



Marine Stewardship Council 2nd Surveillance Report

For The

CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery

Facilitated By the

Canadian Highly Migratory Species Foundation (CHMSF)

Assessors: Ivan Mateo, Lead Assessor
Max Stocker, Assessor

Certificate Code: F-SAI-002
Report Code: MSC001-02/SURO1
Report Date: 17th November 2017

SAI Global

3rd Floor, Block 3,
Quayside Business Park,
Mill Street,
Dundalk,
Co. Louth,
Ireland.
T + 353 42 932 0912
F + 353 42 938 6864
www.saiglobal.com/



Foreword

The Canadian Highly Migratory Species Foundation (CHMFS) North Pacific Albacore Tuna Fishery was certified by SAI Global (Formerly known as Global Trust) in March 2010 against the MSC Principles and Criteria for Sustainable Fishing and reassessed again in May 2015. There were two conditions raised during the first assessment (PI 1.1.2, 1.2.2) that remained open after the conclusion of the reassessment of this fishery. In view of the foregoing, SAI Global has determined that the 2nd Annual Surveillance Audit of the (CHMFS) North Pacific Albacore Tuna reassessment have to be conducted as a Level 6 (default) fishery surveillance audit in accordance with the provisions of the MSC Fisheries Certification Requirements v.2.0 (effective 1 April 2015) 7.24.2 1,7.24.2 2. A notification to this effect was published on the MSC website on 6th July 2017.

Table of Contents

Foreword	2
Table of Contents.....	3
Glossary	4
1 Executive Summary.....	6
2 General Information	8
3 Introduction	9
4 Background	10
4.1 Fishery Observations.....	10
4.2 Scientific base of information including stock assessment	13
4.2.1 Stock Assessment and Information	13
4.2.2 2017 North Pacific Albacore Stock Status.....	14
4.2.3 Conservation Information	21
4.3 Harvest Strategy and Harvest Control Rules (HCR)	22
4.4 Research Update	24
4.5 Harmonisation.....	25
4.6 Relevant changes to Legislation and Regulations	25
4.7 Relevant changes to the Management Regime	25
4.8 Changes to personnel in Science and Management	25
4.9 The General Conditions of Certification	26
4.10 The Specific Conditions of Certification	27
5 Assessment Process	28
5.1 Summary of stakeholder and client meetings.....	29
6 Results.....	31
6.1 Evaluation tables for Conditions during the 2 nd Surveillance Audit 2017.	31
6.1.1 Condition 1	31
6.1.2 Condition 2	34
6.2 Summary of Status of Conditions.....	38
6.3 Revised milestones.....	38
7 Conclusion	39
7.1 Outcome of SAI Global Decision.....	39
8 References	40
9 Appendices.....	43
9.1 Additional details on conditions/actions/results	43
9.2 Appendix 1. Re-scoring evaluation tables	45
9.3 Appendix 2. Stakeholder submissions.....	46
9.4 Appendix 5. Revised Surveillance Program (if necessary).....	51

Glossary

ALBWG	Albacore Working Group of ISC
B_{lim}	Stock size below which the recruitment would be impaired
B_{MSY}	Stock size that can produce maximum sustainable yield when it is fished at a level equal to F_{MSY}
CAB	Conformity Assessment Body
CHMSF	Canadian Highly Migratory Species Foundation
C&P	Conservation and Protection (DFO Enforcement Unit)
CoC	Chain of Custody
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPUE	Catch per Unit Effort
CR	Certification Requirements
DFO	Fisheries and Oceans Canada
DMP	Dockside Monitoring Program
EAM	Ecosystem Approach Management
EEZ	Exclusive Economic Zone
ESBA	Ecologically and Biologically Significant Areas
ETP	Endangered, Threatened and Protected species
F	Fishing Mortality Rate
F_{lim}	Fishing mortality rate that causes a stock to fall below B_{lim}
F_{MSY}	Fishing mortality rate at the level that would produce maximum sustainable yield from a stock that has size of B_{MSY}
FAO	United Nations Food and Agriculture Organization
IATTC	Inter-American Tropical Tuna Commission
IFMP	Integrated Fisheries Management Plan
ISC	International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean
HCR	Harvest Control Rule
LRP	Limit Reference Point
MPA	Marine Protected Area
MSC	Marine Stewardship Council
MSY	Maximum Sustainable Yield, it is the largest average catch that can be continuously taken from a stock under existing environmental conditions
PA	Precautionary Approach
P1	MSC Principle 1
P2	MSC Principle 2
P3	MSC Principle 3
PI	MSC Performance Indicator
PNCIMA	Pacific North Coast Integrated Management Area
SAR	Science Advisory Report
SARA	<i>Species At Risk Act</i>
SFF	Sustainable Fisheries Framework
SG	Scoring Guidepost

SPC	Secretariat of Pacific Community
SSB	Female spawning biomass
UoA	Unit of Assessment
UoC	Unit of Certification
WCPFC	Commission for the Conservation and Management of Highly Migratory Fish

1 Executive Summary

This report contains the findings of the 2nd surveillance audit in relation to the Canadian Highly Migratory Species Foundation (CHMSF) certificate of the CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery.

The 2nd surveillance audit focused on any changes to the fishery and its management since the 1st surveillance audit in July 2016 (Mateo and Stocker, 2016) and the re-certification (Criquet, Mateo and Stocker, 2015), and monitoring continued compliance with the MSC Principles and Criteria. Also, the assessment team evaluated progress against the 2 conditions (PIs PI No. 1.1.2 Reference Points, and PI No. 1.2.2 Harvest Control Rules).

SAI Global determines that:

- **The CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery, even though milestone time frames for Conditions 1 and 2 for the 2nd surveillance audit have not been reached, continues to operate a well-managed and sustainable fishery and therefore, continued certification to the MSC Principles and Criteria for Sustainable Fishing is awarded. Given that conditions are behind target the assessment team formulated a revised action where the conditions need to be met for next surveillance audit.**

Table 1 summarizes conditions status, Performance Indicator (PI) and Principle score changes.

Table 1. Summary of Assessment Conditions

Condition number	Performance indicator (PI)	Status	PI original score	PI revised score
1	1.1.2	Behind target	70	65*
2	1.2.2	Behind target	60	Not revised

* Score revised in 2016 to 65.

On behalf of the MSC client, the Canadian Highly Migratory Species Foundation (CHMSF), SAI Global would like to extend thanks to the management organisations and stakeholders of the CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery who took part in this surveillance audit.

- **Lead Assessor:** Dr. Ivan Mateo is a fishery assessment officer for SAI Global and an approved MSC Fishery Team Leader.
- **Assessor:** Dr. Max Stocker is a contractor for SAI Global with extensive experience in fisheries science, he held the position of research scientist with DFO at the Pacific Biological Station conducting population dynamic studies, conducting peer reviewed stock assessments of many marine species, and communicating results to fisheries managers and stakeholders.

Both Ivan and Max were part of the re-assessment team. Skills and experience are summarized below.

Dr. Ivan Mateo

Dr. Mateo has over 20 years' experience working with natural resources population dynamic modelling. His specialization is in fish and crustacean population dynamics, stock assessment, evaluation of management strategies for exploited populations, bioenergetics, ecosystem-based assessment, and ecological statistical analysis. Dr. Mateo received a Ph.D. in Environmental Sciences with Fisheries specialization from the University of Rhode Island. He has studied population dynamics of economically important species as well as candidate species for endangered species listing from many different regions of the world such as the Caribbean, the Northeast US Coast, Gulf of California and Alaska. He has done research with NMFS Northeast Fisheries Science Centre' Ecosystem Based Fishery Management on bio-energetic modelling for Atlantic cod. He also has been working as environmental consultant in the Caribbean doing fieldwork and looking at the effects of industrialization on essential fish habitats and for the Environmental Defence Fund developing population dynamics models for data poor stocks in the Gulf of California. Recently Dr. Mateo worked as National Research Council postdoc research associate at the NOAA National Marine Fisheries Services Ted Stevens Marine Research Institute on population dynamic modelling of Alaska sablefish.

Dr Max Stocker

Dr. Stocker is a scientist with over 30 years of extensive experience in fisheries science. Dr. Stocker held the position of research scientist with DFO at the Pacific biological Station conducting population dynamic studies, conducting peer reviewed stock assessments of many marine species, and communicating results to fisheries managers and stakeholders. He authored and co-authored over 90 scientific papers and reports. In 2007-07 he acted as marine fisheries consultant under contract with Fisheries and Oceans Canada (DFO) to provide scientific advice on highly migratory species in the Pacific Ocean. He was the lead Canadian scientist for highly migratory species for the Western and Central Pacific Fisheries Commission (WCPFC) and the Inter-American Tropical Tuna Commission (IATTC).

2 General Information

Fishery name	CHMSF Albacore Tuna (<i>Thunnus alalunga</i>) North Pacific Fishery		
Unit(s) of assessment	Species: <i>Thunnus alalunga</i> , Albacore tuna Geographical Area: Canadian EEZ, U.S. EEZ and the North Pacific Ocean. Method of Capture: Troll and jig Client Group: Canadian Highly Migratory Species Foundation (CHMSF) Other eligible fishers: There are no other eligible fishers.		
Date certified	9 th June, 2015	Date of expiry	8 th June 2020
Surveillance level and type	Surveillance level 6 (Default Surveillance), on-site surveillance audit.		
Date of surveillance audit	Announcement on 6 th July 2017; and site visit was on 22 nd August.		
Surveillance stage (tick one)	1st Surveillance		
	2nd Surveillance	X	
	3rd Surveillance		
	4th Surveillance		
	Other (expedited etc.)		
Surveillance team	Lead assessor: Dr Ivan Mateo Assessor: Dr Max Stocker		
CAB name	SAI Global		
CAB contact details	Address	3rd Floor, Block 3, Quayside Business Park, Mill Street, Dundalk, Co. Louth, Ireland	
	Phone/Fax	+353 (0) 42 932 0912	
	Email	ruth.o'connell@saiglobal.com	
	Contact name(s)	Ruth O'Connell	
Client contact details	Address	4829 Maplegrove Street Victoria, BC Canada, V8Y 3B9	
	Phone/Fax	(250) 658-0179	
	Email	clayton@ieccorporate.com	
	Contact name(s)	Lorne Clayton	

3 Introduction

This report sets out the results of the 2nd surveillance audit in relation to the Canadian Highly Migratory Species Foundation (CHMSF) certificate of the CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery.

To be awarded an MSC certificate for the fishery, the applicants agreed in a written contract to develop an action plan for meeting the required 'Conditions' against the performance indicators that scored below 80% in the initial assessment. Action Plans for each Condition were submitted by each fishery client and these were approved by SAI Global as the certification body of record.

The applicant also agreed in a written contract to be financially and technically responsible for surveillance visits by an MSC accredited certification body, which would occur at a minimum of once a year, or more often at the discretion of the certification body (based on the applicant's action plan or by previous findings by the certification body from annual surveillance audits or other sources of information).

Announcement of Surveillance Audit

An announcement of the surveillance site visit was published on the MSC website on the 6th July 2017 to provide an opportunity to stakeholders to meet with or submit information on the fishery to the assessment team. Additionally, written notification was sent to the list of stakeholders representing the consultation plan during the initial assessment of this fishery and in many cases follow up mails were also made to ensure that stakeholders had been provided with sufficient opportunity to participate in consultation.

