



Annual Review Report for Highly Migratory Species Fisheries 2013-14



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Annual Review Report for HMS fisheries for 2013/14

Part One: Progress against key focus areas and business as usual tasks

Growing and Protecting New Zealand





KEY FOCUS AREAS (KFAs)

KFA 1 - manage domestic ALB and SKJ fisheries to ensure consistency with Pacific-wide management

ALBACORE

- Working on framework of zone based limits since 2011
- On-going challenges with gaining agreement both within Pacific countries, and at WCPFC.
- Difficult to balance aspirations of coastal states (incl for high seas) and provide for DWFNs within MSY
- There has been no agreement at WCPFC to date, NZ considering ways of securing sustainable catch limit for South Pacific albacore
- May 2014 sub-committee; advancing rights based management (within EEZs) through a formal regional arrangement in addition to revising albacore CMM

KFA 1 - manage domestic ALB and SKJ fisheries to ensure consistency with Pacific-wide management

SKIPJACK

- Updated measure adopted at annual meeting in Dec 2013 – CMM 2013-01:
 - 2014: 3 month FAD closure (Jul-Sept) plus **additional month (Oct)** or limit on total no. FAD sets
 - 2015 and 2016: 5 Month closure (Jan, Feb plus Jul-Sept) OR 3 month closure plus limit FAD sets
 - 2017: prohibited to set on FADs in the high seas (with some exceptions)

KFA 1 - manage domestic ALB and SKJ fisheries to ensure consistency with Pacific-wide management

SKIPJACK continued

- **High seas limits:** non-Small Island Developing States shall restrict the level of purse seine effort on high seas to specified limits for 2014; the Commission will review the limits at its annual meeting in 2014 and agree on high seas purse seine effort limits to apply after 2014.
- **Capacity controls** for purse seine and LL vessels (other than Small Island Developing States & Indonesia)
- **YFN purse seine and LL catches:** measures to not increase catches of yellowfin tuna, prior to adoption of limits in 2014

KFA 1 - manage domestic ALB and SKJ fisheries to ensure consistency with Pacific-wide management

SKIPJACK continued

- In-zone controls also clarified:
 - PNA members to limit effort through Vessel Day Scheme
 - Other coastal states with effort >1,500 days to limit their effort to 2001-2004 average levels or 2010 levels
 - **Others (incl NZ):** establish effort or catch limits, to be notified by **30 June 2014** – to be discussed under Agenda Item 3

KFA 2 - Manage interactions of HMS fisheries with seabirds

- Changes to mitigation measures will be gazetted before 1 July 2014
- Bird mitigation trials (line weighting) – ongoing
- Seabird risk assessment updated and presented to CCSBT
- Improvements to observer reporting – ongoing
- Developing appropriate reduction targets – proposals for discussion at this meeting



KFA 2 - Manage interactions of HMS fisheries with seabirds

- Keeping a watching brief on electronic monitoring developments, including implementation in inshore fisheries
- Seabird workshop – held as part of surface longline meeting in November; seabird mitigation is a standing agenda item at surface longline workshops, which are held 2x a year
- Buller's albatross – updates to distribution information info in risk assessment

KFA 3 – HMS Compliance

- Qualitative vs. Quantitative
- Indicators rather than measures
 - Outcomes vs. Inputs
 - Difficulties in attributing to HMS
 - Financial year reporting



KFA 3 – HMS Compliance

- Domestic Inspections (first 3 quarters 2013-14)

SLL/Troll Inspections		
	Number of Inspections	Breaches detected
At-sea	7	1
Monitored unloads	14	1
Vessel (port)	55	11
Other	37	4

Purse Seine Inspections		
	Number of Inspections	Breaches detected
At-sea	2	1
Monitored unloads	1	0
Vessel (port)	3	0
Other	2	0

LFR Inspections		
	Number of Inspections	Breaches detected
LFR	40	5

KFA 3 – HMS Compliance



- 8 “HMS” breaches detected in first three quarters
- Primarily related to reporting and recordkeeping
- One breach of bird mitigation requirements

KFA 3 – HMS Compliance

- Activities on the high seas (i.e. Aerial and Naval patrols)

2013 Aerial Surveillance (NORPAT)	
Flights	4
SLL observed	34
Bird Mitigation breach	nil
PS observed	15
Serious breaches of WCPFC CMM	nil
FAD breach	nil

2013 ZODIAC	
High Seas Boarding and Inspection	
Navy Patrols	1
SLL inspected	21
Bird Mitigation breach	nil
PS observed	nil
Serious breaches of WCPFC CMM	1
FAD breach	nil



KFA – HMS Compliance

FFA PATROL

- TUI MOANA 2014 stretched from 14-23 May across the EEZs and high seas of Cook Islands, Samoa, Tonga, Niue, Tokelau and Tuvalu. Opportunities also arose throughout the operation to extend coverage into the EEZs of Kiribati (Phoenix), Australian, Vanuatu, Wallis and Futuna and French Polynesia with their cooperation.
- Several cases remain open for investigation, and there was one apprehension from the 200+ remotely sensed/sighted vessels and the 30 vessels boarded during Operation Tui Moana.
- In 2014, surveillance tracking by the seven aircraft, four member country patrol boats, and three naval ships revealed EEZs provided the largest capability ever.

KFA 4 - Improve engagement of Maori in management of HMS

- Stage I research project (pilot) reported back to HMS working group in September; a draft of the final report is currently under review
- The survey questions covered all kaimoana not just HMS species and no HMS were specifically identified as being of particular significance (either for food or other purposes e.g. as kaitiaki species)

KFA 5 - Manage the interaction of HMS fisheries with sharks

- The NPOA-Sharks was adopted in January 2014, and sets goals and objectives for shark conservation and management.
- Key activities in 2013-14:
 - Completion and adoption of NPOA
 - Strategies to prohibit shark finning developed and formal consultation on regulatory proposals now underway (**ends June 22**)
 - Planning for risk assessment underway (both qualitative and quantitative assessments)



KFA 6 – Improve the CDS

- Most improvements have been in the backroom administration
- Improvements to monitoring of imports
- Placing more responsibility on fishers
- Delays at CCSBT with development of e-CDS, but some internal work on furthering an electronic system for NZ if feasible.

KFA 7 – Improve understanding of the impact of out-of zone fisheries on the availability of HMS in New Zealand

YELLOWFIN – Science (SPC PhD student)

- Local declines in catch rates led to investigation into ‘Range Contraction’ as a possible cause of the observed changes in species’ availability
- Results of analyses presented at the 13th meeting of the Sub-Committee on South Pacific Tuna and Billfish suggested YFN abundance contracting towards regions with warmer waters, although the cause of this could not be identified with the data available
- Further modelling work is examining trip by trip data to investigate this further these updates are due to be reported back to the FFA sub committee (Oct 2014)

KFA 7 – Improve understanding of the impact of out-of zone fisheries on the availability of HMS in New Zealand

YELLOWFIN – Science/Management

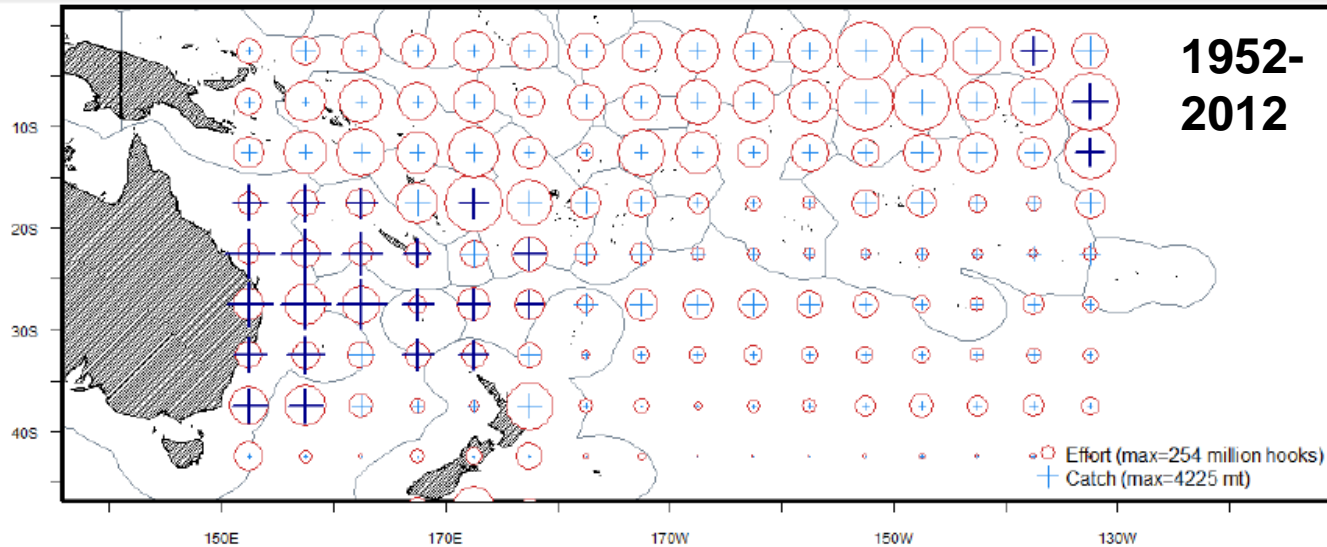
- Latest work calculated potential target reference points that could relate to a management objective of *‘maintaining the viability of fisheries across the historic geographic range of the stock’*
- Reference points based on stock sizes when “good” CPUE was experienced (2 and 3 fish/1,000 hooks)
- These stock sizes were 33% and 75% higher than the average recent biomass (2006-10)
- Would require significant reductions in LL catch and PS effort over short term (24% and 58% over 5 yrs)
- This year’s Mgmt Objectives workshop - focus on SKJ

KFA 7 – Improve understanding of the impact of out-of zone fisheries on the availability of HMS in New Zealand

