray’s bream in 2014 came from fisheries other than the surface longline fisheries for tuna. In recent years the overall bycatch levels for all other species have been relatively consistent between years.

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 is provided by calendar year for 2014 to 2018, and for some species may include catches from non-tuna target fisheries.

Species	Scientific name	2014	2015	2016	2017	2018
Blue shark	*Prionace glauca*	106	148	172	126	117
Mako shark	*Isurus oxyrinchus*	49	47	72	39	35
Moonfish	*Lampris guttatus*	51	37	64	50	67
Porbeagle shark	*Lamna nasus*	74	83	42	26	56
Rays bream	*Brama brama*	658	169	125	110	273

The species listed in this last group are subject to the QMS and dead releases of these sharks are balanced against a fisher's annual catch entitlement. While there is a general rule prohibiting the discarding of quota species, in the case of these highly migratory sharks, specific provision has been made within the QMS to allow for the discarding of these species either alive or dead[15].

Table 8. Total estimated catch (numbers of fish) of common bycatch species in the New Zealand surface longline fishery as estimated from observer data from 2015 to 2018. Also provided is the percentage of these species retained (2018 data only) and the percentage of fish that were alive when discarded, N/A (none discarded).

Species	2015	2016	2017	2018	% retained (2018)	% discarded alive (2018)
Blue shark	72 480	57 210	49 924	63 618	0.0	88.7
Lancet fish	12 962	17 442	13 274	13 163	0.0	33.5
Rays bream	17 555	7 758	2 421	1 579	99.0	26.7
Porbeagle shark	4 058	6 566	3 101	2 594	1.0	51.1
Mako shark	2 667	4 417	1 391	2 721	4.0	65.6
Sunfish	770	4 849	1 648	3 648	0.0	99.81
Moonfish	3 060	3 036	2 022	2 698	98.0	50.0
Pelagic stingray	979	1 414	1 798	2 949	0.0	100.00
Butterfly tuna	1 309	768	406	419	89.2	31.3
Escolar	653	669	300	594	67.0	67.9
Oilfish	584	281	227	602	42.0	85.4
Rudderfish	373	237	680	253	45.0	89.4
Thresher shark	177	601	260	253	0.0	76.0
Striped marlin	120	550	290	247	0.0	66.7
Dealfish	842	63	72	25	0.0	31.8
Deepwater dogfish	545	0	32	6	0.0	83.3
Skipjack tuna	150	185	57	184	86.0	100.0
School shark	88	24	59	187	84	100.0
Big scale pomfret	59	16	17	34	100.0	n/a

To note: Observed longline trips are stratified by year, fleet, region and target species, and a catch per unit effort (ratio of means) for each species is established from numbers of fish and numbers of hooks observed. Estimates of catches (in numbers of fish) are obtained by scaling catch per unit effort to total hooks set by the commercial fishery per stratum and summing across strata.

[15] On 1 October 2014, the regulations were changed to include that HMS shark species could be returned to sea under certain circumstances: Schedule 6 Stocks whic may be returned to the sea or other waters in accordance with stated requirements

Cost recovery levies

Overall, total costs recovered over HMS for 2019/20 financial year decreased compared with costs recovered for the previous year (**Table 9**). The reasons for this change included:

- Observer costs decreased from 2018/19 by around $145,000. This is mainly due to no observer coverage of the skipjack purse seine fishery being planned during the 2019/20 financial year.
- Research costs decreased from 2018/19 by around $340,000. This is mainly due to decreases in shark and albacore research.

Table 9. Cost recovery levies ($) for HMS stocks for the 2019/20 financial year (figures in brackets are decreases).