Table 7 provides a list of the stakeholders and management organizations engaged in the process either through meetings, conference call or submission of information. These consultations focused on the questions and evidence that demonstrates the performance of the fishery throughout the year and measures that supported the fulfilment of the Conditions of Certification placed upon the Canadian Highly Migratory Species Foundation (CHMSF) at the re-certification decision.

Meetings were held with the following management and scientific organizations responsible for the CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery:

- **Fisheries and Oceans Canada (DFO), Pacific Region**
- **NOAA National Marine Fisheries Service (NMFS) La Jolla**
- **International American Tropical Tuna Commission (IATTC)**
- **British Columbia Ministry of Agriculture**

A number of scientific and meeting reports were also examined by the surveillance team in producing this report, as detailed in the information sources section.

4 Background

4.1 Fishery Observations

In total 64,239 t of North Pacific albacore were caught in 2015. Of the 64,239 t caught, 4,391 t were caught by 164 vessels that are members of the client group (Holmes and Zhang, 2017). Table 2 details the total catch, and the UoA and UoC shares of the catch as well as total catch by the UoC (i.e., the total certified catch in 2016).

Table 2. TAC and Catch Data.

Total North Pacific albacore tuna catch (Note – no TAC is applied)	Year	2015	Amount	64,239 t (ISC, 2017d)
Total UoA catch of North Pacific albacore tuna (Note – no TAC)	Year	2015	Amount	4,391 t
Total UoC catch of North Pacific albacore tuna (Note – no TAC)	Year	2016	Amount	2,842 t
Total green weight catch by UoC	Year (most recent)	2016	Amount	2,842 t
	Year (second most recent)	2015	Amount	4,391 t

In 2015, the Canadian fleet of 164 vessels targeted juvenile North Pacific albacore tuna (NPALB) exclusively and operated primarily in the coastal waters of Canada and the United States. Provisional 2016 estimates of catch and effort are 2,842 t and 5,359 vessel-days, respectively, which represent a 35% decrease in catch and 2.2% increase in effort relative to 2015. Catch and effort were split primarily between Canadian waters (55% of the catch and 64% of the effort) and US waters (44% of the catch and 35% of the effort) while the remaining catch and effort occurred in adjacent high seas waters. About 96% of the catch occurred in a sea surface temperature band of 15-18 °C. Forty-eight (48) vessels measured 14,189 fork lengths on 115 trips in 2016 for a sampling rate of 3.2% of the reported catch. Fork lengths (FL) ranged from 47 to 94 cm and were dominated by a single mode at 68-71 cm FL corresponding to 2-year old fish. The Canadian troll fishery continues to be largely coastal in its operations, occurring almost exclusively within the exclusive economic zones of Canada and United States in 2016 (Holmes and Zhang, 2017).

The Canadian troll fleet operated within a 12° latitudinal band between 42 and 54°N within the EEZs of Canada and the United States in 2016 (Fig. 1), where more than 99% of the 2015 fishing effort and catch occurred. This coastal distribution is consistent with the pattern of operation observed in the last decade, although the proportion of effort and catch occurring within United States EEZ waters is lower (35% and 44%, respectively) than average (66% of effort and catch) for the 1995 to 2011 period. This reduction in fishing and catch relative to historical levels is the result of the fishing regime in the bilateral Albacore Tuna treaty negotiated for 2013 and adopted for a three-year period beginning in 2014 and renewed for the 2017-2020 period. The Canadian fishery operated exclusively within the Inter-American Tropical Tuna Commission (IATTC) convention area east of 150°W and north of the equator. No effort or catch were made in the Western and Central Pacific Fisheries Commission (WCPFC) convention area west of 150°W in 2016, continuing a trend that began in 2005 of concentrating effort and catch in the eastern Pacific Ocean (EPO) (Holmes and Zhang, 2017).

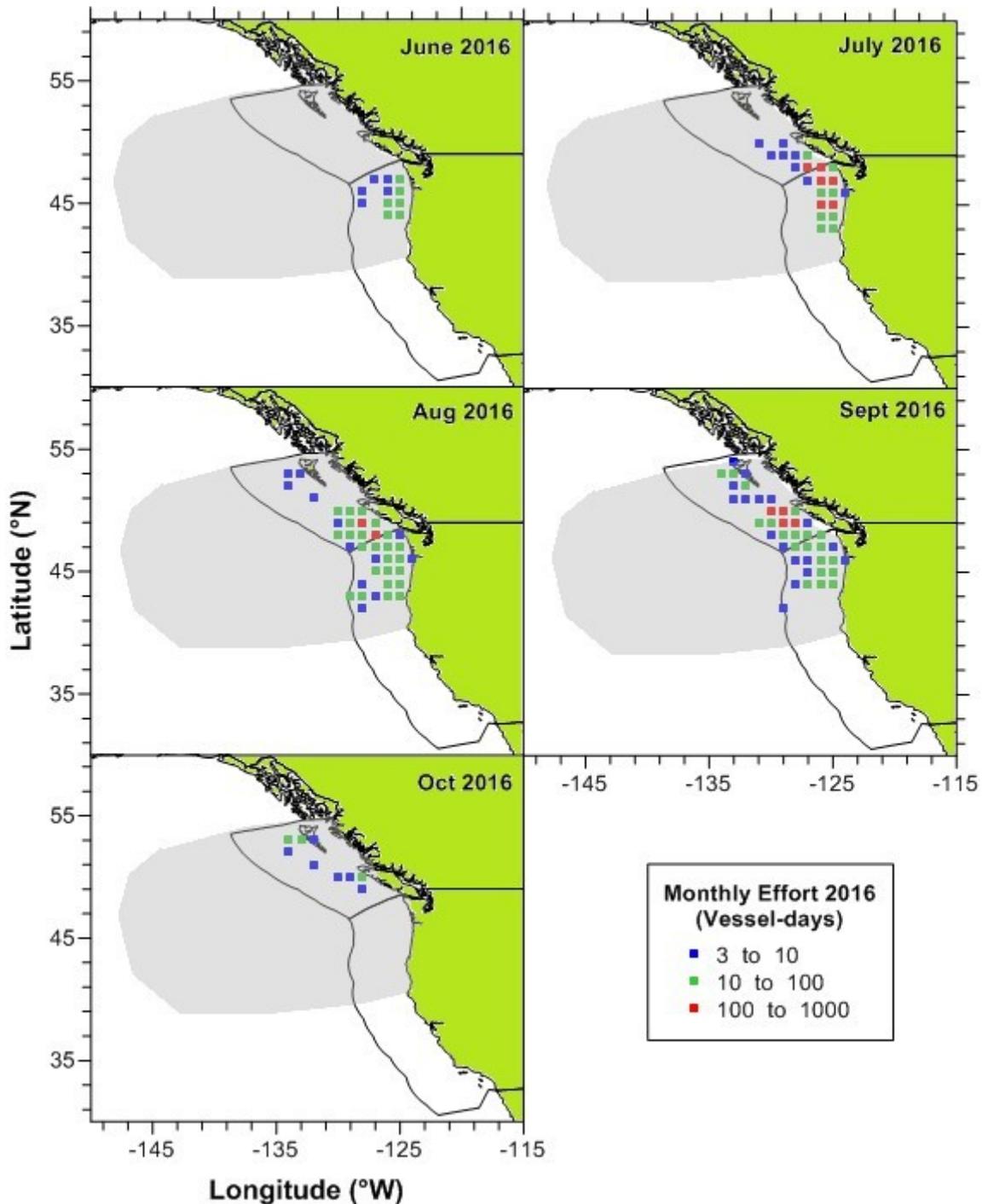


Figure 1. Monthly spatial distribution of effort by the Canadian Albacore Tuna troll fishery in 2016. Data are plotted on $1^{\circ} \times 1^{\circ}$ strata with symbols located on the bottom-right corner of each stratum. Strata in which fewer than three vessels reported are not shown. Grey area is the approximate operational area of the Canadian fishery in 2016 (Holmes and Zhang, 2017).

Forty-eight (48) vessels of the Canadian fleet measured 14,189 fork lengths on 115 trips in 2016 (Fig. 2), resulting in measurements from 3.2% of the reported catch. The majority of measurements are of fish caught in the Canadian EEZ (80%), followed by the United States EEZ waters (9.5%) and the high seas (0.5%). Albacore in the Canadian catch ranged from 47 cm to 94 cm fork length (FL) in size (Fig. 2) and are dominated by a single mode at 68-71 cm FL in all three fishing zones. A smaller secondary mode between 79 and 83 cm FL is visible in the size composition data from the Canadian and US EEZs. The primary mode corresponds to 2-year old fish while the secondary mode may be 3-year old fish (Holmes and Zhang, 2017).

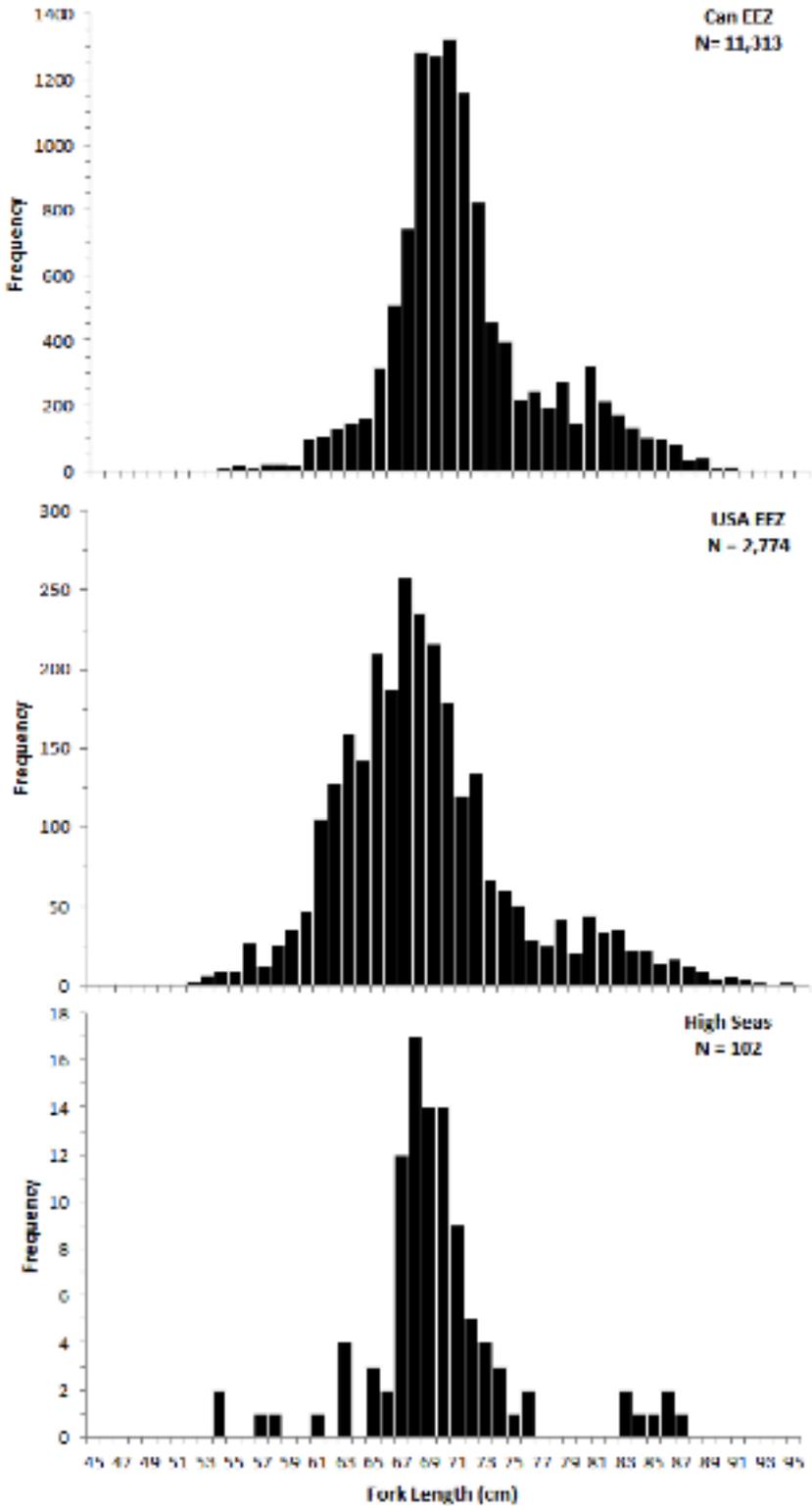


Figure 2. Measured fork lengths of North Pacific Albacore Tuna harvested by the Canadian troll fishery in 2016. Total sample is 14,189 fish (Holmes and Zhang, 2017).