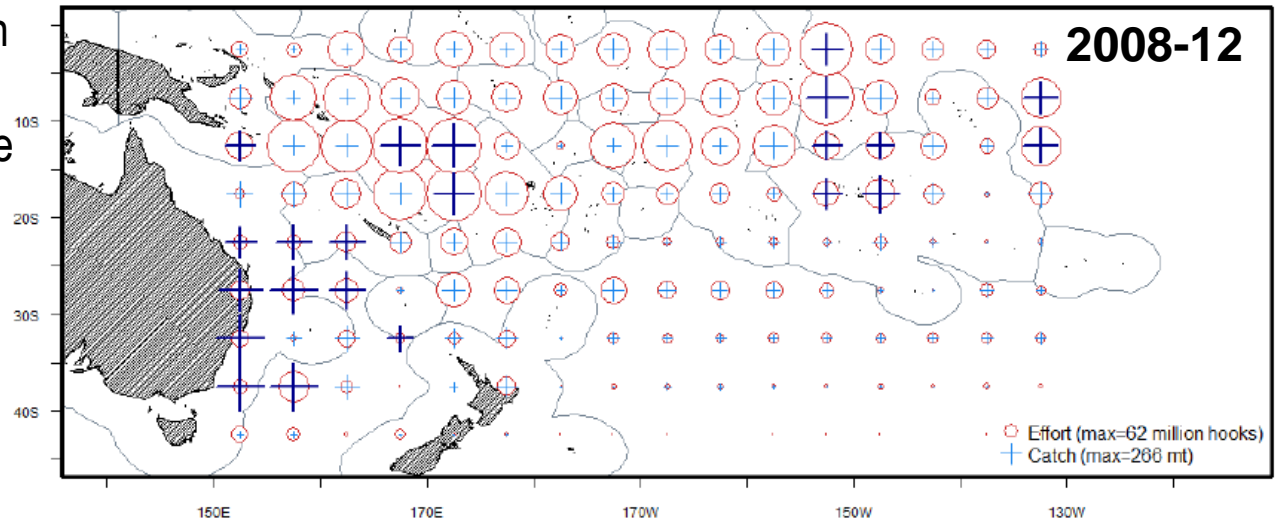
STRIPED MARLIN

- 8th meeting of the Scientific Committee requested an analysis of areas of concentration of catches of striped marlin in the southwest Pacific Ocean
- The analysis used raised 5x5 degree aggregate data and some operational data (1952-2012)
- Maps provide information on the spatial distribution of effort, catch and catch-per-unit-effort on a single panel

KFA 7 – Improve understanding of the impact of out-of zone fisheries on the availability of HMS in New Zealand



Areas of highest concentration of catch differ somewhat between longer term and more recent data but AUS EEZ and adjacent high seas have consistently produced high catches and CPUE.



KFA 7 – Improve understanding of the impact of out-of zone fisheries on the availability of HMS in New Zealand

STRIPED MARLIN continued

- Recreational Monitoring (*Holdsworth & Saul 2013*):
 - Total recreational catch from NZFSC and for long term sport fishing clubs slightly up:
 - 635 landed; 661 tagged (2011/12) – lowest in the last 5 years
 - 730 landed; 745 tagged (2012/13) – close to the average in recent years
 - Mean recreational STM weight trending up
 - CPUE 2012-13 generally better than 2011-12 through to March; late season high CPUE from far North

A photograph of two white ferries on a body of water. The ferry in the foreground is larger and has several people on its deck. The ferry in the background is smaller. In the distance, there are mountains under a clear sky. A dark blue banner with white text is overlaid at the bottom.

BUSINESS AS USUAL (BAU) TASKS

BAU 1 – Review catch limits and management settings as required

- Changes made to catch limit for southern bluefin tuna, following CCSBT meeting in October 2013 (in-season increase for 20013-14 plus change to baseline for 2014-15)
- Changes to seabird mitigation to bring our measures into line with WCPFC

BAU 1 – Review Catch Limits (STN)

- Changes to southern bluefin TAC
 - 2013/14 in-season review

Total Allowable Catch (TAC)	Maori Customary Allowance	Recreational Allowance	Other Sources of Fishing-Related Mortality	Total Allowable Commercial Catch	Additional in-season ACE
2013-14 baseline figures					
830	1	8	4	817	-
2013-14 in-season change					
910	1	8	15	817	69

- 2014/15 TAC change

Total Allowable Catch (TAC)	Maori Customary Allowance	Recreational Allowance	Other Sources of Fishing-Related Mortality	Total Allowable Commercial Catch
2013-14 baseline figures				
830	1	8	4	817
New TAC agreed for 2014-15				
1000	1	8	20	971

BAU 2 – Contribute to International processes including meetings of CCSBT and WCPFC

WCPFC – Scientific Committee (SC9); 6-14 Aug 2013

Stock	Outcome	Recommendations
Key tropical tunas	No new stock assessments	Largely unchanged
S. Pacific ALB	Concern at impact of increasing catch and effort on CPUE	Longline fishing mortality and catch need to be reduced to maintain economically viable catch rates
Swordfish	Accepted assessment. Highly sensitive to growth assumptions; growth models from AUS (pessimistic) and Hawaii (optimistic)	Because of high uncertainty, scientific committee recommended a precautionary approach of no increase in fishing effort over 2007-2010 levels
Pacific bluefin	Accepted ISC assessment (near to historical low level of 4% of unfished biomass)	No agreement on management advice but reduction in fishing mortality needed

BAU 2 – Contribute to International processes including meetings of CCSBT and WCPFC

WCPFC – SC9 continued

Stock	Outcome	Recommendations
North Pacific blue shark	Two assessments presented but both rejected	Assessment was to be repeated by SPC in 2014 but limited data has lead to change to indicator assessment
Silky sharks (not commonly found in NZ)	Accepted updated assessment. fishing mortality (F) far in excess of sustainable levels ($F_{\text{current}}/F_{\text{MSY}} = 4.32$). Overfishing occurring and highly likely stock is overfished	Meeting supported advancement of a comprehensive shark measure
All	Advances in setting reference points: -Defining time windows for comparing recent biomass to biomass supporting max. sustainable yield - Appropriate value for the fishing mortality (F) that will give a certain depletion level (X) from the spawners per recruit at virgin biomass ($F_{X\%SPR0}$)	

BAU 2 – Contribute to International processes including meetings of CCSBT and WCPFC

Future planned assessments

Species	Last assessment	Area	2014	2015	2016	2017
Bigeye tuna	2011	WCPO	X			
		Pacific-wide		X		
Skipjack tuna	2011	WCPO	X			
Yellowfin tuna	2011	WCPO	X			
Albacore tuna	2012	South Pacific		X		
Striped marlin	2012	SW Pacific				X
Swordfish	2008	SW Pacific				
Silky shark	2012	WCPO				
Oceanic whitetip shark	2012	WCPO		X		
Blue shark		North Pacific	X			
Mako shark		South Pacific	X ¹			

¹ Uncertain whether this will occur in 2014, but work on 'general' shark mitigation and reference points is likely.

BAU 2 – Contribute to International processes including meetings of CCSBT and WCPFC

WCPFC – Technical and Compliance Committee (TCC9); 26 Sep - 01 Oct 2013

- Main focus of discussion on tropical tunas measure was on disproportionate burden to small island developing states (SIDS) but limited progress made
- Ambiguity about SKJ catch/effort limits outside of 20°N/20°S
- New Zealand focus on measures to maintain BIG and YFN throughout their range

BAU 2 – Contribute to International processes including meetings of CCSBT and WCPFC

WCPFC –TCC9 continued

- Compliance with measures was dealt with measure by measure instead of by each country; was time consuming but gave high level of engagement and scrutiny
- US developing proposal for responses to non-compliance
- Strong focus on the continued deficit of operational data and defining it precisely to ensure measures are interpreted correctly and are robust

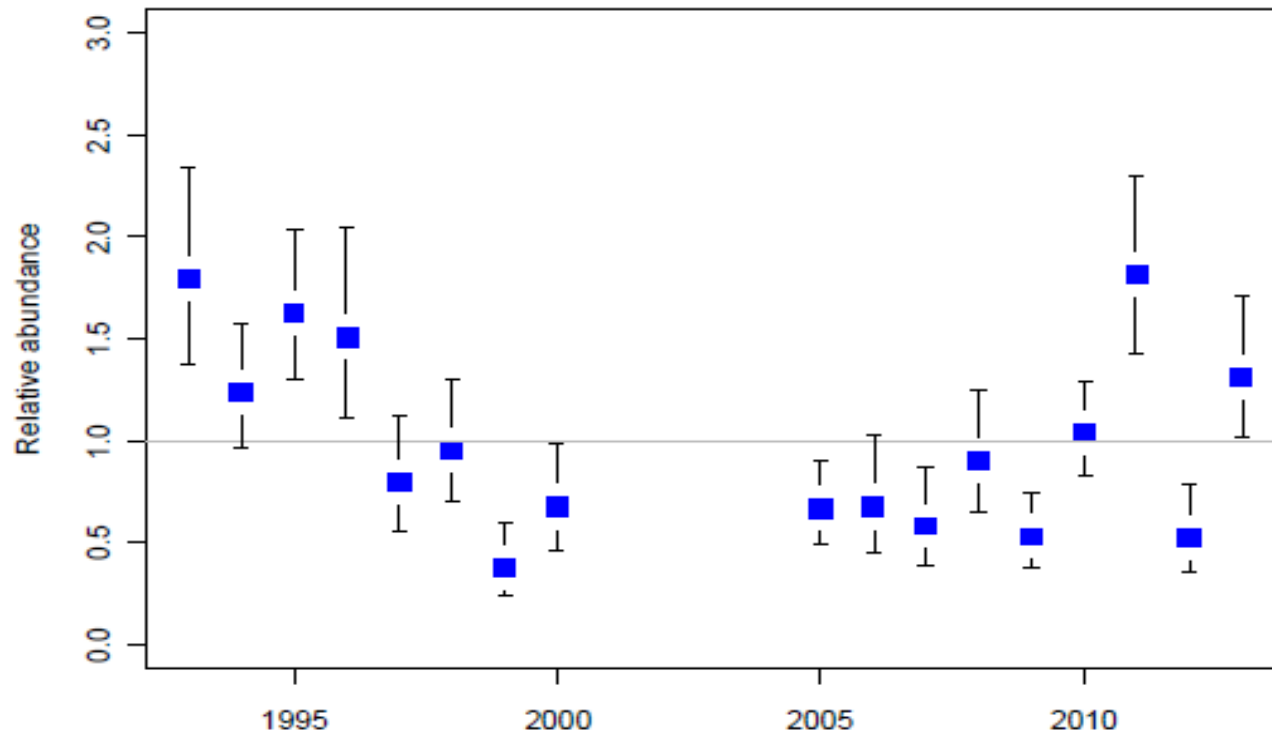
BAU 2 – Contribute to International processes including meetings of CCSBT and WCPFC

WCPFC10 (02-06 Dec) – Key Outcomes:

- Updated measure adopted for Bigeye, Yellowfin and Skipjack (Trop. Tunas)
- South Pacific Albacore Measure put forward but no traction
- Shark Management – no agreement reached on FFA proposed revised Measure
 - Removal of 5% fin to carcass ratio obligation for “attached”
 - Prohibition on wire traces and shark lines
- Monitoring Control and Surveillance (MCS)

BAU 2 - CCSBT Updates

Figure 5. Time series of relative abundance estimates with 90% confidence intervals.