2019/20 Plan	MPI Departmental		Observers		Research		Under/Over Recovery							
Stock	Compli-ance	Registry	Fisheries New Zealand	DoC	Fisheries New Zealand	DoC	MPI	DoC	2015/16 Total	2016/17 Total	2017/18 Total	2018/19 Total	2019/20 Total	Change
ALB	114,840	31,417	41,335	0	62,747	12,937	(27,388)	(1,926)	115,804	166,701	153,552	339,055	233,962	(105,093)
BIG1	100,450	27,480	61,568	12,008	34,776	28,452	(47,002)	(5,939)	427,519	266,706	199,552	305,129	211,793	(93,336)
BWS1	3,284	898	11	0	9	71	(202)	(3)	0	(1)	(0)	42,043	4,068	(37,975)
MAK1	824	225	3	0	2	18	(1,054)	(18)	43,682	1,277	8,946	12,357	0	(12,357)
MOO1	15,125	4,138	51	0	41	328	(875)	(12)	15,479	15,966	2,729	19,325	18,796	(529)
POS1	631	173	2	0	2	14	(35)	(1)	1	1	6,659	9,498	786	(8,712)
RBM1	10,667	2,918	36	0	29	232	(620)	(9)	18,161	16,877	4,057	13,195	13,253	58
SKJ	37,402	10,232	125	0	0	1,539	(10,387)	960	0	0	11,548	175,952	39,871	(136,081)
STN1	89,660	24,528	159,420	31,155	43,558	16,893	(20,806)	(6,706)	515,374	617,621	347,773	279,946	337,702	57,756
SWO1	77,699	21,256	40,994	7,983	58,657	13,637	(28,637)	(4,281)	138,140	116,300	143,033	202,423	187,308	(15,115)
TOR1	51,224	14,013	172	0	3,507	1,112	(6,315)	(42)	56,287	65,942	68,780	79,443	63,671	(15,772)
YFN1	23,962	6,555	80	0	1,641	0	(1,338)	0	27,557	26,973	26,241	30,678	30,900	222
TOTAL	525,768	143,833	303,797	51,146	204,969	75,233	(144,659)	(17,977)	1,358,004	1,294,364	972,871	1,509,044	1,142,110	(366,935)
2018/19 Comparatives	528,288	142,583	417,680	81,632	429,785	191,863								
Change	(2,520)	1,250	(113,883)	(30,486)	(224,816)	(116,630)								

MONITORING OF NON-COMMERCIAL FISHERIES

The information in this section is provided by the New Zealand Sport Fish Council, the Gamefish Tagging Programme Report (2019) and southern bluefin tuna recreational harvest report (2020).

New Zealand Gamefish Tagging Programme

The following tables show the number of sharks and billfish tagged in the New Zealand Gamefish Tagging Programme in the exclusive economic zone by sport fishing year (July to June). Around 400 mako sharks and 100 blue sharks are tagged and released each year. These fish are almost all caught as bycatch in recreational fisheries (**Table 10** and **Table 11**). The recaptures are for fish with recapture dates within each year. Around 100 other shark species are also tagged and released each year (**Table 12**).

The 2015/16 sport fishing year was a particularly good year, with 1,658 striped marlin tagged in the recreational fishery. This was followed by a cold fishing season in 2016/17 that resulted in lower fishing effort and lower catch rates, and better seasons in 2017/18 and 2018/19 (**Table 13**).

Table 10. Number of mako sharks tagged and released by year and recaptures.

Number	2009 /10	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15	2015 /16	2016 /17	2017/ 18	2018/ 19	Average 2010-2019
Tagged	494	609	488	524	367	439	583	331	288	214	434
Recaptured	7	7	8	11	6	0	2	3	4	0	5

Table 11. Number of blue sharks tagged and released by year and recaptures.

Number	2009 /10	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15	2015 /16	2016 /17	2017/ 18	2018/ 19	Average 2010-2019
Tagged	73	128	142	150	124	110	170	54	59	24	103
Recaptured	3	3	4	3	3	0	0	1	1	0	2

Table 12. Number of other shark species tagged.

Species	2009 /10	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15	2015 /16	2016 /17	2017 /18	2018 /19	Average 2010-2019
Bronze whaler	43	37	34	40	43	44	63	106	56	86	55
Hammerhead	16	43	38	19	27	17	51	34	27	24	30
Porbeagle	1	1		1			1		1		0.5
School shark	7	4	14	5	3	1	1	3	3	4	5
Sevengill	1	6					1		1	1	1
Unidentified	1	3	4	4	1	7	3	4	3	2	3
Thresher shark	5	8	16	16	11	9	17	13	6	7	11
White shark		1						1	1		0.3
Total	**74**	**103**	**106**	**85**	**85**	**78**	**137**	**161**	**98**	**124**	**105**

Table 13. Number of billfish tagged and released by year and total billfish recaptures.