4.2 Scientific base of information including stock assessment

4.2.1 Stock Assessment and Information

In 2017 the Albacore Working Group (ALBWG) of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) published a new stock assessment for albacore (ISC, 2017a). The 2017 albacore stock assessment was carried out at the Southwest Fisheries Science Center in La Jolla, California from April 11-19, 2017 (ISC, 2017a, b). The previous stock assessment was conducted in 2014 (ISC, 2014). The ALBWG held a stock assessment preparatory workshop in November 2016 in Nanaimo, BC, Canada (ISC, 2017c).

The 2017 albacore stock assessment was carried out using fishery data through 2015 and using the Stock Synthesis (SS) modelling platform version 3.24ab (Methot, 2000, Methot and Wetzel, 2013). The ALBWG developed a sex-specific, length-based, age-structured, forward simulating, fully-integrated, statistical model. The assessment assumes a single well-mixed stock of albacore in the North Pacific Ocean (ISC, 2017a). It is important to note that for the 2017 assessment SS could model sex-specific growth but fit to non-sex-specific observations (ISC, 2017a).

The ALBWG made three major changes to the base case model compared to the 2014 assessment: 1) Most importantly, a new procedure was used to standardize the Japanese longline abundance index (1996 – 2015) used to indicate trends in adult albacore abundance and the results represent a substantial improvement relative to 2014 and earlier assessments. This new index had good contrast and, based on Age-Structured Production Model (ASPM) diagnostic analyses (Minte-Vera and Maunder, 2016), informative on both population trend and scale; 2) the start year of the base case model was changed from 1966 (in 2014) to 1993 (in 2017). This change eliminated the influence of poorly fit size composition data from the Japanese longline fleets in 1975 – 1992, and eliminated the conflict between these size composition data and the primary adult albacore indices; and 3) previous assessments, assumed the instantaneous rate of natural mortality (M) to be 0.3 y^{-1} for both sexes at all ages. The basis for this assumption was reviewed and found to be poorly supported. Sex-specific M-at-age vectors were developed from a meta-analysis, with a sex-combined M that scaled with size for ages 0-2, and sex-specific M fixed at 0.39 and 0.48 y^{-1} for age-3+ males and females, respectively (ISC, 2017a).

Relevant input into the SS model included three types of data: fishery-specific catches, size composition, and abundance indices. These data were originally compiled from 1966 -2015, but ALBWG decided only to use data from 1993-2015. The geographic area of this assessment is the Pacific Ocean north of the equator (0°) to 55°N and from 120°E to 100°W . The base case model is not spatially explicit. Catch and size composition data were compiled into quarters (Jan-Mar, Apr-June, Jul-Sept, Oct-Dec) and a quarterly time step was used in the base case model (ISC, 2017a).

The ALBWG used model diagnostics to assess issues with model convergence, model structure, parameter mis-specification and data conflicts. Diagnostic tools included model conversion tests, profiles of estimated recruitment at unfished equilibrium (R_0), model fit of size composition data, model fit of abundance indices, age-structured production model (ASPM) diagnostic, and retrospective analysis (ISC, 2017a).

The ALBWG reviewed 13 abundance indices, including Japanese longline (Ochi et al., 2017). Based on this review, the ALBWG decided to use the abundance index from the Japanese longline fishery in Area 2 and Quarter 1 (S1; 1996 - 2015) as the index of adult albacore abundance (Fig. 3).

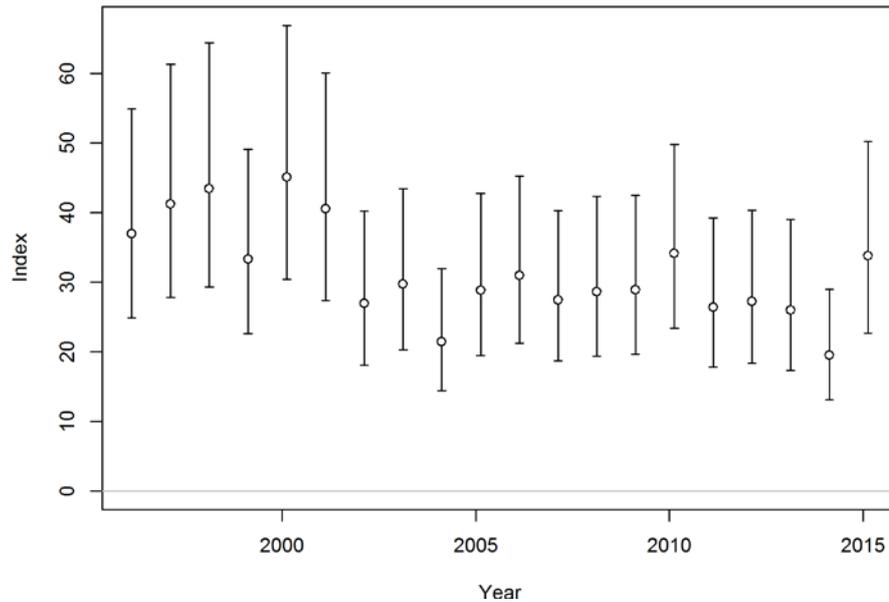


Figure 3. Trends and coefficients of variation (CVs; input + additional CVs) of the primary adult index used in the base-case model (ISC, 2017a).

4.2.2 2017 North Pacific Albacore Stock Status

The following stock status summary was adopted from the 2017 stock assessment of north Pacific albacore prepared by the ALBWG (ISC, 2017a).

During the modelling period (1993-2015), the total reported catch of north Pacific albacore reached a peak of 119,300 t in 1999 and then declined in the early 2000s, followed by a recovery in later years with catches fluctuating between 68,900 and 93,100 t in recent years (2010-2015) (Fig. 4). Surface gears (troll, pole-and-line), which primarily harvest juvenile albacore, have accounted for approximately twice as much albacore catch as longline gear (ISC, 2017a).

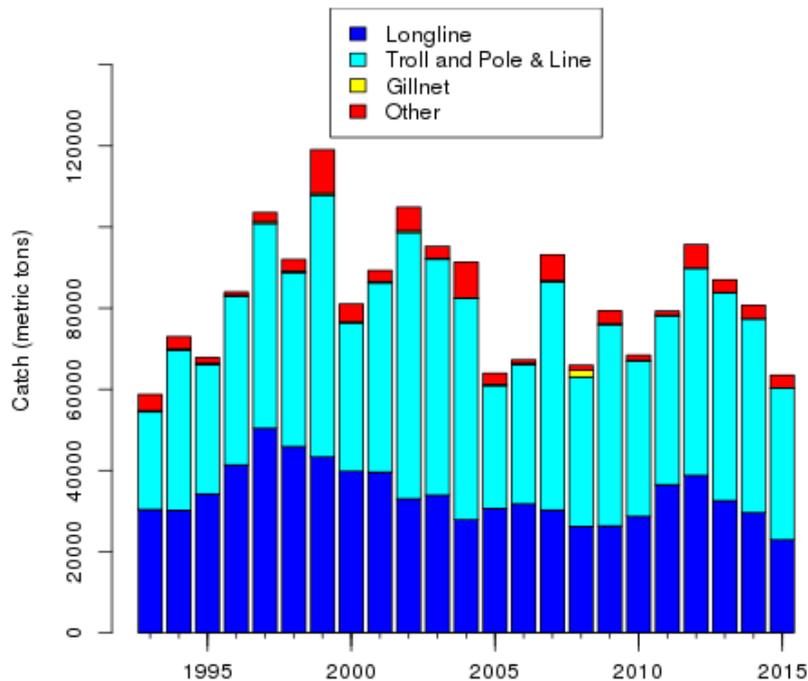


Figure 4. Estimated catches of north Pacific albacore (*Thunnus alalunga*) by major gear types (1993-2015) The other gear category includes catches with purse seine, recreational gear, hand lines, and harpoons (ISC, 2017a).

In recent years as in the past a large proportion of the albacore catch has mostly been taken by Japanese longline and pole and line vessels (Table 3).

Table 3. Percentage average annual catch by country from 2003-2012 (ISC, 2014).

Country	Average Annual Catch (2003-2012)
Japan	63.5%
USA	17.7%
Canada	7.3%
Chinese Taipei	4.9%
China	1.6%
Korea, Mexico	0.27%
Tonga, Belize, Cook Islands, Vanuatu, Vietnam, Ecuador	4.6%

Estimated total stock biomass (males and female at age-1+) shows a decline at the beginning of the time series until 2000. From 2000 - 2015 biomass has been relatively stable (Fig. 5). The total biomass estimates in the first quarter, which includes all age-1+ male and female albacore, have also fluctuated during the assessment period (1993-2015), ranging from a low of 796,877 t in 2014 to a high of 1,207,150 t in 1994 (ISC, 2017a).