BAU 2 - CCSBT Updates

- Compliance Committee
 - Australian delays in the implementation of stereo-video monitoring
 - Japan compliance review linked to allocation increase
 - NZ strong compliance record
 - New IUU listing resolution
 - Future Work

BAU 2 - CCSBT Updates

- Commission Meeting
 - Confirmation of 2014 and 2015 TAC
 - 2016 and 2017 levels to be confirmed at 2014 Commission meeting
 - Carry-forward allowed in 2013/14 but will not be available for 2014/15
 - Common definition of “attributable catch” to be developed



BAU 2 - CCSBT Updates

2014 Member Allocations	
Japan	3,361t
Australia	5,151t
New Zealand	910t
Korea	1,036t
Taiwan	1,036t
Indonesia	750t
2014 Cooperating Non-Member Allocations	
South Africa	150t
Philippines	45t
European Union	10t

2015 Member Allocations	
Japan	4,737t
Australia	5,665t
New Zealand	1,000t
Korea	1,140t
Taiwan	1,140t
Indonesia	750t
2015 Cooperating Non-Member Allocations	
South Africa	150t
Philippines	45t
European Union	10t

BAU 2 – CCSBT Updates

April Compliance Workshop

- Progress on technical restraints to new transshipment and port state measures resolutions
- Little progress on revised definition of attributable catch
- Revised 3 year compliance plan

BAU 3 – Monitor commercial and non-commercial fisheries for HMS

- Fiscal year monitoring

Fishery	Total planned	Total achieved	%
SLL- charter	430	116	27%
SLL - BIG and SWO east coast	225	95	42%
SLL - BIG and SWO west coast	35	35	100%
SLL - STN east coast	157	103	66%
SLL - STN west coast	35	48	137%
Ex-zone WCPFC	10	0	0%
Purse seine - domestic SKJ	70	62	89%
Super seine - SKJ	30	46	153%
TOTAL	992	505	51%

BAU 3 – Monitor commercial and non-commercial fisheries for HMS

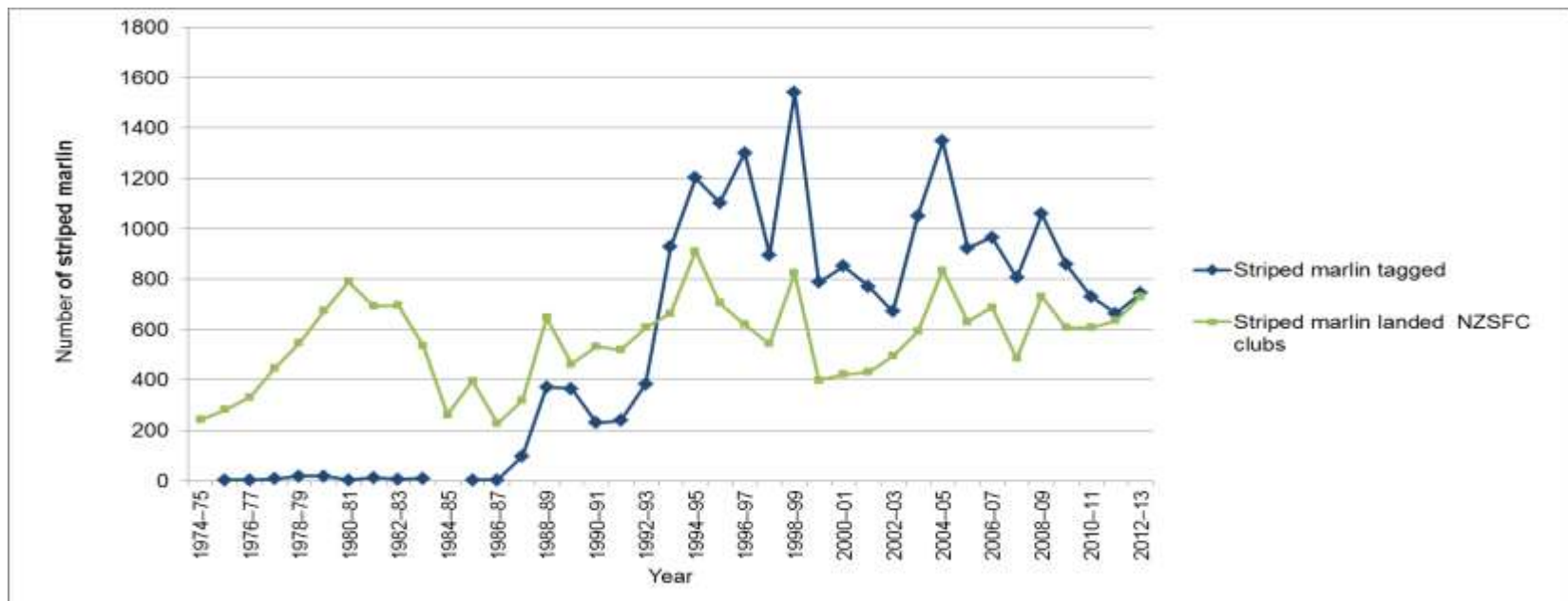
	2003–	2004–	2005–	2006–	2007–	2008–	2009–	2010–	2011–	2012–	Average 2003 to 2013
Mako	04	05	06	07	08	09	10	11	12	13	
NZ EEZ	188	241	193	150	297	285	494	609	488	524	347
% tagged	70	80	81	82	87	87	90	92	92	94.3	86
Recaptures	9	6	3		2	5	7	7	8	11	6

	2003–	2004–	2005–	2006–	2007–	2008–	2009–	2010–	2011–	2012–	2003 to
Blue shark	04	05	06	07	08	09	10	11	12	13	2013
NZ EEZ	106	102	95	157	108	101	73	128	142	148	116
% tagged	85	80	76	91	90	89	92	91	90	93	88
Recaptures	2	2	1	2	3	4	3	3	4	3	3

NZGTP	2003–	2004–	2005–	2006–	2007–	2008–	2009–	2010–	2011–	2012–	Average 2003 to 2013
	04	05	06	07	08	09	10	11	12	13	
Striped marlin	1051	1348	923	965	806	1058	858	731	663	745	934
Blue marlin	8	29	17	26	29	24	32	78	50	17	31
Shortbill spearfish	8	7	11	14	8	5	15	21	5	0	9
Swordfish	2	6	5	16	25	24	18	37	50	33	22
Billfish recaptures	5	4	2	1	4	3	2	1	1	4	3

BAU 3 – Monitor commercial and non-commercial fisheries for HMS

- Recreational catch of striped marlin from NZSFC and Gamefish Tagging Programme records



BAU 4 – Implement the HMS research plan

Project code	Title
ALB2013-01	Albacore catch sampling
HHS2013-01	Stock dynamics of hammerhead sharks - part II
HMS2013-01	Data reports for New Zealand HMS fisheries for national and international obligations.
HMS2013-02	Age, growth and reproduction of HMS sharks from observer collected samples
HMS2013-03	Evaluation of the effectiveness of 6 th Schedule conditions - Part I: blue sharks
HMS2013-04	Rapid assessment of iwi fisheries - part II - Customary Research
POS2013-01	Stock assessment of porbeagle sharks (tweak to be an indicators paper)
PRO2013-xx	Estimation of non-fish bycatch (e.g. seabirds, turtles, and marine mammals) - AEWG
STM2013-01	Multi-year stock monitoring of striped marlin including logbook programme implementation
STN2013-01	Catch-at-age of Southern bluefin tuna.
TAG2013-01	Management of data from the gamefish tag recapture programme
Blue shaded projects are work required by the HMS Fisheries Plan but funded through other funding streams.	

BAU 5 – Support environmental certification for the albacore fishery

MSC Certification - NZ ALB troll fishery

- New Zealand albacore troll fishery certified 'sustainable' by Marine Stewardship Council (MSC) since 16th May 2011
- 3x Annual Audits; most recently May 2014
- Routine updates to consultant working with Tuna Management Association (TMA)
- Opportunities to engage Industry more actively in the process at both the national and regional level

BAU 5 – Support environmental certification for the albacore fishery

MSC Certification – Regional process

- Limit Reference Point established at WCPFC ($20\%SSB_0$) – *Spawning Stock Biomass depletion*
- Further work presented to the 9th Regular session of the Scientific Committee (2013)
- New Zealand continues to co-operate with other countries in the fishery to further refine limit reference points and to adopt an appropriate target reference point for the South Pacific albacore stock
- New formal regional arrangement for South Pacific albacore to support this process

BAU 6 – Contribute to implementation of the Ministry's MOU on Pacific Capacity

- 3 day Tokelau Workshop (3#) Auckland March 2014
- 10 day inshore management workshop with Tokelau Inshore - Nukunonu May 2014
- Policy and Planning support to Samoa
- Ongoing engagement at Regional meetings; SC-SPTBF 16 (May 2014)

BAU 7 – Engage with Fisheries Stakeholders

- New HMS fisheries pages on the web:
www.fish.govt.nz/en-nz/hms/default.htm
- Held 2 longline Workshops in 2013-14 (Nov 2013 and March 2014)
- Participation in the Tuna Management Association AGM (November)
- Ongoing consultation on catch limit for skipjack
- Ongoing work with industry and environment groups on shark conservation and management and other protected species e.g. seabirds.