Billfish	2009 /10	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15	2015 /16	2016 /17	2017/ 18	2018/ 19	Averag e 2010-2019
Striped marlin	858	733	663	858	520	1,088	1,658	517	711	739	806
Blue marlin	32	78	50	18	9	37	35	35	72	58	42
Shortbill spearfish	15	21	5	0	6	12	26	12	24	35	16
Swordfish	18	37	51	47	38	34	29	31	58	20	36
Black marlin	3	1	3	3	4	7	5	4	7	3	4
Billfish recaptures	2	1	1	4	4	2	7	3	4	3	3

Landed catch of billfish by recreational fishers

New Zealand Sport Fish Council member clubs report annual catch tallies. For many years these were a reasonably complete record from a specialist fishery. Over the last 20 years there has been an increase in the number of well-equipped private boats fishing for marlin and less of the landed catch is recorded by clubs. Striped marlin is the main species caught and number have been reasonably consistent but lower in 2018/19 (**Table 14**). The number of striped marlin landed or tagged and release by year since 1993/94 is shown in **Figure 30**.

Table 14. Billfish landed from New Zealand waters and recorded by New Zealand Sport Fish Council clubs

Species	2009 /10	2010 /11	2011 /12	2012 /13	2013 /14	2014 /15	2015 /16	2016 /17	2017 /18	2018 /19	Average 2010-2019
Striped marlin	607	607	635	744	620	696	900	516	618	507	660
Blue marlin	100	179	78	54	64	102	99	96	159	155	103
Shortbill spearfish	46	74	19	11	25	58	69	46	91	95	49
Swordfish	9	29	34	55	80	87	85	87	72	76	60
Black marlin	4	2	9	2	4	5	4	7	5	6	5

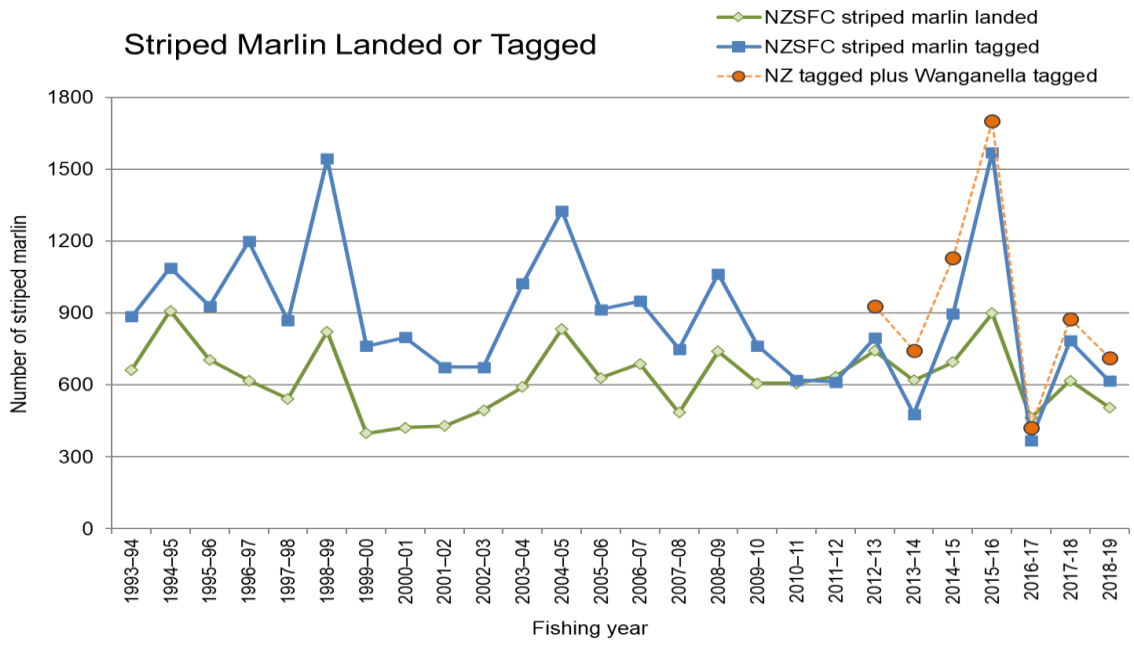


Figure 30. Recreational catch of striped marlin that were landed, tagged and Wanganella tagged from 1993/04 sport fishing year to 2018/19.