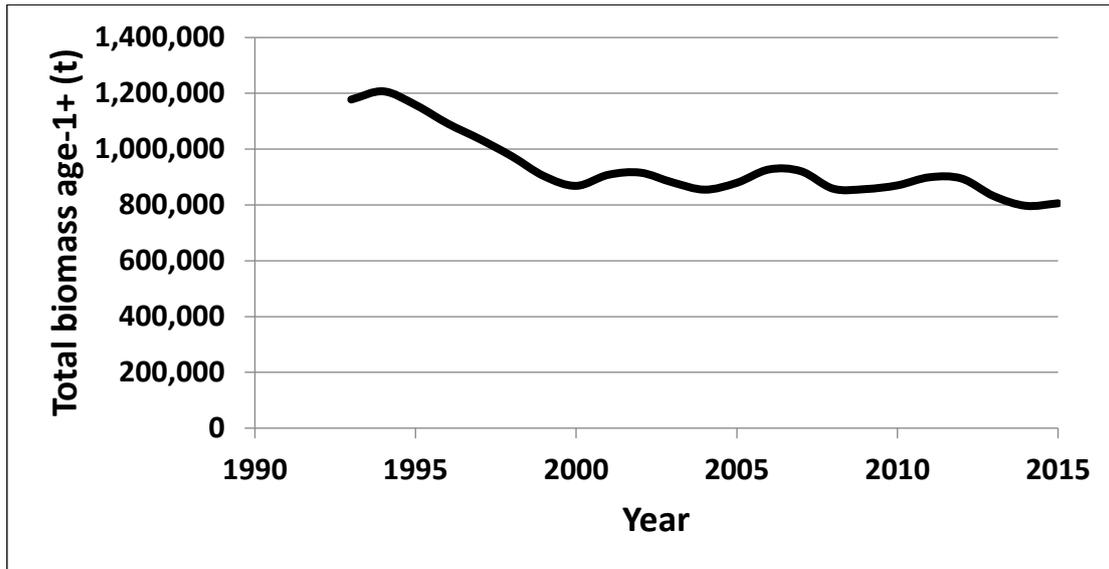


Figure 5. Maximum likelihood estimates of total age-1+ biomass of north Pacific albacore tuna (*Thunnus alalunga*) (ISC, 2017a).

The estimated female SSB fluctuated between 1993 and 2015, with a high of $139,481 \pm 55,373$ t (\pm SD) in 1995 and a low of $69,428 \pm 27,236$ t in 2003 (Fig. 6). Estimated female SSB was relatively high prior to 2000 but has fluctuated without an obvious trend since 2000. In the terminal year of the assessment (2015), female SSB was estimated to be $80,618 \pm 32,275$ t.

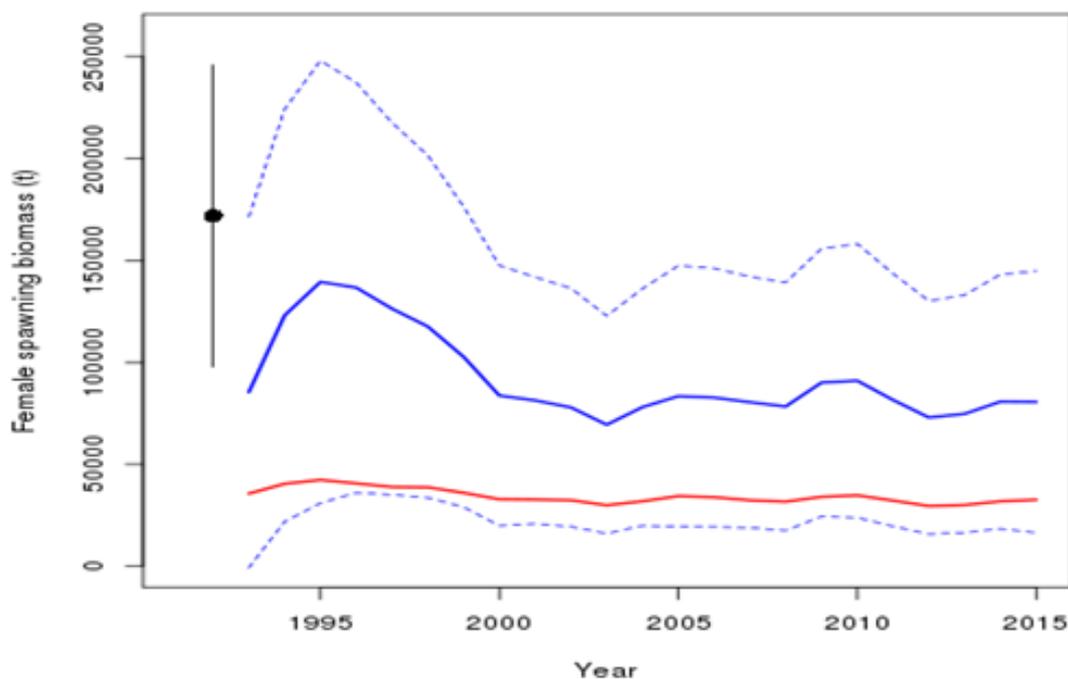


Figure 6. Maximum likelihood estimates of female spawning biomass (SSB) (solid blue line) of north Pacific albacore tuna (*Thunnus alalunga*). Dashed lines indicate 95% confidence intervals of the female SSB. Red line indicates the 20%SSB_{current}, F=0 limit reference point, which is based on dynamic SSB. Closed black circle and error bars are the maximum likelihood estimate and 95% confidence intervals of unfished female spawning biomass, SSB₀ (ISC, 2017a).

Stock status is depicted in relation to the limit reference point (LRP; $20\%SSB_{current, F=0}$) adopted by the Northern Committee of the WCPFC for the stock and the equivalent fishing intensity ($F_{20\%}$; calculated as $1-SPR_{20\%}$) (Fig. 7). The estimated SPR (spawner per recruit relative to the unfished population) in 2015 is 0.53, which corresponds to a moderate exploitation intensity (i.e., $1-SPR = 0.47$).

The Kobe plot shows that the estimated female SSB has never fallen below the LRP since 1993, albeit with large uncertainty in the terminal year (2015) estimates.

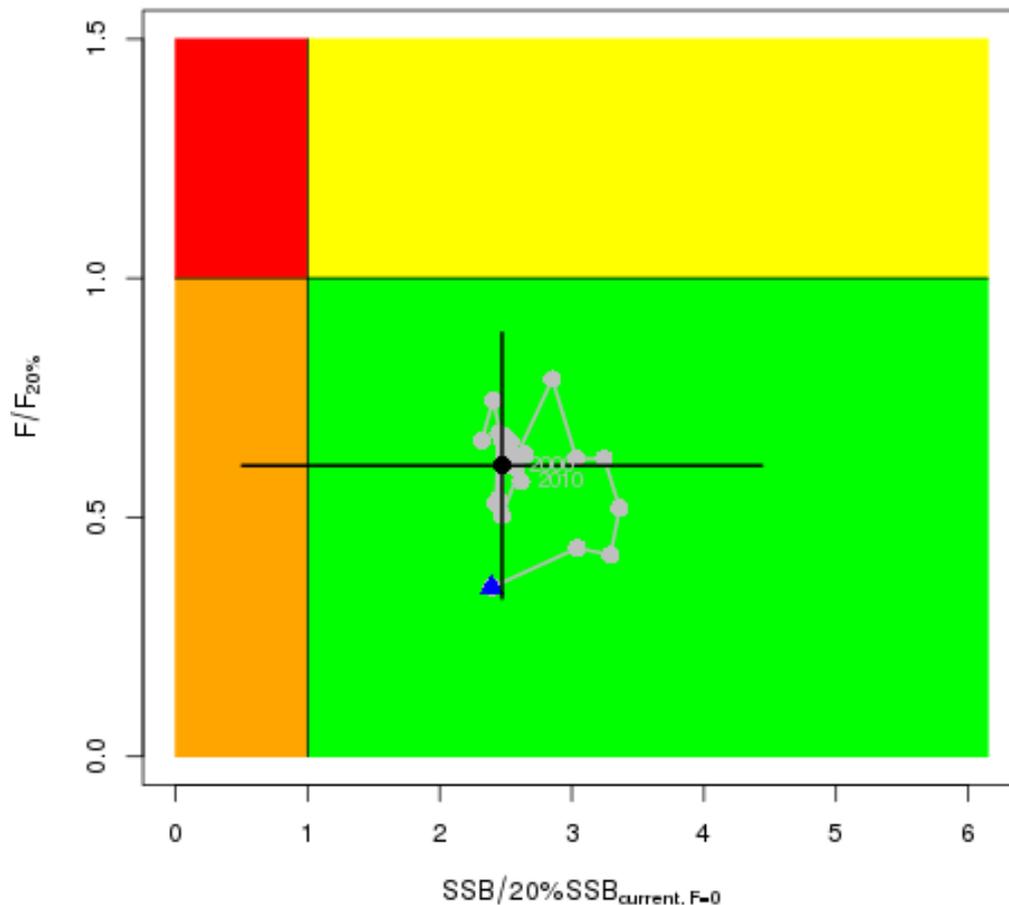


Figure 7. Kobe plot showing the status of the North Pacific albacore (*Thunnus alalunga*) stock relative to the $20\%SSB_{current, F=0}$ limit reference point and equivalent fishing intensity ($F_{20\%}$; calculated as $1-SPR_{20\%}$) over the base case modelling period (1993-2015). Blue triangle is the starting year (1993) and the black dot with 95% confidence intervals is terminal year 2015 (ISC, 2017a).

The SSB was estimated to be 80,618 t and was 2.47 times greater than the LRP threshold of 34,374 t (Table 4). Current fishing intensity, $F_{2012-2014}$ (calculated as $1-SPR_{2012-2014}$), was lower than potential F-based reference points identified for the north Pacific albacore stock, except $F_{50\%}$ (calculated as $1-SPR_{50\%}$)(ISC, 2017a).

Table 4. Estimates of maximum sustainable yield (MSY), female spawning biomass (SSB) quantities, and fishing intensity (F) based reference point ratios for north Pacific albacore tuna for the base case assessment and important sensitivity analyses. SSB_0 and SSB_{MSY} are the unfished biomass of mature female fish and at MSY, respectively. The Fs in this table are not based on instantaneous fishing mortality. Instead, the Fs are indicators of fishing intensity based on SPR and calculated as $1-SPR$ so that the Fs reflect changes in fishing mortality. SPR is the equilibrium SSB per recruit that would result from the current year's pattern and intensity of fishing mortality. Current fishing intensity is based on average fishing intensity during 2012-2014 ($F_{2012-2014}$) (ISC, 2017a).

Quantity	Base Case	M = 0.9 y ⁻¹	Growth CV = 0.06 for Low
MSY (t) ^A	192,072	92,027	118,836
SSB_{MSY} (t) ^B	24,770	42,098	22,951
SSB₀ (t) ^B	171,869	270,879	156,336
SSB₂₀₁₅ (t) ^B	80,618	68,169	63,719
SSB₂₀₁₅/2.0%SSB_{current, 3-0} ^B	2.47	1.91	2.15
F₂₀₁₂₋₂₀₁₄	0.51	0.74	0.57
F₂₀₁₂₋₂₀₁₄/F_{MSY}	0.61	0.89	0.68
F₂₀₁₂₋₂₀₁₄/F_{0.1}	0.58	0.90	0.65
F₂₀₁₂₋₂₀₁₄/F_{10%}	0.56	0.81	0.63
F₂₀₁₂₋₂₀₁₄/F_{20%}	0.63	0.91	0.71
F₂₀₁₂₋₂₀₁₄/F_{30%}	0.72	1.04	0.81
F₂₀₁₂₋₂₀₁₄/F_{40%}	0.85	1.21	0.96
F₂₀₁₂₋₂₀₁₄/F_{50%}	1.01	1.47	1.16

A - MSY includes male and female juvenile and adult fish

B - Spawning stock biomass (SSB) in this assessment refers to mature female biomass only.