Part Two: Summary of key indicators for the 2012-13 fishing year

1 Stock status

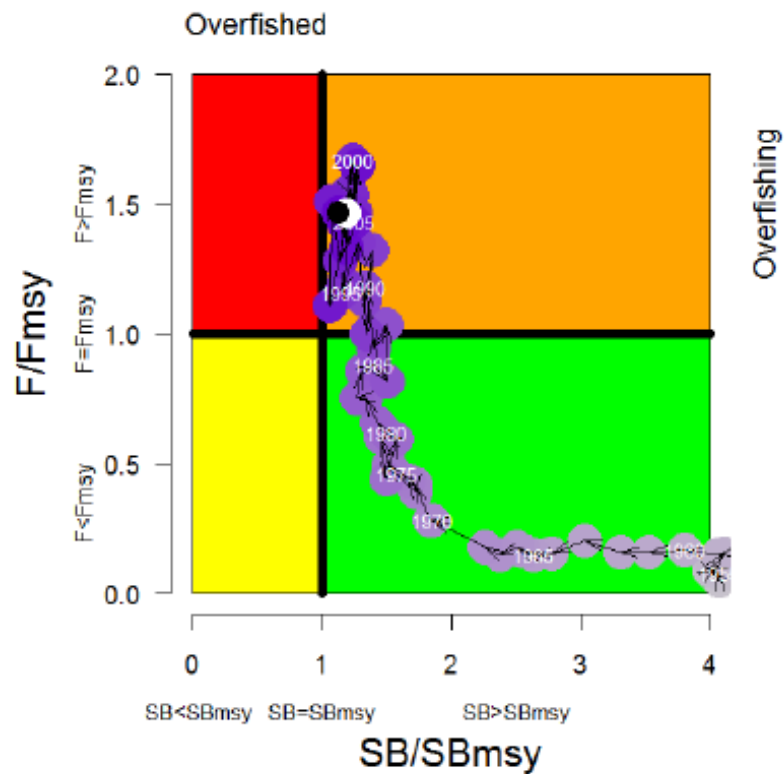
Table 1: Summary stock status information for HMS fisheries

Stock	Last Assessment	Overfishing occurring	Stock overfished
Bigeye tuna	2011	Y	N
Yellowfin tuna	2011	N	N
Skipjack tuna	2011	N	N
Albacore tuna	2012	N	N
Pacific Bluefin (NC)	2012	Y	Y
Southern Bluefin tuna	2011	N	Y
Swordfish	2013	N	N
Striped Marlin tuna	2012	N	N

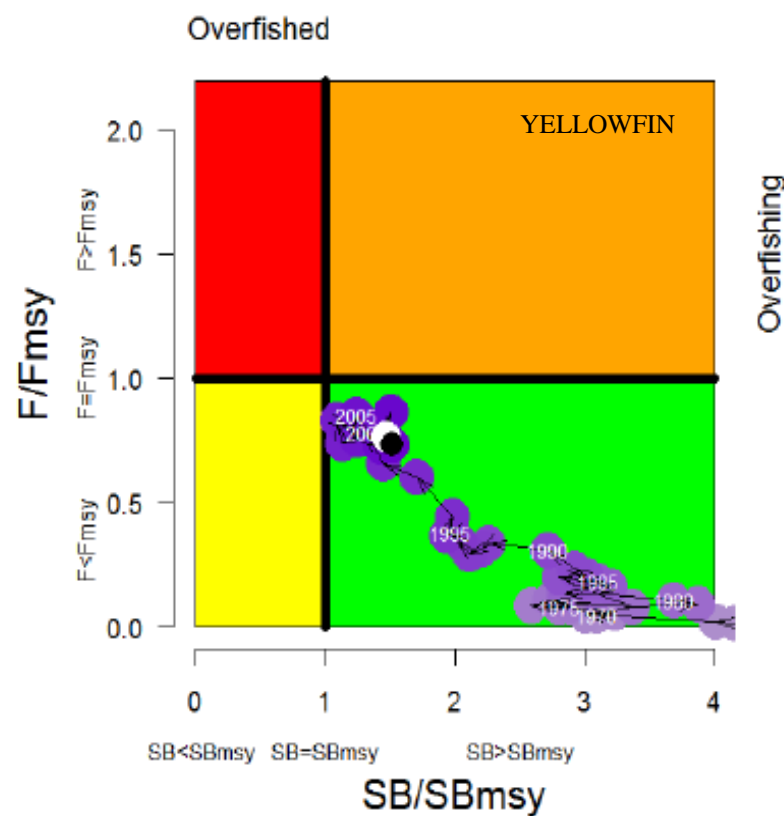
All assessments excluding Southern Bluefin tuna are presented to the Scientific Committee of the Western and Central Pacific Fisheries Commission (WCPFC); the dates of the most recent assessment for each key species is shown in the table above. Stock assessments from the WCPFC for 2014 are being completed for bigeye, yellowfin and skipjack tunas. The results of these assessments will be presented to the scientific committee meeting in August 2014. Southern bluefin tuna stock assessments are carried out by the scientific committee of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). The most recent assessment was carried out in 2011. An assessment that is currently underway will be presented at this year's CCSBT Science Meeting in September 2014.

1.1 Historical stock status trajectory for tuna stocks

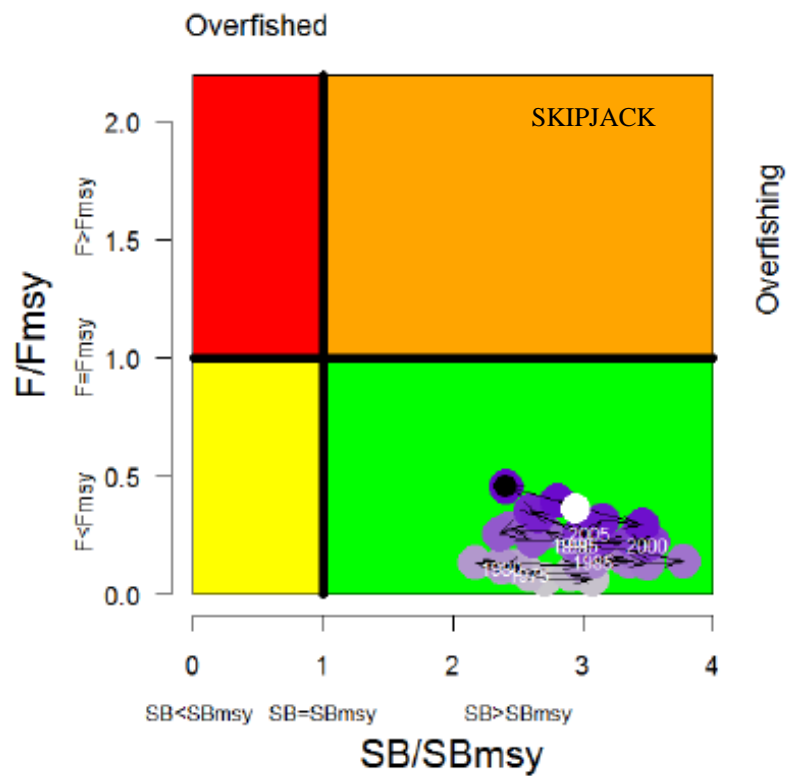
1.1.1 Bigeye tuna



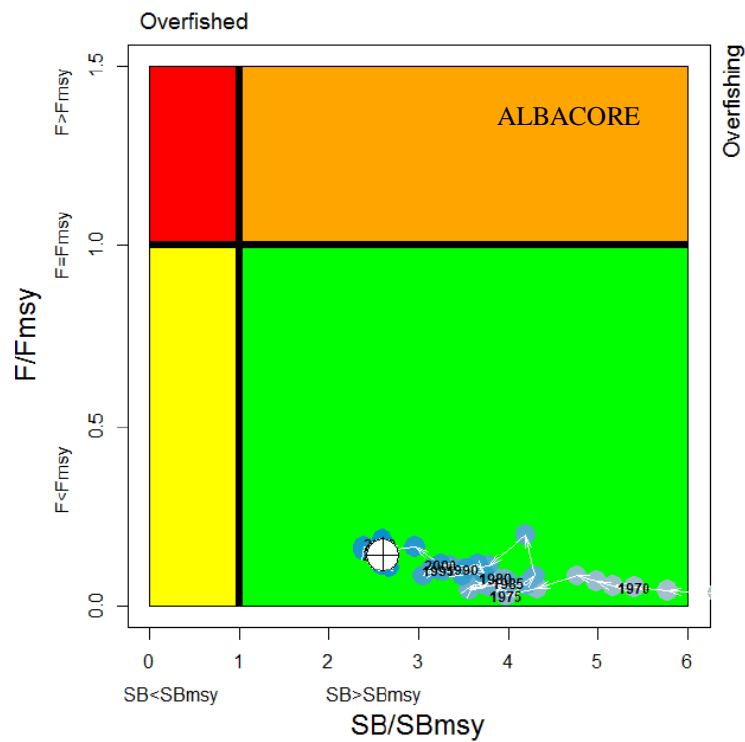
1.1.2 Yellowfin



1.1.3 Skipjack



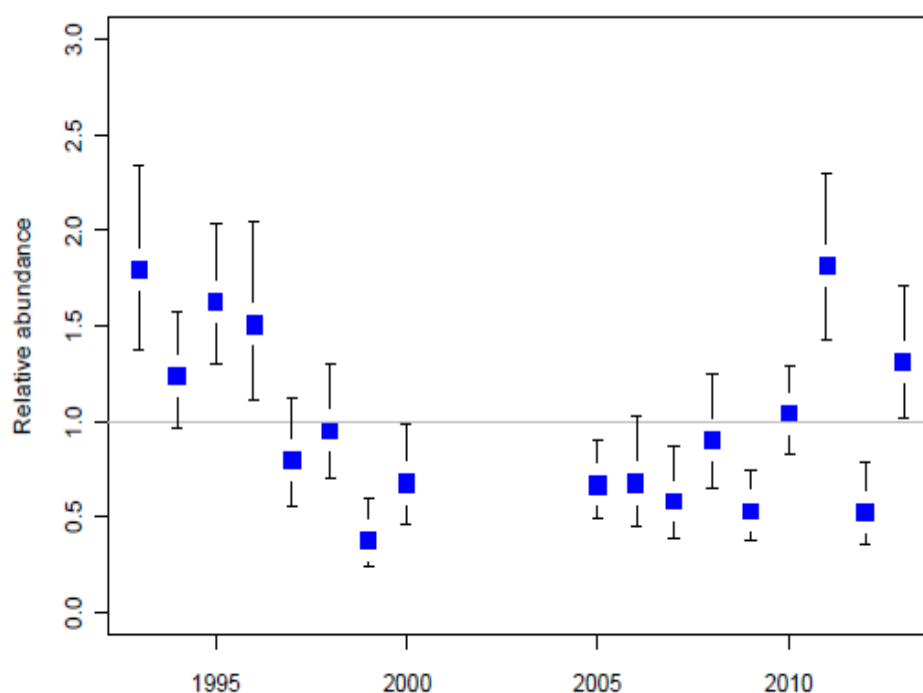
1.1.4 Albacore



1.1.5 Southern Bluefin Tuna

For southern bluefin tuna, the CCSBT has agreed to a Management Procedure with the following parameters:

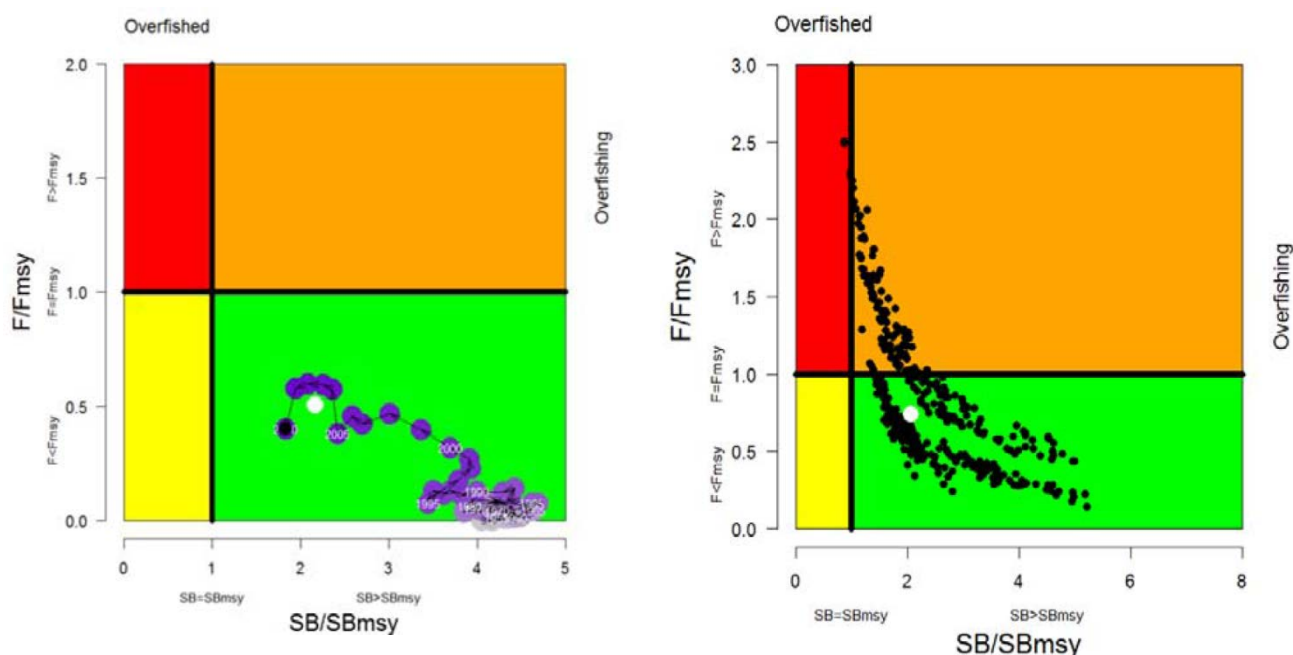
- To rebuild the status of stock to an interim building target reference point of 20% of the original spawning stock biomass by 2035;
- The MP shall be tuned to a 70% probability of achieving the interim rebuilding target;
- The minimum increase or decrease TAC change shall be 100 tonnes;
- The maximum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



Time series of relative abundance estimates for Southern Bluefin tuna from Australian Aerial Survey (with 90% confidence intervals)

1.1.6 Swordfish

- New assessment of South Pacific swordfish
- Highly sensitive to growth assumptions
- Two different growth models, Australia & Hawaii
- SC could not decide which was more reliable
- Aus data indicated overfishing but stock not overfished
- Hawaii data indicate no overfishing and stock not overfished
- Median indicates overfishing ($F_{\text{current}}/F_{\text{MSY}} = 0.74$) not occurring
- Sensitivity runs using Aus data indicate overfishing may be occurring
- Estimates of stock status are highly uncertain with respect to this assumption
- SC9 recommend precautionary approach when considering future management
- SC9 recommend no increase in fishing mortality over current (2007-2010) levels
- Recent catches between the equator and 20oS now represent largest component of catch in Region 2 (equator to 50oS; 165oE to 130oW)
- SC9 recommended developing appropriate management measures for this Region, which is not covered by CMM 2009-03



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

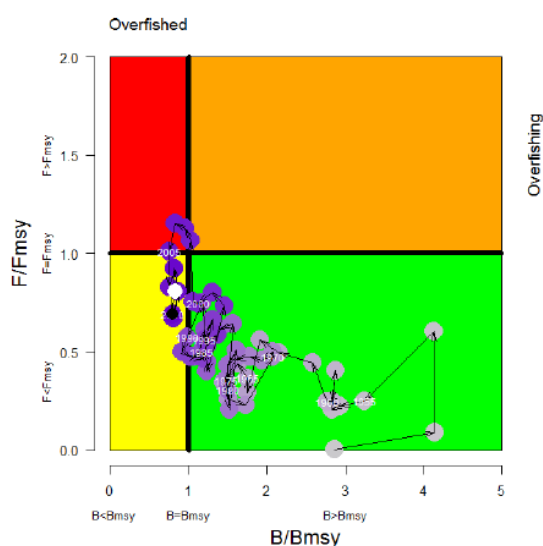
$F_{\text{Current}}/F_{\text{MSY}}$ and $SB_{\text{current}}/SB_{\text{MSY}}$ for the median of the selected uncertainty grid (white circle) and the individual uncertainty grid runs (excluding runs where the New Zealand CPUE series was used)

1.1.7 Pacific Bluefin

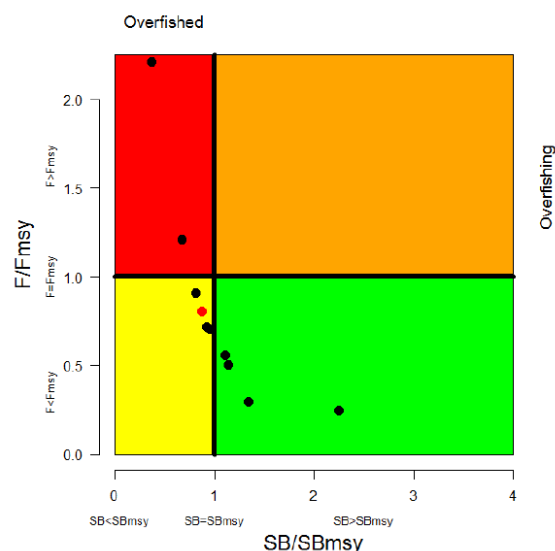
- Based on the reference point ratios, **overfishing** is occurring and the stock is **heavily overfished** (last assessment 2012)
- Concerns about stock status were reinforced at SC9, and the potential risk of decline of the spawning stock may be higher than previously thought
- SC9 could not reach consensus on management advice due to a lack of clarity as to which body can comment on the stock status and make recommendations to the Commission
- Two broadly similar statements (a majority and minority view) were put forward; both sets of advice indicate that the stock is severely overexploited and remedial action is urgently required, and recommend reductions in fishing mortality
- Disappointing that no measure has been tabled by the Northern Committee to reduce catch and effort on this stock

1.1.8 Striped Marlin

- 2012 assessment of striped marlin in the south-western Pacific Ocean (previous assessment done in 2006)
- Recent catches 20% below MSY level of 2,182 mt
- In contrast, the ‘msy-recent’ analysis calculates MSY to be 1,839 mt, which places current catches 5% below this alternative MSY level
- SC8 concluded that current levels of catch are below MSY but are approaching MSY at the recent [low] levels of recruitment estimated for the last four decades
- Overfishing is not occurring in the striped marlin stock
- Based on recent trend in spawning biomass, striped marlin is **approaching an overfished state**



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



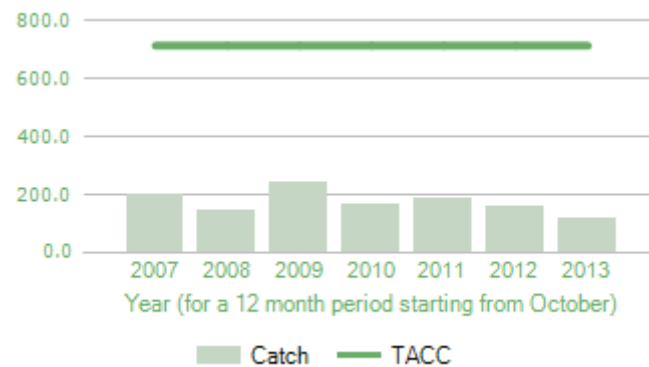
Summary of current stock status of south-west Pacific Striped Marlin (based on 2007–10) for the key model runs. Red circle represents the Ref.case run.

1.2 Catch against Total Allowable Commercial Catch (TACC)

All amounts are shown in tonnes.

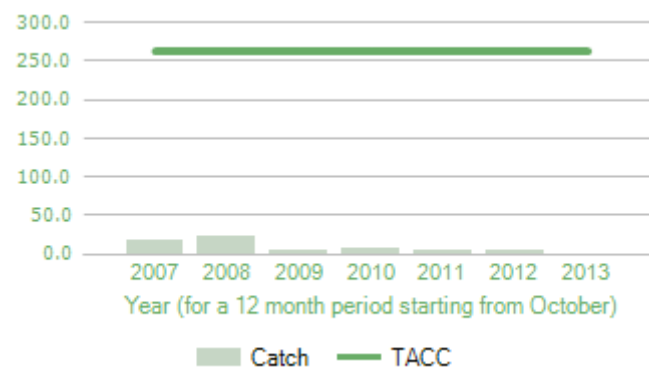
1.2.1 Bigeye (BIG)

Commercial Catch vs. Allowance - Trend



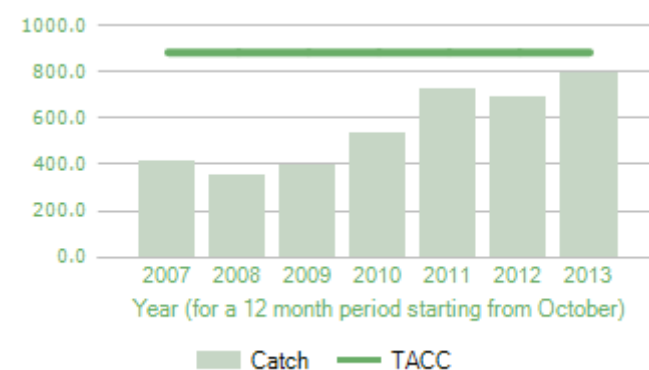
1.2.2 Yellowfin (YFN)