Note: Wanganella Banks is outside the New Zealand exclusive economic zone and has experienced high catch rates of striped marlin (at times over 20 fish per day). As this is outside the exclusive economic zone, the New Zealand Sport Fish Council do not include these fish in club or national statistics.

Landed recreational catch of sharks from New Zealand Sport Fish Council records

The general declining trend of landed recreational catch of sharks (in particular mako sharks and blue sharks) from the late 1990s the mid-2000s was due to the recreational sector removing shark competitions and discouraging the landing of pelagic sharks in light of concerns of declining populations. These measures have maintained pelagic shark landings at low levels despite indications that the populations are recovering.

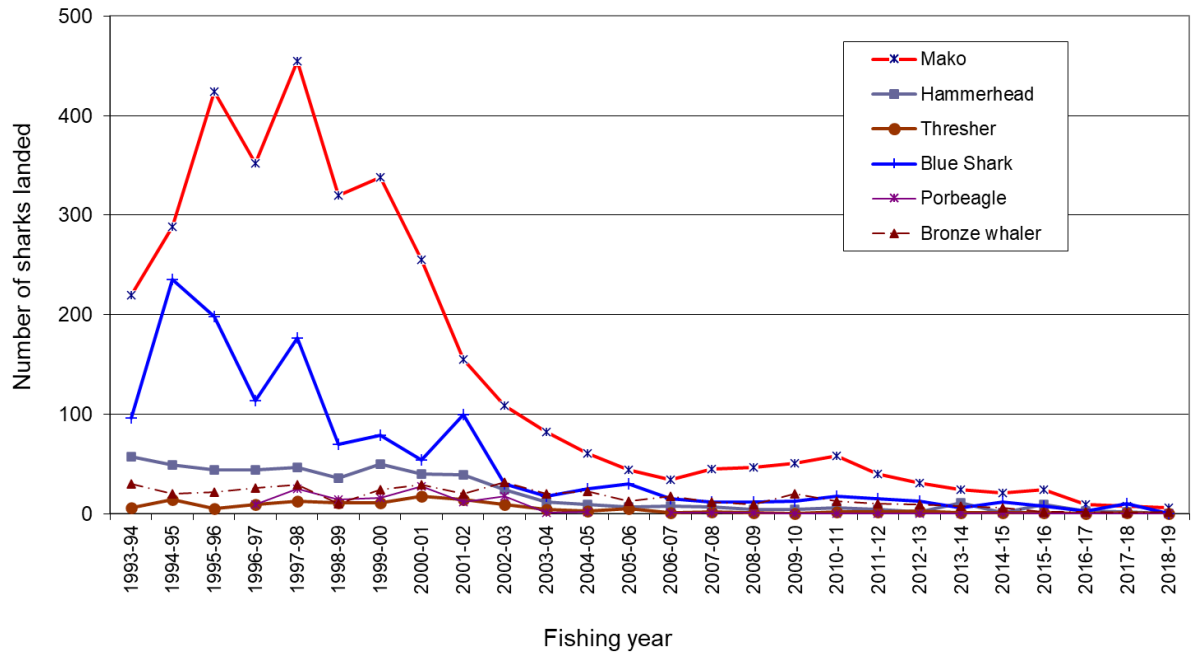


Figure 20. Recreational catch of shark species that were landed for New Zealand Sport Fish Council records from 1993/94 to 2018/19 sport fishing year.

Recreational catch of southern bluefin tuna

Prior to 2017, recreational catches of southern bluefin tuna were rare. The fishery out of Fiordland was small and there was little fishing effort in the North Island in the offshore areas and months where the tuna were. There had been some southern bluefin tuna bycatch in the Pacific bluefin tuna recreational fishery which developed off Greymouth and Hokitika in the mid 2000's. Over the last decade, recreational catches of southern bluefin tuna have been recorded in the months from February to September and interest in targeting them has increased.

Compulsory reporting for recreational charter vessel operators was introduced in November 2010. In 2012, four recreational charter vessel operators reported catching southern bluefin tuna in New Zealand fisheries waters. Reported catches from charter boats are illustrated in **Table 15**, below.

Table 15. Reported catch and effort for southern bluefin tuna from amateur fishing charter vessel logbooks by October fishing year.