Instantaneous fishing mortality at age (F-at-age) is similar in both sexes through age-5, peaking at age-4 and declining to a low at age-6, after which males experience higher F-at-age than females up to age 13 (ISC, 2017a). Surface fisheries (primarily troll, and pole-and-line, but including gillnet and other miscellaneous gears), which tend to catch juvenile fish, have generally had a larger impact on the north Pacific albacore stock than longline fisheries, which tend to remove adult fish (Fig. 8) at a ratio of about 2:1 (ISC, 2017a).

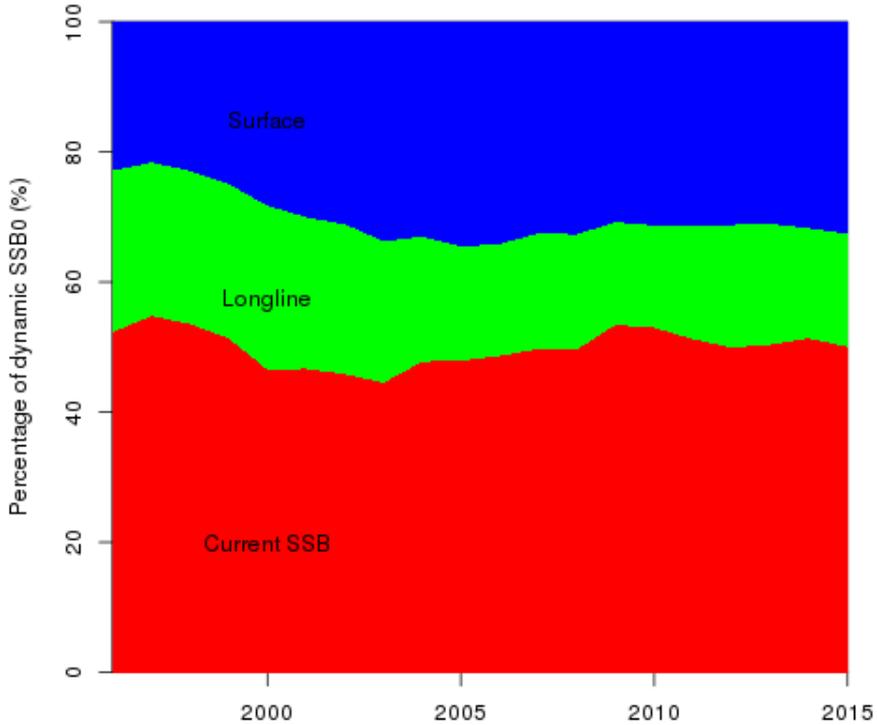


Figure 8. Fishery impact analysis on north Pacific albacore (*Thunnus alalunga*) showing female spawning biomass (SSB) (red) estimated by the 2017 base case model as a percentage of dynamic unfished female SSB (SSB0). Coloured areas show the relative proportion of fishing impact attributed to longline (USA, Japan, Chinese-Taipei, Korea and others) (green) and surface (USA, Canada, and Japan) (blue) fisheries (primarily troll and pole-and-line gear, but including all other gears except longline) (ISC, 2017a).

The estimated recruitments have fluctuated widely during the assessment period (1993 – 2015), ranging from a low of 135.3 ± 38.5 million fish (\pm SD) in 1998 to a high of 307.6 ± 71.1 million fish in 1999 (Fig. 9). The average recruitment during the 1993 – 2015 period was 201.5 million fish, which was slightly below virgin recruitment (226.2 million fish).

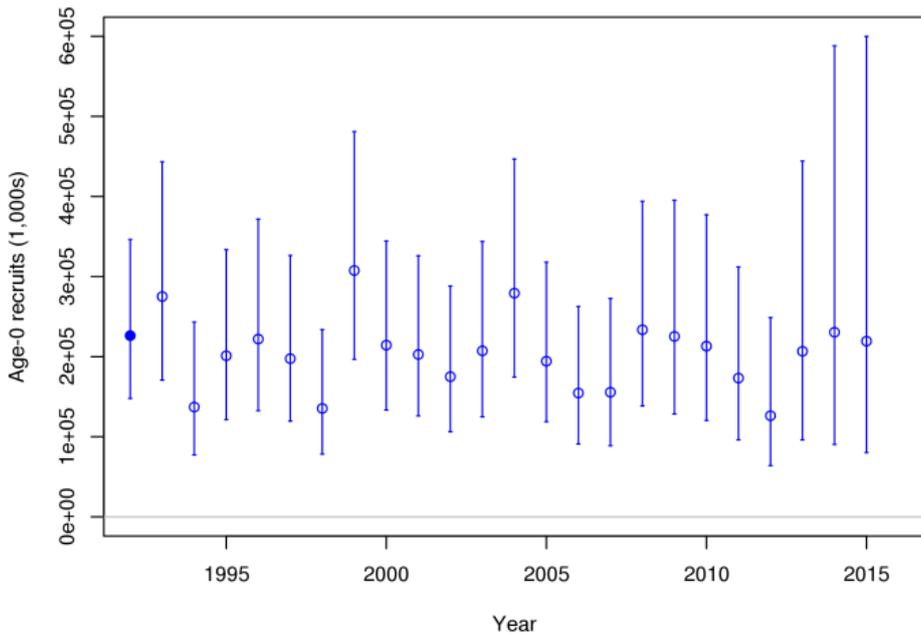


Figure 9. Maximum likelihood estimates of age-0 recruitment (open circles) of north Pacific albacore tuna (*Thunnus alalunga*). Vertical bars indicate 95% confidence intervals of recruitment estimates (ISC, 2017a).

Uncertainty in the recruitment estimates was relatively large because uncertainty estimated for the unfished recruitment parameter, which largely determines the population scale, was relatively large. In addition, the uncertainty in the last three years (2013 – 2015) of the assessment were larger than the rest of the time series because the amount of information on recruitment declines towards the end of a model period (ISC, 2017a).

When alternative hypotheses about key model uncertainties such as natural mortality and growth were evaluated, the point estimate of female SSB in 2015 (SSB) did not fall below the LRP, although the risk increases with these more extreme assumptions (Fig. 10) (ISC, 2017a).

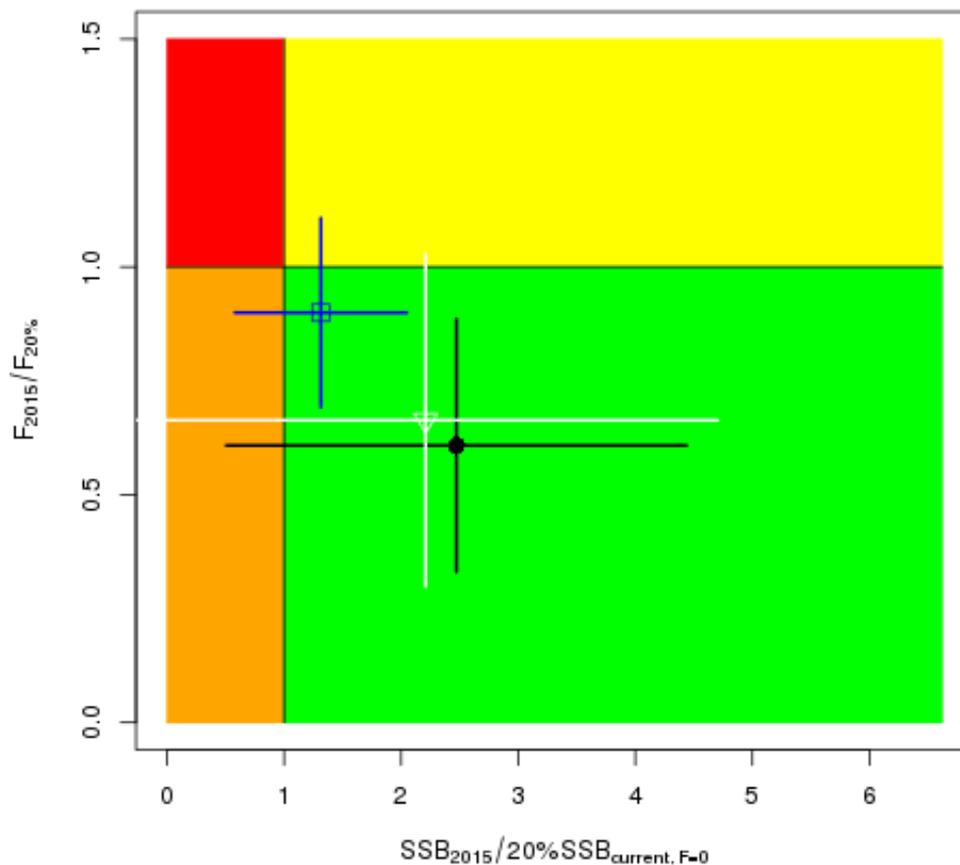


Figure 10. Kobe plot showing stock status and 95% confidence intervals in the terminal year (2015) of the base case model (black; closed circle) and important sensitivity runs with $M = 0.3 \text{ y}^{-1}$ for both sexes (blue; open square), and $CV = 0.06$ for L_{inf} in the growth model (white; open triangle). F_s in this figure are not based on instantaneous fishing mortality. Instead, the F_s are indicators of fishing intensity based on SPR (ISC, 2017a).

ALBWG computed biological reference points with the base case model (Table 4). It should be noted that the 20%SSB LRP is based on dynamic biomass and fluctuates depending on changes in recruitment (Fig. 9). In addition, all F -based reference points were calculated as the fishing intensity (1-SPR) equivalents of the reference points. The point estimate of maximum sustainable yield (MSY; includes male and female of all age classes removed by fisheries) was 132,072 t and the point estimate of female SSB to produce MSY (SSB_{MSY}) was 24,770 t. The ratio of $F_{2012-2014}/F_{MSY}$ was estimated to be 0.61 and the ratio of $SSB_{2015}/20\%SSB_{current,F=0}$ was estimated to be 2.47. Current fishing intensity ($F_{2012-2014}$) is below F_{MSY} (Table 4) (ISC, 2017a).

The LRP ($20\%SSB_{current,F=0}$) adopted by the WCPFC is based on dynamic SSB and has fluctuated between 29,560 to 42,352 t during the assessment period 1993-2015. The maximum likelihood estimate of female SSB has therefore been above the LRP throughout the assessment period (ISC, 2017a).

Based on the findings of the 2017 albacore stock assessment, the ALBWG concluded that: 1) the north Pacific albacore stock is likely not overfished, and 2) overfishing is likely not occurring (ISC, 2017a).

The ISC provided the following information on the status of the north Pacific albacore stock (ISC, 2017d):

1. The stock is likely not overfished relative to the limit reference point adopted by the Western and central Pacific Fisheries Commission ($20\%SSB_{current,F=0}$), and
2. No F-based reference points have been adopted to evaluate overfishing. Stock status was evaluated against seven potential reference points. Current fishing intensity ($F_{2012-2014}$) is below six of the seven potential reference points [see Table 2 above], except $F50\%$.

The ALBWG noted that the lack of sex-specific size data, uncertainty in growth and natural mortality, and the simplified treatment of the spatial structure of north Pacific albacore population dynamics are important sources of uncertainty in the assessment (ISC, 2017a).