Commercial Catch vs. Allowance - Trend

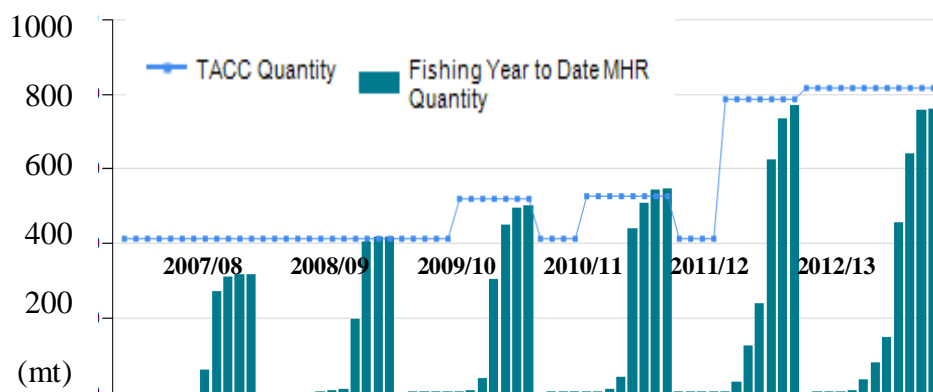


1.2.3 Swordfish (SWO)

Commercial Catch vs. Allowance - Trend



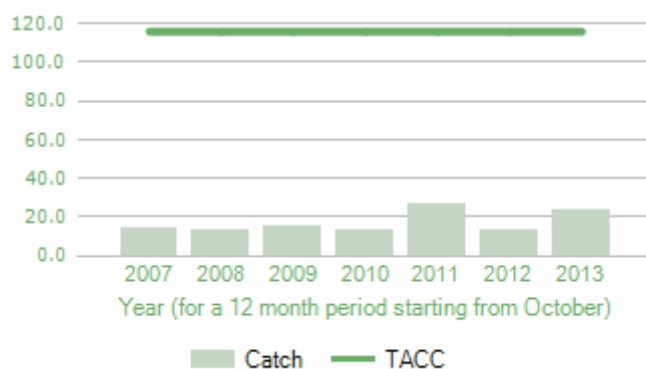
1.2.4 Southern Bluefin Tuna (STN)



Southern Bluefin tuna is represented here by a different graph that gives monthly cumulative catch against the TACC and thus illustrates in-season increases to the TACC quantity.

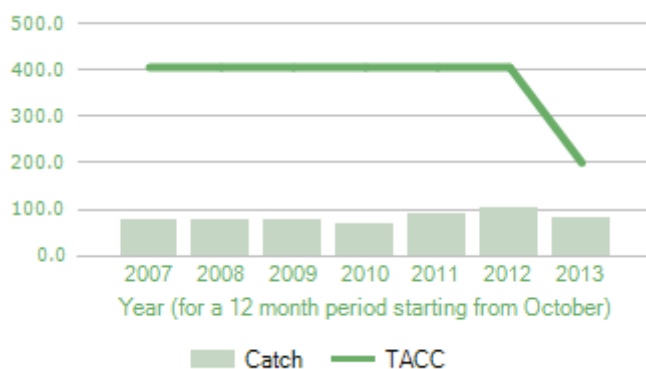
1.2.5 Pacific Bluefin Tuna (TOR)

Commercial Catch vs. Allowance - Trend



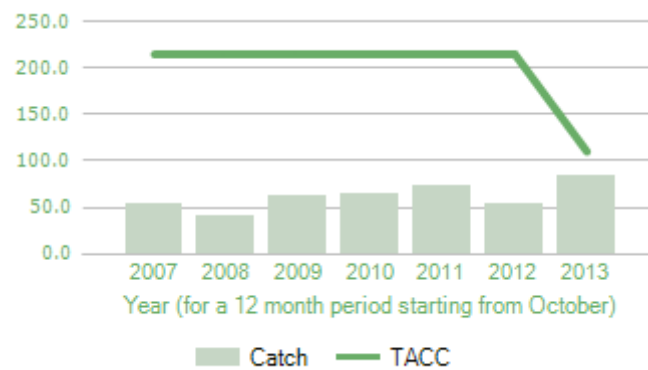
1.2.6 Mako shark (MAK)

Commercial Catch vs. Allowance - Trend



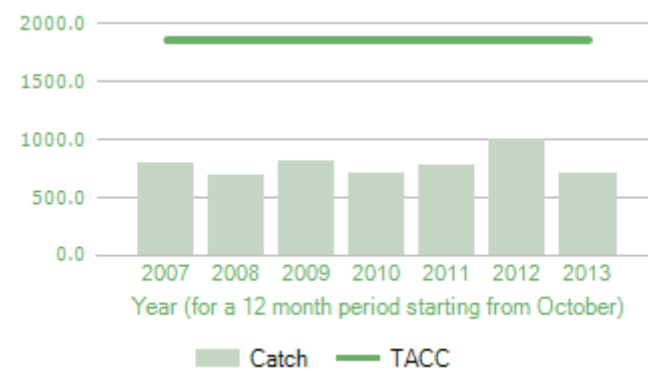
1.2.7 Porbeagle shark (POS)

Commercial Catch vs. Allowance - Trend



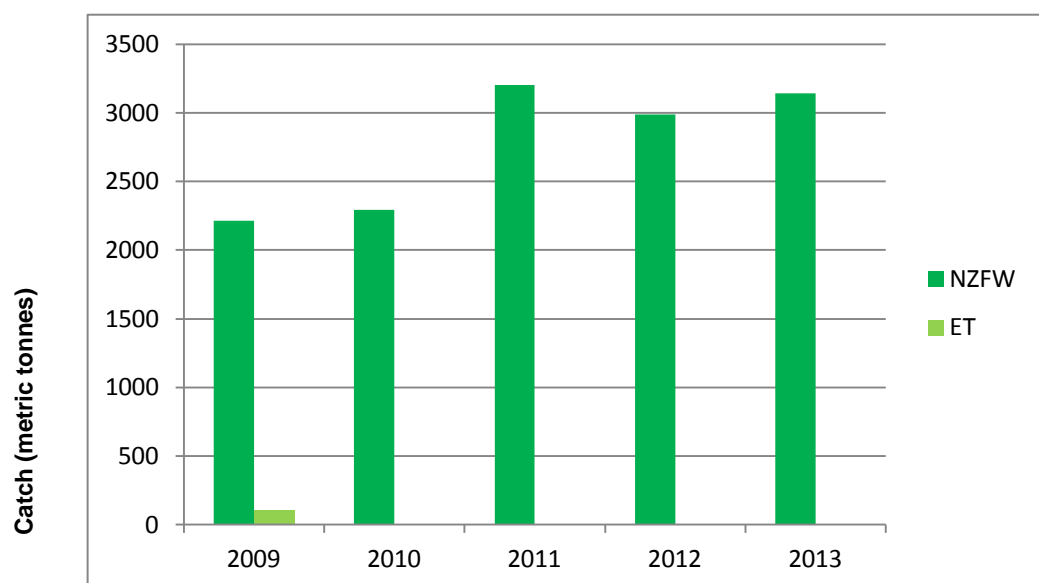
1.2.8 Blue shark (BWS)

Commercial Catch vs. Allowance - Trend



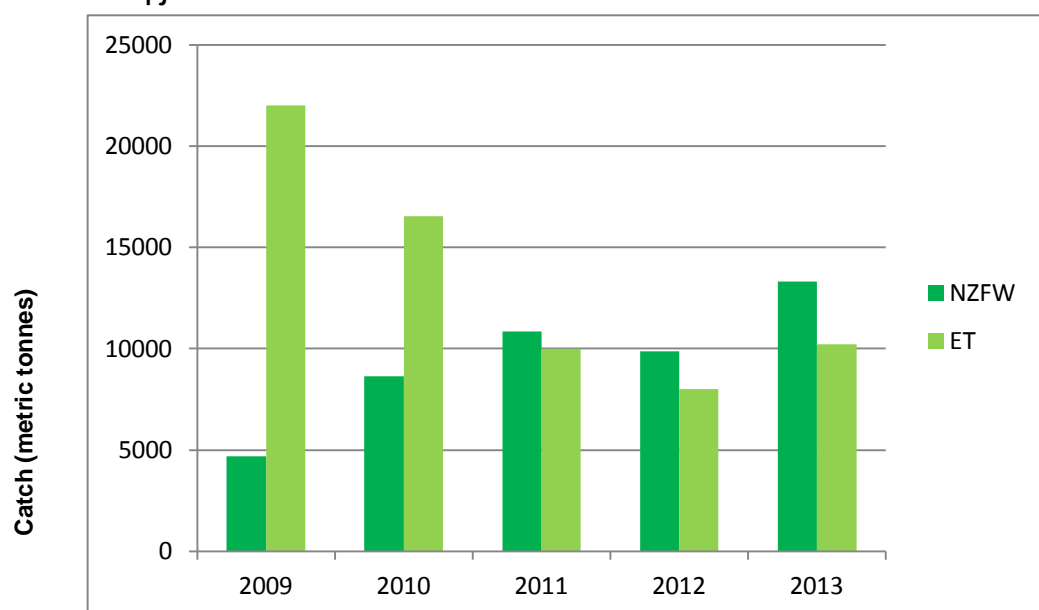
1.3 CATCHES OF NON QUOTA SPECIES

1.3.1 Albacore



ALB landed weights over the last 5 years inside New Zealand Fisheries Waters (NZFW) and outside the zone (ET)

1.3.2 Skipjack



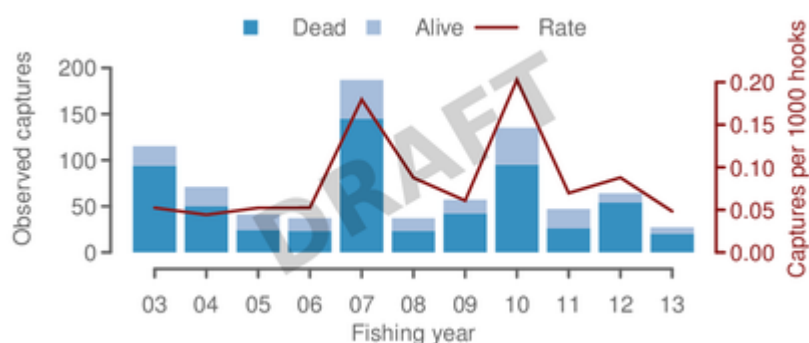
SKJ landed weights over the last 5 years inside New Zealand Fisheries Waters (NZFW) and outside the zone (ET)

2 Environmental reporting

2.1 Seabirds - surface longline fisheries

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

Observed captures of birds in surface longline fisheries – including provisional 2012-13 data



Fishing effort and observations in surface longline fisheries – including provisional 2012-13 data