	Number of target days	Number caught	Number retained	Estimated landed weight (kg)
2010/11	1	6	4	397
2011/12	4	6	4	131
2012/13	7	12	12	550
2013/14	0	0		
2014/15	16	6	2	95
2015/16	33	38	37	1 267
2016/17	53	54	52	2 274
2017/18	37	12	12	597
2018/19	63	47	42	1 821

In 2017, a mixture of factors, including favourable weather conditions, proximity of fish in the eastern Bay of Plenty, and increased recreational interest in southern bluefin tuna, resulted in much higher levels of catch than previously seen in this fishery. Records gathered from gamefish clubs show 266 fish were landed with an estimated total weight of 19.4 tonnes, and 13 were released alive. Additionally, there were 52 fish reported in charter vessel logbooks, an allowance of 15% was made for unaccounted catch, which increased the total estimate to 24.3 tonnes.

Fisheries New Zealand commissioned a project to estimate the national recreational catch of southern bluefin tuna in 2018. This included an on-site survey at Waihau Bay. The total landed catch was estimated to be 69 southern bluefin tuna (with a CV of 0.068). A further 22 southern bluefin tuna were recorded by other sport fishing clubs. In addition, logbook data from charter boats recorded 12 southern bluefin tuna and based on anecdotal information of the South Island fishery the landed catch by private fishers was estimated to be 80 southern bluefin tuna. An allowance of 15% to 30% was made for unaccounted catch. The recreational harvest estimate for southern bluefin tuna in the 2017/18 October fishing year was 15 tonnes and the estimated range was 13.4 tonnes to 17.0 tonnes.

The total landed catch estimated from the 2019 Waihau Bay survey was 192 southern bluefin tuna (with a CV of 0.075). These fish we all caught in June and July (**Figure 21**). A further 34 southern bluefin tuna were recorded by other sport fishing clubs. In addition, logbook data from charter boats recorded 42 southern bluefin tuna and based on anecdotal information of the South Island fishery the landed catch by private fishers was estimated to be 67 southern bluefin tuna. An allowance of 15% to 30% was made for unaccounted catch. The recreational harvest estimate for southern bluefin tuna in 2018/19 October fishing year is 25.9 tonnes and the estimated range is 24.4 tonnes to 27.9 tonnes. The full report form 2018/19 is here.

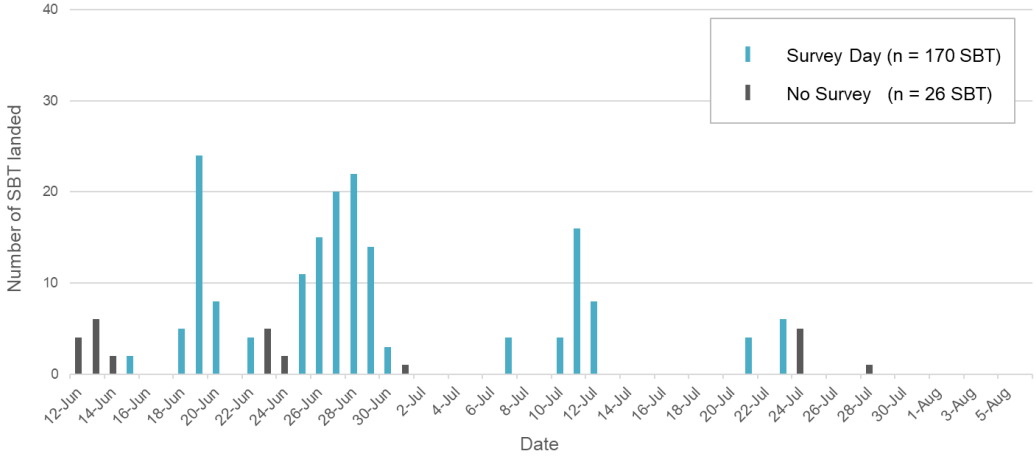


Figure 31. The number of southern bluefin tuna landed per day in 2019 from survey interviews and club weigh station observations on survey days and non-survey days at Waihau Bay.

Error! Reference source not found., below, shows that the Waihau Bay survey found 74% of trips in 2019 landed no southern bluefin tuna and of 139 trips that did land southern bluefin tuna, 81% landed one fish per trip.