4.2.3 Conservation Information

The ALBWG conducted two 10-yr projection scenarios, constant $F_{2012-2014}$ and constant catch (average of 2010-2014 = 82,432 t) externally to the base case model to evaluate impacts on future female SSB (ISC, 2017a).

Based on the projections of the two scenarios, the stock performs better under the constant $F_{2012-2014}$ harvest scenario with respect to the LRP than the constant catch scenario. Median female SSB is expected to decline slightly over 10 years with a negligible probability of declining below the limit reference point threshold during this period when a constant fishing intensity harvest scenario is applied to the stock (Fig. 11). In contrast, there is a substantially greater probability that female spawning biomass will decline below the limit reference point by 2025 under a constant catch harvest scenario (Fig. 12). Although the probabilities of declining below the limit reference point in both harvest scenarios are likely higher, even the most extreme results from other model runs with plausible alternative assumptions confirm that median trends in female spawning biomass did not decline below the limit reference point (ISC, 2017a).

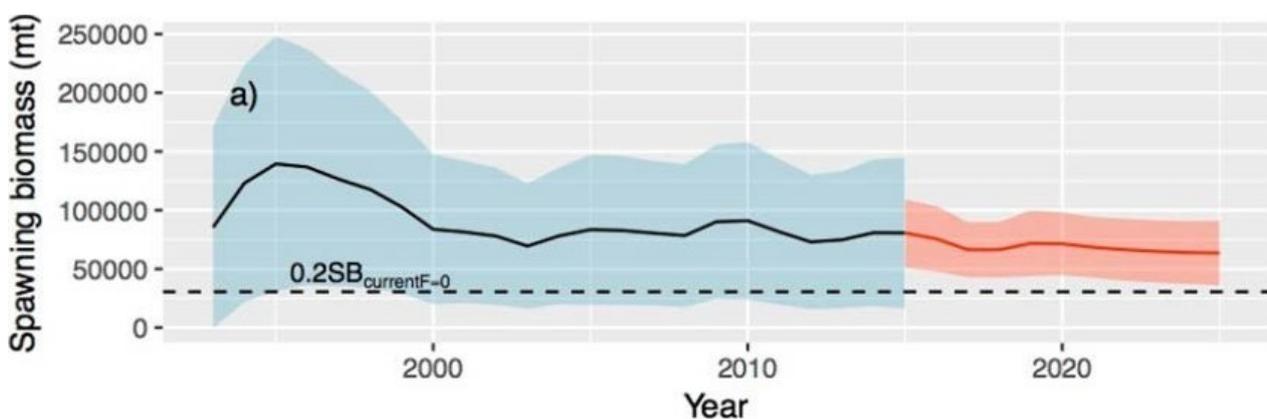


Figure 11. Historical and future trajectory of north Pacific albacore (*Thunnus alalunga*) female spawning biomass (SSB) under a constant fishing intensity (F harvest scenario). Future recruitment was based on the expected recruitment variability and autocorrelation. Black line and blue area indicates maximum likelihood estimates and 95% confidence intervals (CI), respectively, of historical female SSB, which includes parameter uncertainty. Red line and red area indicates mean value and 95% CI of projected female SSB (ISC, 2017a).

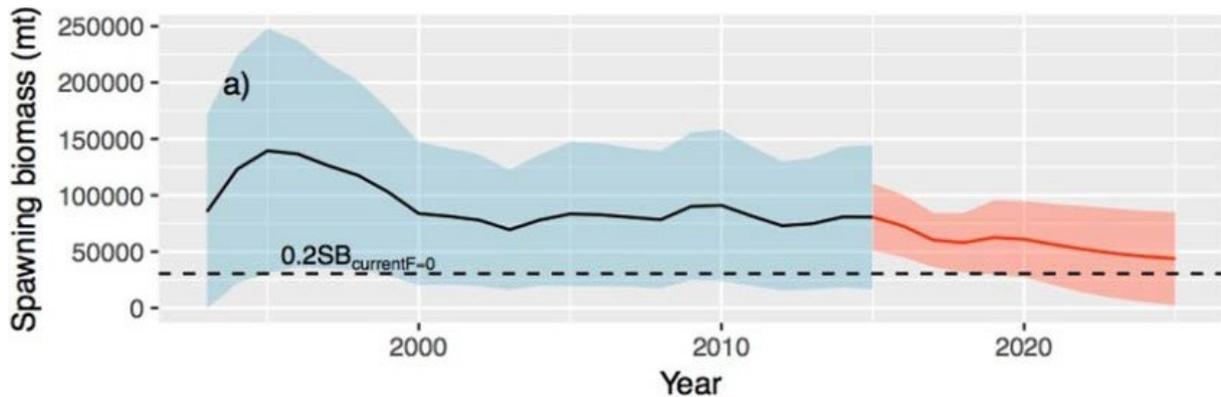


Figure 12. Historical and future trajectory of north Pacific albacore (*Thunnus alalunga*) female spawning biomass (SSB) under a constant catch (average 2010-2014 = 82,432 t) harvest scenario. Future recruitment was based on the expected recruitment variability and autocorrelation. Dashed line indicates the average limit reference point threshold for 2012-2014. Black line and blue area indicates maximum likelihood estimates and 95% confidence intervals (CI), respectively, of historical female SSB, which includes parameter uncertainty. Red line and red area indicates mean value and 95% CI of projected female SSB (ISC, 2017a).

Based on the findings of the projection scenarios the ISC provided the following information (ISC, 2017d):

1. If a constant fishing intensity ($F_{2012-2014}$) is applied to the stock, then median female spawning biomass is expected to undergo a moderate decline, with a <0.01% probability of falling below the limit reference point established by the WCPFC by 2015. However, expected catches in this scenario will be below the recent average catch level for this stock.
2. If a constant average catch ($C_{20110-2014} = 82,432$ t) is removed from the stock in the future, then the decline in median female spawning biomass will be greater than in the constant F intensity scenario and the probability that SSB falls below the LRP will be greater by 2025 (30%). Additionally, the estimated fishing intensity will double relative to the current level ($F_{2012-2014}$) by 2025 as spawning biomass declines.

4.3 Harvest Strategy and Harvest Control Rules (HCR)

WCPFC11 adopted CMM2014-06 to develop and implement a harvest strategy approach for key fisheries and stocks in the WCPO. The CMM identifies the elements that harvest strategies are to contain (WCPFC, 2014b):

“Each harvest strategy developed in accordance with this CMM shall, wherever possible and where appropriate, contain the following elements:

- a Defined operational objectives, including timeframes, for the fishery or stock (‘management objectives’)*
- b Target and limit reference points for each stock (‘reference points’)*
- c Acceptable levels of risk of not breaching limit reference points (‘acceptable levels of risk’)*
- d A monitoring strategy using best available information to assess performance against reference points (‘monitoring strategy’)*
- e Decision rules that aim to achieve the target reference point and aim to avoid the limit reference point (‘harvest control rules’), and*
- f An evaluation of the performance of the proposed harvest control rules against management objectives, including risk assessment (‘management strategy evaluation’).”*

CMM 2014-06 included a requirement that the Commission agree on a work plan and indicative timeframes to adopt or refine harvest strategies for skipjack, bigeye, yellowfin, South Pacific albacore, Pacific Bluefin and northern albacore tuna by no later than the twelfth meeting of the Commission in 2015 (WCPFC, 2014b). WCPFC13 adopted an Updated Harvest Strategy Work Plan (WCPFC, 2017b; Attachment N).

A Limit Reference Point (LRP) for North Pacific albacore ($20\%SSB_{current,F=0}$) has been adopted by the WCPFC. No Target Reference Points have been set for North Pacific albacore. One of the goals of the North Pacific albacore Management Strategy Evaluation (MSE) currently underway is to advise NC on TRP of North Pacific albacore.

NC11 recommended the incorporation of an emergency rule paragraph in the measure for when drastic drops of recruitment are detected. Discussions on North Pacific albacore included the development of reference points and harvest control rules, with agreement to advance the work on MSE at a workshop in April 2016 (WCPFC, 2016).

At the Eleventh Regular Session of the Northern Committee, the USA introduced its North Pacific Albacore Evaluation of Candidate Harvest Control Rules proposal (WCPFC, 2015). As the follow-on to the adoption of the precautionary management framework for NP albacore and in preparation for the ISC to perform the management strategy evaluation, the USA proposed a series of candidate harvest control rules and reference points to be evaluated. The candidate harvest control rules include a set based on total allowable catch and a set based on total allowable effort. The reference points proposed for evaluation include combinations of B limits and F targets (WCPFC, 2015).

In 2014 WCPFC NC10 tasked the ALBWG with developing an MSE process to evaluate the performance of target reference points (WCPFC, 2014a). The ISC and the Japan Fisheries Research Agency sponsored a workshop on MSE for tuna manager/stakeholders in Yokohama, Japan, 16-17 April 2015. Immediately afterward (20-22 April), the ALBWG held a mini-workshop at NRIFSF in Shimizu to begin the process of developing an MSE process for NPALB (ISC, 2015a). Work plans were developed for the next year for review and approval by ISC15. The April 2015 ALBWG workshop identified some principles for the MSE development and identified several areas in which managers/stakeholders will need to be engaged in the process. A follow up 2nd ISC sponsored MSE workshop on fishery objectives and harvest control rules for managers was held 24-25 May 2016 in Yokohama, Japan (ISC, 2016: Attachment 5).

The ISC has begun work on the Management Strategy Evaluation (MSE) for the North Pacific Albacore stock. The ALB MSE process is detailed in the framework proposed by the ALBWG (available in <https://www.wcpfc.int/node/23394>). An initial proposal of five objectives for the management of the North Pacific Albacore tuna stock were made by managers, scientists and other stakeholders during the second ISC MSE Workshop (Yokohama, Japan, May 24-25, 2016). The ALBWG at its latest meeting (Shimizu, Japan, May 26-30, 2016) subsequently proposed one additional objective to facilitate the evaluation of target reference points (ISC, 2016). ALBWG then proposed performance indicators related to these management objectives. The six management objectives identified were:

1. Maintain spawning biomass (SSB) above the limit reference point;
2. Maintain the total biomass, with reasonable variability (x%), around the average depletion level in the recent 10 years of the latest stock assessment;
3. Maintain harvest ratios by fishery (fraction of the SSB harvested) at current average
4. Maintain catches by fishery above average historical catch;
5. Limit the magnitude of change to effort or catch to < 15% at any one time due to management actions by fishery;
6. Maintain F at the target value (proposed by the ALBWG to facilitate performance.

The IATTC staff proposed to the Commission that the ALB MSE process be endorsed by the IATTC (IATTC, 2016).

The US delegation informed NC12 that MSE is a priority for NOAA and each Science Center must hire one personnel dedicated to MSE (WCPFC, 2016). The Southwest Fisheries Science Center, which has the lead with respect to North Pacific albacore, succeeded to secure such personnel. Desiree Tommasi has been hired to lead this work and comes to the program with expertise in MSE work with coastal pelagics. She will be assisted by another staff member with MSE expertise who has been recently hired by NOAA. They plan to work in collaboration to incorporate environmental data into the MSE assessment. On October 19, 2017, the ISC ALBWG concluded a third MSE workshop on North Pacific Albacore tuna in Vancouver, B.C. Delegations of managers, scientists and industry from Canada, the U.S., Japan, Taiwan and China, and representatives from the Inter-American Tropical Tuna Commission (IATTC), WCPFC, World Wildlife Federation and the Monterey Bay Aquarium met to confirm management objectives, develop performance metrics, a set of candidate harvest control rules and a more diverse set of candidate reference points to be tested in the MSE process (Robert Day, DFO Ottawa, pers. com.).