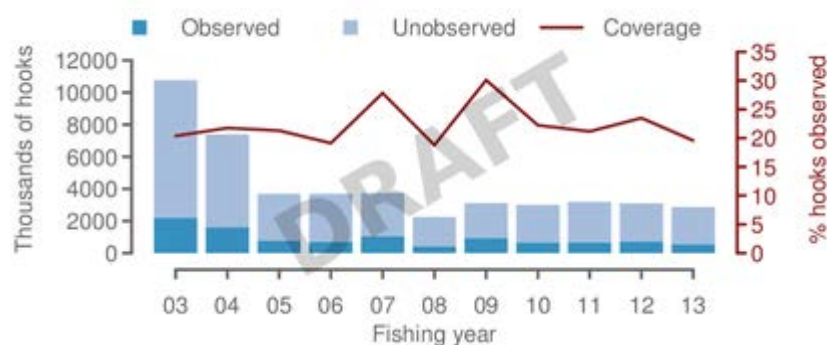
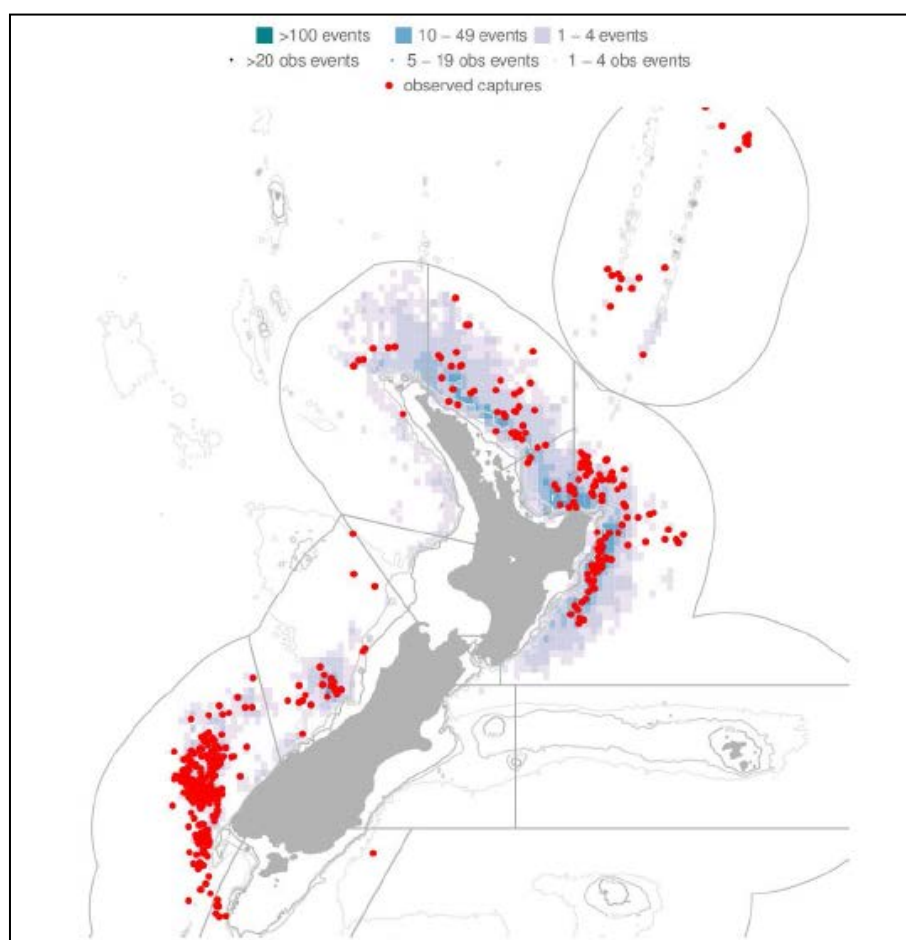


Table 2: Effort and seabird captures in SLL fisheries by fishing year. Due to Ministry for Primary Industries anonymity requirements, fishing effort is only shown if there were three or more vessels and three or more companies or persons fishing in that year.

Year	Fishing effort			Observed captures	
	All hooks	Observed hooks	% observed	Number	Rate per 1,000 hooks
2002/03	10,771,398	2,195,152	20.38	115	0.052
2003/04	7,386,424	1,607,304	21.76	71	0.044
2004/05	3,679,765	783,812	21.30	41	0.052
2005/06	3,690,659	705,945	19.13	37	0.052
2006/07	3,739,882	1,040,948	27.83	187	0.180
2007/08	2,246,189	421,900	18.78	37	0.088
2008/09	3,115,633	937,496	30.09	57	0.061
2009/10	2,995,264	665,883	22.23	135	0.203
2010/11	3,188,179	674,572	21.16	47	0.070
2011/12	3,100,027	728,190	23.49	64	0.088
2012/13	2,862,182	560,333	19.58	27	0.048

Map of SLL fishing effort and observed captures, 2003 – 2012



Fishing effort is mapped into 0.2-degree cells, with the colour of each cell being related to the amount of effort. Observed fishing events are indicated by black dots, and observed captures are indicated by red dots. Fishing is only shown if the effort could be assigned a latitude and longitude, and if there were three or more vessels fishing within a cell. In this case, 94% of the effort is shown.

Source: Aquatic Environment and Biodiversity Annual Review 2013. A summary of environmental interactions between the seafood sector and the aquatic environment.

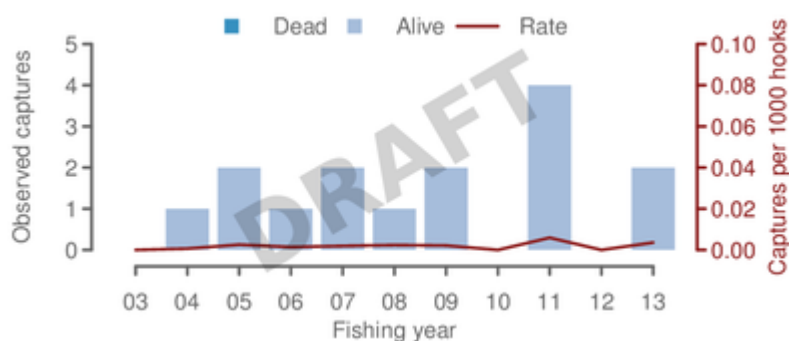
Table 3: Summary of observed captures by species (dead and alive) on SLL vessels during the 2012–13 fishing year

Common name	Scientific name	Number observed
New Zealand white-capped albatross	<i>Thalassarche cauta steadi</i>	12
Southern Buller's albatross	<i>Thalassarche bulleri bulleri</i>	10
Antipodean albatross	<i>Diomedea antipodensis antipodensis</i>	1
Campbell black-browed albatross	<i>Thalassarche impavida</i>	1
Gibson's albatross	<i>Diomedea antipodensis gibsoni</i>	1
Southern royal albatross	<i>Diomedea epomophora</i>	1
White-chinned petrel	<i>Procellaria aequinoctialis steadi</i>	1
Total		27

2.2 Turtles - surface longline fisheries

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

Observed captures of turtles in surface longline fisheries – including provisional 2012-13 data



Fishing effort and observations in surface longline fisheries– including provisional 2012-13 data

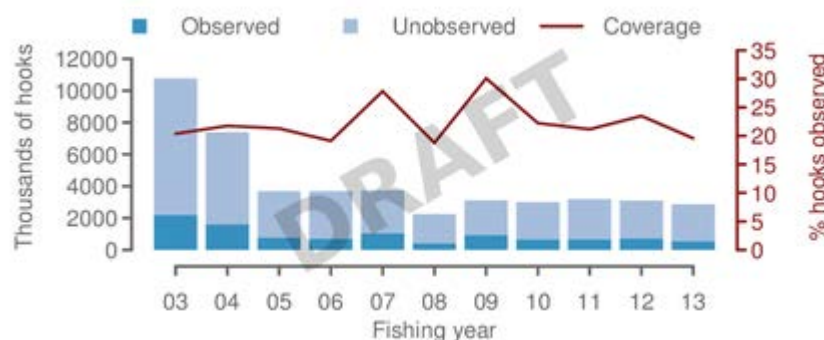


Table 4: SLL effort and turtle captures by fishing year – including provisional 2012-13 data.

Due to Ministry for Primary Industries anonymity requirements, fishing effort is only shown if there were three or more vessels and three or more companies or persons fishing in that year. For more information on the methods used to prepare the data, see [Abraham and Thompson \(2011b\)](#). With the exception of one green turtle caught in 2001, all turtles were alive on capture and were released.

	Fishing effort			Observed captures	
	All hooks	Observed hooks	% observed	Number	Rate
2002-03	10, 771, 398	2, 195, 152	20.4	0	0.000
2003-04	7, 386, 424	1, 607, 304	21.8	1	0.001
2004-05	3, 679 765	783, 812	21.3	2	0.003
2005-06	3, 690, 659	705, 945	19.1	1	0.001
2006-07	3, 739, 882	1, 040, 948	27.8	2	0.002
2007-08	2, 246, 189	421, 900	18.8	1	0.002
2008-09	3, 115, 633	937, 496	30.1	2	0.002
2009-10	2, 995, 264	665, 883	22.2	0	0.000
2010-11	3, 188, 179	674, 572	21.2	4	0.006
2011-12	3,100, 027	728, 190	23.5	0	0.000
2012-13	2, 862, 182	560, 333	19.6	2	0.004

2.3 Other non-target associated and dependent species

Source: New Zealand Annual Report to the [Western and Central Pacific Fisheries] Commission. Part 1: Information on fisheries, research and statistics: New Zealand. Available at: <http://www.wcpfc.int/system/files/AR-CCM-16%20New%20Zealand%20AR%20Part%201.pdf>

Table 5: Landed catch (t) of non-target species currently managed within the QMS that are taken in tuna fisheries within New Zealand fisheries waters. Data are provided by calendar year for 2009 - 2013 and for some species may include catches from non-tuna fisheries.

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

Table 6: Total estimated catch (numbers of fish) of common bycatch species in the New Zealand longline fishery as estimated from observer data from 2009 to 2013. Also provided is the percentage of these species retained (2013 data only) and the percentage of fish that were alive when discarded, N/A (none discarded).