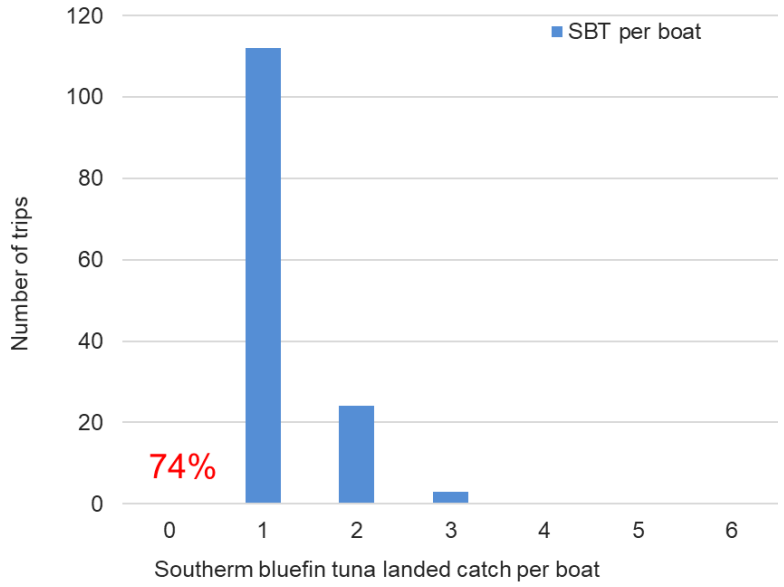


Figure 22. The number of southern bluefin tuna landed per boat trip in 2019 from survey interviews.

In 2018 most of southern bluefin tuna caught in the eastern Bay of Plenty fishery were over 60 kilograms and the average weight was 78.3 kilograms. There were more 40 to 59 kilogram fish in 2019 with an average weight of 72.3 kilograms that year (**Error! Reference source not found.**).

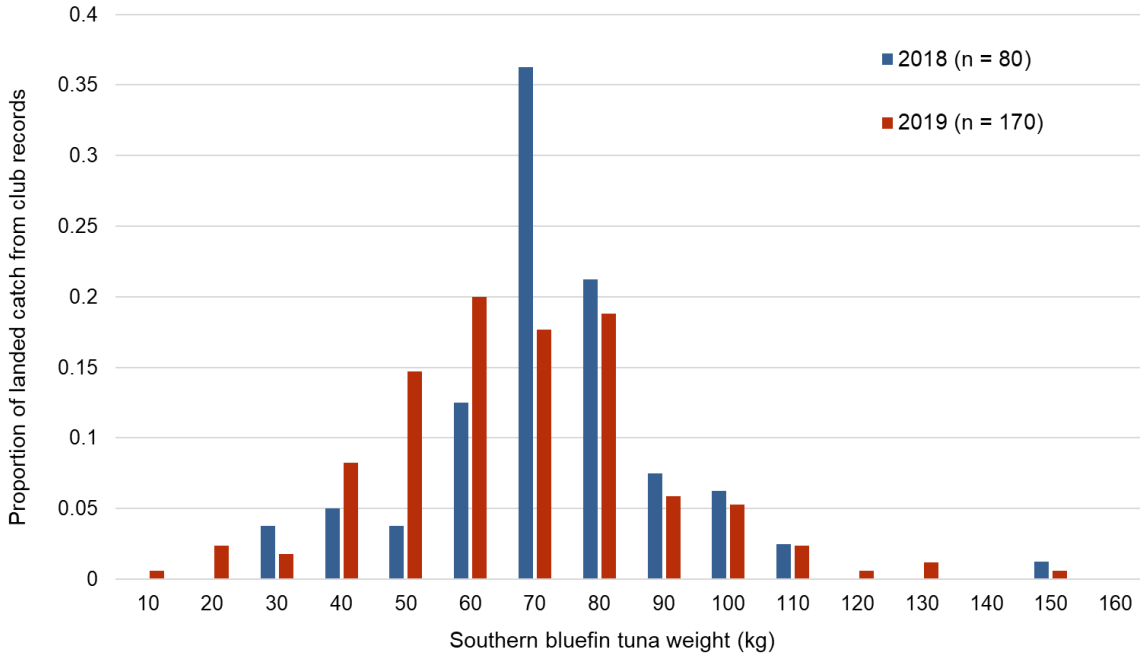


Figure 23. The number of southern bluefin that were weighed at 10 kilogram intervals.