Through the MSE workshop, Canada proposed a new harvest control rule which would help meet Condition 1 (PI 1.1.2) and Condition 2 (PI 1.2.2) whereby biomass would be maintained at its current level, which is above B_{MSY} and result in a reduction of exploitation rates as a true biological limit reference point is approached. Over the next year, the MSE expert will run simulations to test the harvest control rule proposed by Canada as well as the harvest control rule used in the IATTC and a suite of candidate reference points. The MSE expert will then report the initial set of results to the same group at a fourth workshop to be held, likely in fall 2018. Following this workshop, a new harvest control rule and set of reference points could be adopted (Robert Day, DFO Ottawa, pers. comm.).

At this point formal Harvest Control Rules (HCRs) have not yet been defined for North Pacific albacore by WCPFC or IATTC.

4.4 Research Update

Canadian highly migratory species research in the Pacific Ocean has focused on improving understanding of the biology and ecology of north Pacific Albacore Tuna to enhance assessments of the effects of fishing and the environment on stock dynamics and status (Holmes and Chen, 2015; Holmes and Zhang, 2017). Zhang is working on a project on the impact of the environment on abundance of albacore on the North West coast of North America (Zhang, pers. comm.).

Canada chaired the ISC Albacore Working Group (ISC-ALBWG) and is leading the development of a management strategy evaluation process for north Pacific albacore. The most recent stock assessment was completed in April 2017. Initial evaluations to address target reference point selections are expected in late 2017 or early 2018 (WCPFC, 2017a).

NOAA Fisheries research on tunas and billfishes in the Pacific Ocean has largely been focused on improving understanding of the biology and ecology of the animals to support needs for assessing the effects of fishing and the environment on the population or stock. Studies are carried out largely in cooperation with stakeholders and in collaboration with colleagues both in the U.S.A. and abroad (ISC, 2015b).

NOAA Fisheries scientists are working with the American Fishermen's Research Foundation (AFRF) to collect biological data during selected fishing trips. Following procedures established by NOAA Fisheries scientists, size data were collected from two cooperating vessels in 2013 and 2014, with 726 and 755 fish measured, respectively. These onboard samples augment the size data collected through the port sampling program. These data are all sent to the SWFSC for processing (ISC, 2015b).

American Fishermen's Research Foundation (AFRF) has been working on a cooperative research project with Southwest Fisheries Science Center (SWFSC) - NOAA/NMFS tagging west coast albacore tuna with archival tracking tags since late 2001. Nearly 1,000 tags have been deployed by U.S. albacore vessels and technicians from the SWFSC in that time frame and over 30 tags have been recovered with very interesting information regarding albacore migration, feeding patterns, and daily movements.

Over that period of 16 years over 1.2 million dollars contributed by the albacore troll and pole industry and NOAA has been spent deploying and purchasing these tags. Dr. Stephanie Snyder is analysing the tagging data for future publications.

4.5 Harmonisation

The CHMSF albacore tuna North Pacific fishery overlaps with two other tuna fisheries in the MSC program:

- AAFA and WFOA north Pacific albacore tuna pole and line and troll/jig fishery (Blythe-Skyrme, Bartoo and Laurs, 2012)
- Japanese pole and line skipjack and albacore fishery (Akroyd, Stokes and Nagano, 2016)

At an MSC workshop held in Hong Kong (21-22 April, 2016) Principle 1 for North Pacific albacore was harmonized (MSC, 2016). The outcome of the harmonization workshop for North Pacific albacore was included in the 1st CHMSF surveillance audit (Mateo and Stocker, 2016).

Given the 2017 ALBWG North Pacific albacore stock assessment (ISC, 2017a), the audit team reviewed the P1 scores and concluded that no changes from the harmonized P1 scores are required.

4.6 Relevant changes to Legislation and Regulations

There were no changes to the legislation and/or regulations that governs the CHMSF Albacore Tuna North Pacific Fishery.

4.7 Relevant changes to the Management Regime

In 2017, DFO amended the 2015-2017 Albacore Tuna Integrated Fisheries Management Plan (DFO, 2015). The 2017-2019 Pacific Region Albacore Tuna Integrated Fisheries Management Plan (IFMP) is valid for the period of April 1, 2017 to March 31, 2019 in Canadian, high seas, and U.S.A fisheries waters (DFO, 2017). This multi-year IFMP provides for longer term planning and increases stability for the fishery participants.

At the conclusion of the March 2017 meeting the U.S.A and Canada agreed to a three-year fishing regime under the Canada/US Albacore Tuna Treaty for the 201 to 2019 fishing seasons.

4.8 Changes to personnel in Science and Management

The following DFO Pacific Region personnel changes have been noted:

- Caroline Wells has been appointed A/Resource Manager, Tuna and Sardine in February 2017 replacing Wellesley Hamilton.
- Nicole Gallant is the Enforcement Officer for albacore replacing Gary Mille (retired).

Under the guidance of the ALBWG, an analyst (Desiree Tommasi) was hired at the Southwest Fisheries Science Center to make sustained progress on the Management Strategy Evaluation (MSE) project. Dr. Stephanie Snyder was newly hired by NMFS-SWFSC to analyse tagging data for future publications.

Dr. John Holmes was elected ISC chair at the 17th ISC meeting in Vancouver in July 2017. He replaces Gerard DiNardo (NMFS-SWFSC). H. Kiyofuji (Japan) has been elected ALBWG chair replacing John Holmes (DFO). The ALBWG vice chair is Steve Teo (NMFS-SWFSC).

4.9 The General Conditions of Certification

The general 'Conditions' set out for the Canadian Highly Migratory Species Foundation (CHMSF) as the certificate holder at initial full assessment were as follows:

- The Client must recognize that MSC standards require regular monitoring inspections at least once a year, focusing on compliance with the 'Conditions' set forth in this report (as outlined below) and continued conformity with the standards of certification;
- The Client must agree by contract to be responsible financially and technically for compliance with required surveillance audits by an accredited MSC certification body, and a contract must be signed and verified by SAI Global prior to certification being awarded;
- The Client must recognize that MSC standards require a full re-evaluation for certification (as opposed to yearly monitoring for update purposes) every five years;
- Prior to receiving final certification, the Clients fulfilled the requirement to document an 'Action Plan' for Meeting the Conditions for Continued Certification' and have these approved by SAI Global.
- The Client must provide a list of all the entities eligible for certification as well as a list of active vessels fishing under the certificate. This list must be updated annually prior to each annual surveillance audit activity.

Fulfilment of General Conditions- Surveillance Audit 2:

- An Action Plan was submitted and accepted prior to the re-certification of the Canadian Highly Migratory Species Foundation (CHMSF) Fishery and actions undertaken against the milestones of each Condition in the intervening period are reported upon in the next following sections.
- An up-dated list of members of the client group has been provided and a list of active vessels during the 2016 fishery.

4.10 The Specific Conditions of Certification

During the re-assessment of the Canadian Highly Migratory Species Foundation (CHMSF) albacore tuna (*Thunnus alalunga*) North Pacific fishery, a conditional score was allocated for PIs (PI 1.1.2 Limit and target reference points are appropriate for the stock, and PI 1.2.2 There are well defined and effective harvest control rules in place).

2).

Table 5. Summary of Assessment Conditions

Condition number	Performance indicator (PI)	Status	PI original score	PI revised score
1	1.1.2	Behind target	70	65*
2	1.2.2	Behind target	60	Not revised

* Score revised to 65

The fishery is considered to be behind target with respect to the milestones for conditions 1 and 2 as specified in the public certification report (Criquet, Mateo, and Stocker, 2015).

It is noted that the WCPFC (2014b) and IATTC (2014, 2015) set out definitions of harvest strategies to be developed and implemented. The definitions include target and limit reference points and decision rules or (“harvest control rules”), with a clear intention that harvest control rules, tested using simulation approaches (MSE), will be part of the implemented harvest strategies. The WCPFC agreed to adopt a work plan at the 2015 Commission meeting, with potential revision in 2017, with application to skipjack, bigeye, yellowfin, Pacific bluefin, and South and North Pacific albacore tunas. In fact, work towards establishing reference points and harvest control rules is already well underway through the Management Objectives Workshop (MOW) process. IATTC (2014, 2015) has also adopted measures to progress development and adoption of TRP, LRP, and HCR. The ISC ALBWG held a Stock Assessment Workshop: Management Strategy Evaluation Mini-Workshop, 20-22 April 2015, in Shimizu-ku, Japan, with the aim to develop a MSE plan. A follow up 2nd ISC sponsored MSE workshop on fishery objectives and harvest control rules for managers was held 24-25 May 2016 in Yokohama, Japan (ISC, 2016: Attachment 5). The ISC ALBWG concluded a third MSE Workshop in Vancouver BC on October 19, 2017 (see above).

The assessment team considers these to be very positive developments, and present critical steps towards the introduction of appropriate biological reference points effective harvest control rules for North Pacific albacore. According to the ISC work plan, the full MSE process is likely to take several years, and there is optimism that formal RPs and HRCs will be adopted before the end of the CHMSF fishery’s existing certification period.

More details are provided in the results section (Section 6) below.

5 Assessment Process

The surveillance audit followed the current version of MSC procedures implemented by SAI Global's accredited MSC Procedures (QP).

MSC Scheme Document	Issue Date	Implementation
MSC Certification Requirements v1.3	January 14 th , 2013	Standard
MSC FCR and Guidance v2.0	October 1 st , 2014	Process
General Certification Requirements v.2.1	February 20 th , 2015	Process
Surveillance Reporting Template v1.0	October 8 th , 2014	Process

Table 6. Fishery Surveillance Program.

Surveillance Level	Year 1	Year 2	Year 3	Year 4
Level 6	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & re-certification site visit.

The surveillance audit was conducted as a normal onsite audit.

The Surveillance Audit was comprised in general of:

1. To review any changes in the management of the fishery, including regulations, key management or scientific staff or stock evaluation.
2. To evaluate the progress of the fishery against any Conditions of Certification raised during the Main Assessment.
3. To review any developments or changes within the fishery which impact traceability and the ability to segregate MSC from non-MSC products.
4. To review any other significant changes in the fishery.

The surveillance audit consisted of the announcement to stakeholders and interested parties as required through the MSC website and more direct stakeholder contact with the original stakeholders that took part in the initial assessment and management organizations that comprise the management system and regime for the CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery. Through this process, a stakeholder consultation plan was developed as part of the on-site assessment.

Emails and information on objectives of the surveillance audit were sent to stakeholders and management agencies. From this, a surveillance on-site meeting plan was organized and appointments for each individual meeting set. Due to the nature of the management of the CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery, and the geographic location of the respective clients and stakeholders, the on-site audit meeting was proposed to be in Vancouver.

- On-site Surveillance Audit date was on 22nd August, 2017.
- On-site audits were performed by Ivan Mateo (Lead Auditor), and Max Stocker (Auditor).