Species	2010	2011	2012	2013	% retained (2013)	discards % alive (2013)
Blue shark	66113	53432	132925	158736	45.2	97.4
Lancetfish	43425	37305	7866	19172	0.1	37.6
Rays bream	20041	18453	19918	13568	97.4	4.2
Porbeagle shark	4679	9929	7019	9805	34.0	79.8
Mako shark	4490	9770	3902	3981	35.5	84.9
Moonfish	5398	3418	2363	2470	99.0	0.0
Escolar	1539	6602	2181	2088	30.2	76.3
Sunfish	3148	3773	3265	1937	2.7	100.0
Pelagic stingray	1983	4090	712	1199	1.0	97.0
Butterfly tuna	1158	909	713	1030	48.1	11.1
Deepwater dogfish	377	548	647	743	1.2	88.5
Oilfish	886	1747	509	386	26.5	72.2
Rudderfish	326	338	491	362	13.0	80.0
Thresher shark	209	349	246	256	33.3	75.0
Skipjack tuna	91	255	123	240	100.0	N/A
Dealfish	1160	223	372	237	1.7	25.1
Striped marlin	471	175	124	182	0.0	44.4
Big scale pomfret	505	139	108	67	88.2	100.0
School shark	62	49	477	21	100.0	N/A

3 Cost recovery levies

The majority of levies in 2013/14 are higher with fairly large increases in southern bluefin tuna (STN), swordfish (SWO), blue shark (BWS) and porbeagle (POS).

In the case of STN, MPI observer and compliance costs have gone up significantly and are predominantly linked to the recent increases in the TAC. Previous in-season changes would not have influenced the cost recovery calculations. There is also an increase in research costs associated with a catch-at-age project for STN (STN 2013-01) and costs associated with a Marine Mammal Risk Assessment and a Seabird Risk Assessment – both of which are charged to STN to capture the longline fisheries as a whole.

In the case of SWO actual levies remain broadly similar across MPI, Observers and Research costs but the difference is due to there being no over recovery in the prior year.

For BWS and POS, the increase is explained by two shark research projects: 1) HMS2013-02 Age, growth and reproduction of HMS sharks from observer collected samples, and 2) HMS 2013-03 Estimates of release mortality of elasmobranchs from commercial vessels.

3.1 Cost Recovery Table for HMS species

	MPI Departmental		Observers		Research		Under or (Over) Recovery					
Stock	Compliance	Registry	MPI	DOC	MPI	DOC	MPI	DOC	2011/12 total	2012/13 total	2013/14 total	Change
ALB	\$67,313	\$25,678			\$166,182	\$4,643	-\$17,513		\$187,873	\$219,661	\$246,303	\$26,642
BIG1	\$112,219	\$42,808	\$90,090	\$17,524	\$21,391	\$48,433	-\$21,167	-\$6,302	\$242,236	\$295,847	\$304,996	\$9,149
BWS1	\$10,573	\$4,033			\$109,262	\$370	\$2,021	\$33	\$40,721	\$31,680	\$126,292	\$94,612
MAK1	\$598	\$228			\$1,578	\$21	\$283	\$4	\$5,467	\$4,084	\$2,712	-\$1,372
MOO1	\$9,933	\$3,789			\$531	\$347	\$1,879	\$31	\$23,659	\$15,838	\$16,510	\$672
POS1	\$779	\$297			\$99,048	\$27	\$251	\$4	\$4,713	\$3,778	\$100,406	\$96,628
RBM1	\$11,630	\$4,437			\$622	\$407	\$2,076	\$34	\$21,911	\$17,269	\$19,206	\$1,937
SKJ	\$164,565	\$62,777	\$50,310	\$9,020	\$0	\$880	-\$60,439	-\$9,900	\$151,270	\$360,702	\$217,213	-\$143,489
STN1	\$255,103	\$97,315	\$259,820	\$51,526	\$63,114	\$78,525	-\$17,586	-\$8,811	\$501,455	\$405,719	\$779,006	\$373,287
SWO1	\$48,807	\$18,618	\$39,195	\$7,602	\$9,303	\$14,362	\$14,362	-\$2,722	\$142,722	\$42,527	\$149,527	\$107,000
TOR1	\$36,220	\$13,817			\$2,546	\$1,266	-\$4,881	\$113	\$117,883	\$38,301	\$49,081	\$10,780
YFN1	\$16,943	\$6,463			\$1,191	\$3,636	-\$7,666	-\$947	\$21,499	\$7,079	\$19,620	\$12,541
TOTAL	\$734,683	\$280,260	\$439,415	\$85,672	\$474,768	\$152,917	-\$108,380	-\$28,463	\$1,461,409	\$1,442,485	\$2,030,872	\$588,387
2012/13 total	\$457,773	\$207,549	\$459,475	\$83,934	\$473,929	\$100,054	-\$325,659	-\$14,570				
Change	\$276,910	\$72,711	-\$20,060	\$1,738	\$839	\$52,863						

4 Operation ZODIAC Summary

July 2013

Information collected during the boarding and inspections have highlighted discrepancies with respect to catch reporting and declaration by the Chinese and Fijian flagged longline vessels.

In one instance, log sheets onboard a Chinese flagged vessel had not been completed by the vessel master for over 15 days. Serious offending was detected onboard a Fijian flagged vessel, where it was identified that the vessel had under-declared its target catch of albacore by 100%. The same vessel had also failed to declare the entire catch of shark found onboard. Fijian authorities were informed of this incident and took swift action by ordering the vessel back to port and completing an investigation. On completion of the investigation, the parent company, sanctions were applied requiring the vessel to remain in port for the next four months. Authorities also ordered the fishing company to terminate its contract with the vessel captain. There are moves underway to ensure that the vessel master cannot fish in the Fijian EEZ in the future.

MPI is now also able to make recommendations for improvements to WCPFC Conservation and Management Measures, to improve fisheries management.

MPI has gained a greater understanding of vessel operating procedures and catch processes within the fishery. Raising these identified issues at the upcoming WCPFC forum will strengthen New Zealand's reputation for support to international fisheries management; however there will still be a requirement for New Zealand to work closely with other Commission members to make progress on the issues.

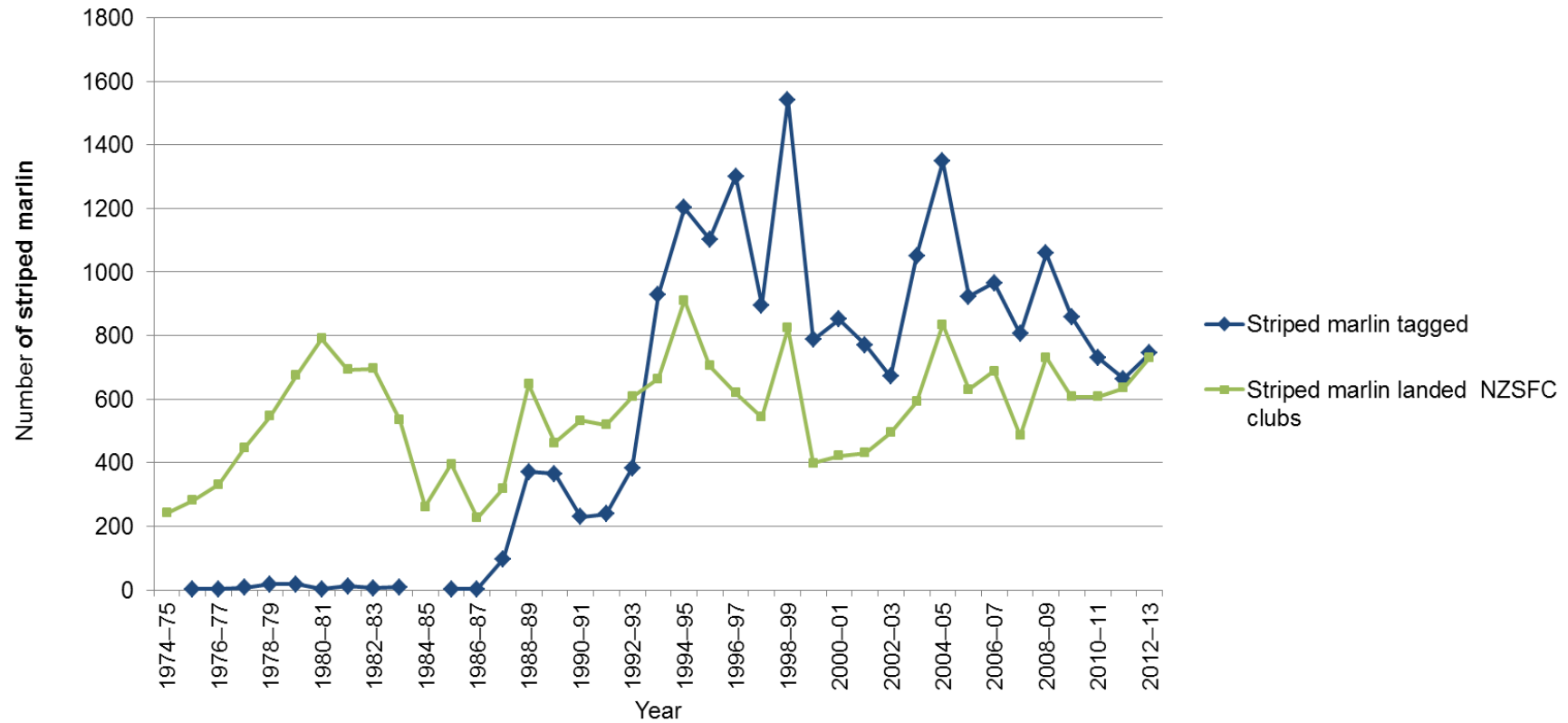
5 Non-commercial monitoring

5.1 Shark tagging rates and numbers from the New Zealand Gamefish Tagging Programme

There is an increased numbers of tagged and recaptured makos, and similar levels for blue shark. Both marlins and spearfish are below the ten year average. Swordfish and billfish are above the ten year average.

											Average
Mako	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2003 to 2013
NZ EEZ	188	241	193	150	297	285	494	609	488	524	347
% tagged	70	80	81	82	87	87	90	92	92	94.3	86
Recaptures	9	6	3		2	5	7	7	8	11	6
Blue shark	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2003 to 2013
NZ EEZ	106	102	95	157	108	101	73	128	142	148	116
% tagged	85	80	76	91	90	89	92	91	90	93	88
Recaptures	2	2	1	2	3	4	3	3	4	3	3
NZGTP											Average
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2003 to 2013
Striped marlin	1051	1348	923	965	806	1058	858	731	663	745	934
Blue marlin	8	29	17	26	29	24	32	78	50	17	31
Shortbill spearfish	8	7	11	14	8	5	15	21	5	0	9
Swordfish	2	6	5	16	25	24	18	37	50	33	22
Billfish recaptures	5	4	2	1	4	3	2	1	1	4	3

5.2 Striped Marlin Recreational Catch



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