The surveillance audit meeting was informed by a pre-determined agenda. The agenda was set out so as to allow specific stakeholder interests and concerns to be covered through a structured approach

In addition to the site visit, 3 separate calls were held with the British Columbia Ministry of Agriculture on August 22, 2017, the IATTC on August 10, 2017, and the NMFS Southwest Fisheries Science Center on August 2, 2017. The surveillance audit team also met with the client (CHMSF) on August 22, 2017.

Information and notes from the consultation phase of the assessment were combined with a review of formal documentation from science and management agencies, and the direct evidence collected during each of the client consultation meetings.

5.1 Summary of stakeholder and client meetings

Arising out of the stakeholder consultation plan preparation a considerable number of stakeholders were contacted directly by surface mail and e-mail and a final direct consultation plan for the audit was prepared. Table 7 details the dates, meeting locations and organisations that were consulted through direct meetings or conference calls during the on-site surveillance assessment. All meetings were conducted by the Surveillance Team Assessors.

Table 7. Consultation Meetings during the On Site Surveillance Assessment of the CHMSF Albacore tuna North Pacific Fishery.

Name Organization	Present at Meeting	Location	Meeting Type	Date/Time
CHMSF	SAIG team Lorne Clayton, Executive Director CHMSF	DFO Offices, 200- 401 Burrard Street, Vancouver, BC	Meeting	22 August 2017 11:30 AM
Fisheries and Oceans Canada (DFO)	SAIG team Caroline Wells, Corey Jackson, Zane Zhang	DFO Offices, 401 Burrard Street, Vancouver, BC	Meeting	22 August 2017 10:00 AM
BC Ministry of Agriculture Victoria, BC	SAIG team Larry Nielsen, Mike Turner	DFO Offices, 401 Burrard Street, Vancouver, BC	Teleconference	22 August 2017 2:00 PM
IATTC 8901 La Jolla Shores Drive La Jolla CA 92037- 1509, USA	SAIG team MRAG team (Amanda Stern- Pirlot and Erin Wilson) Rick Deriso, Mark Maunder, Carolina Minte- Vera	IATTC 8901 La Jolla Shores Drive La Jolla CA 92037- 1509, USA	Teleconference	22 August 2017 1:00 PM
NOAA/NMFS Southwest Fisheries Science Center, 8901 La Jolla Shores Dr La Jolla, CA 92037- 1508, USA	SAIG team MRAG team (Amanda Stern- Pirlot and Erin Wilson) Steve Teo, John Childers, Steve Stohs	Fisheries Science Center, 8901 La Jolla Shores Dr La Jolla, CA 92037-1508, USA	Teleconference	2 August 2017 9:00 AM

MRAG conducted the 4th surveillance audit for the AAFA and WFOA North and South Pacific albacore tuna fisheries from August 9-11, 2017 (MRAG, 2017). In order to avoid duplication the assessment teams of SAIG

and MRAG jointly conducted conference calls with IATTC and NMFS. Please note that Max Stocker is also part of MRAG team.

6 Results

Tables below show updates for conditions 1 and 2 as per the findings of the first surveillance audit following the re-certification of the CHMSF North Pacific albacore tuna fishery.

6.1 Evaluation tables for Conditions during the 2nd Surveillance Audit 2017.

6.1.1 Condition 1

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	1.1.2	SG 80 <ul style="list-style-type: none"> • Slb The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity • Slc The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome 	65*
Condition	The client must provide evidence of implementation of limit reference point set above the level at which there is an appreciable risk of impairing reproductive capacity, and target reference point such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome.		
Client action plan and agreed Milestones	Action plan <ol style="list-style-type: none"> 1. CHMSF will continue its active work to develop and promote the determination of appropriate target and limit reference points (or measures or surrogates with similar intent or outcome) for the North Pacific albacore tuna stock. These efforts will work in conjunction with the CHMSF ongoing support for appropriate measures to further increase compliance with conservation and management measures of the appropriate regional fishery management organization. CHMSF will continue its ongoing work with the Government of Canada and international bodies to support recommendations for reference points and harvest control rules for adoption at the IATTC and WCPFC. 2. CHMSF will continue to actively work toward having the IATTC and WCPFC adopt appropriate target and limit reference points (or measures or surrogates with similar intent or outcome) for the North Pacific albacore tuna stock. CHMSF will continue to work with the Government of Canada and provide evidence of the work and collaboration with Canadian and regional managers, attend and participate in international and regional meetings and forums, where appropriate, to continue to support the adopting of appropriate target and limit reference points (or measures or surrogates with similar intent or outcome) will be provided in the form of RFMO meeting papers and minutes. 3. In accordance with these actions, CHMSF will continue to work with, and will report on, ongoing efforts to explore appropriate opportunities with other tuna fisheries, associations, or organizations with complimentary objectives. 4. In addition, CHMSF agrees to fulfil Condition 1 before proceeding beyond the site visit stage for the next recertification process. 		

	<p>Responsible parties</p> <ol style="list-style-type: none"> 1. The client will support all activities of DFO in development and implementation of the Reference Points. 2. DFO, in consultation with the Canadian Highly Migratory Species Foundation and the Canadian Albacore Tuna fishery stakeholders/participants, will develop appropriate Reference Points. 3. DFO, in consultation with client harvester groups, will ensure that the Reference Points are consistent with MSC Principles 1. 4. DFO will conduct consultations with relevant stakeholders groups. <p>Timeframe for Milestones</p> <ol style="list-style-type: none"> 1. By the first annual surveillance audit the CAB will be presented with evidence that consultations regarding Reference Points have occurred. 2. By the second surveillance audit the CAB will be presented with evidence that Reference points have been defined and approved. 3. By the third surveillance audit the CAB will be presented with evidence that reference points have been implemented.
<p>Progress on Condition [Year 1]</p>	<p>In 2014 a Precautionary Approach Management (PA) Framework was adopted by the WCPFC for NP Albacore tuna. The framework aims to ensure the stock's long term sustainability and protect against increased effort by establishing a management objective, setting a Limit Reference Point (LRP), and establishing management actions that would be triggered if it is determined that the LRP is being breached. A Management Strategy Evaluation (MSE) process was proposed by the U.S., and supported by Canada, as a next step. The MSE process was jointly initiated by the IATTC, the WCPFC, and the ISC in 2015. It will help to better identify potential target reference points and harvest control rules for NP Albacore. It is anticipated that the MSE processes will take a number of years to complete given the number of Parties involved and the high level of engagement required. Once complete, the results of the MSE process will be incorporated into the WCPFC PA framework and Canada will work with the U.S. and others to have the revised framework adopted by the IATTC. Canada has sought advice on the MSE objectives from Canadian industry representatives including CHMSF through the Tuna Advisory Board (TAB).</p>
<p>Evidence for Year 1</p>	<p>It is noted that the WCPFC (2014b) and IATTC (2014, 2015) set out definitions of harvest strategies to be developed and implemented. The definitions include target and limit reference points and harvest control rules, with a clear intention that harvest control rules, tested using simulation approaches (MSE), will be part of the implemented harvest strategies.</p> <p>The following evidence has been presented to the surveillance audit team that consultations regarding Reference Points have occurred:</p> <p>As advisers to the DFO Tuna Advisory Board (TAB) CHMSF (Lorne Clayton) and eight albacore tuna fishing boat owners (TAB Advisors) have worked actively with DFO in the ALB MSE process. Specifically, CHMSF and TAB Advisors) contributed to the identification of management objectives. The management objectives (see Section 4. above) were presented at the second ISC MSE Workshop in Yokohama, Japan, May 24-25, 2016. Furthermore NC10 adopted a precautionary management framework including a limit reference point of $20\%SSB_{current,F=0}$, which superseded FSSB-ATHL</p> <p>Additional detail on CHMSF actions is presented in Section 9.4; Appendix 4 below).</p>

<p>Progress on Condition [Year 2]</p>	<p>CHMSF has continued to actively work toward having the IATTC and WCPFC adopt appropriate target and limit reference points (or measures or surrogates with similar intent or outcome) for the North Pacific albacore tuna stock. CHMSF continued to work with the Government of Canada and provided evidence of the work and collaboration with Canadian and regional managers, attended and participated in international and regional meetings and forums, where appropriate, to continue to support the adopting of appropriate target and limit reference points. So far the WCPFC has adopted a limit reference point $20\%SSB_{current, F=0}$. However, by the second surveillance audit the CAB was not presented with evidence that Reference Points (except LRP in the WCPFC) have been defined and approved. Thus the time frame for milestones for the second surveillance audit in the client action plan has not been reached.</p> <p>Based on the results of the 2nd annual surveillance audit, the client's progress on condition 1 is determined to be behind target. The Audit Team acknowledges the previous significant effort by the client in cooperation with the management authority, but progress to date has now clearly fallen behind target</p>
<p>Evidence for Year 2</p>	<p>The surveillance audit team noted that the WCPFC (2014b) and IATTC (2014, 2015) set out definitions of harvest strategies to be developed and implemented. The definitions include target and limit reference points and harvest control rules, with a clear intention that harvest control rules, tested using simulation approaches (MSE), will be part of the implemented harvest strategies.</p> <p>The following evidence has been presented to the surveillance audit team that consultations regarding Reference Points have occurred: As advisers to the DFO Tuna Advisory Board (TAB) CHMSF (Lorne Clayton) and eight albacore tuna fishing boat owners (TAB Advisors) have worked actively with DFO in the ALB MSE process. Specifically, CHMSF and TAB Advisors) contributed to the identification of management objectives. The management objectives (see Section 4. above) were presented at the second ISC MSE Workshop in Yokohama, Japan, May 24-25, 2016. Furthermore NC10 adopted a precautionary management framework including a limit reference point of $20\%SSB_{current, F=0}$, which superseded FSSB-ATHL. A further MSE workshop has been conclude in Vancouver in October 2017.</p> <p>Additional detail on CHMSF actions is presented in Section 9.</p>
<p>Conclusion and Outcome on Condition 1 from 2nd surveillance audit</p>	<p>The audit team concludes that since the time frame for milestones for the second surveillance audit in the client action plan has not been reached by the second surveillance audit the fishery is currently behind target to meet Condition 1. The score for PI 1.1.2 remains at 65*.Based on the results of the 2nd annual surveillance audit, the client's progress on condition 1 is determined to be behind target. The Audit Team acknowledges the previous significant effort by the client in cooperation with the management authority, but progress to date has now clearly fallen behind target. As a result, the Condition 1 as stipulated in the Action Plan for the 2nd Surveillance Audit for PI 1.1.2 has not been met and remains open.</p> <p>Based on the results of the 2nd annual surveillance audit, the client's progress on condition 1 is determined to be behind target. The Audit Team acknowledges the previous significant effort by the client in cooperation with the management authority, but progress to date has now clearly fallen behind target.</p> <p>The guidelines provided by the MSC v1.3 scheme document MSC CR 27.22.8.1b state: "The CAB shall document whether progress is 'on target', 'ahead of target' or 'behind target', as well as its rationale for such a judgment."</p>

	<p>(i). "If progress against the measurable outcomes, expected results or (interim) milestones specified when setting the condition is judged to be behind target, the CAB shall specify the Corrective action, and any revised milestones, that are required to bring the process back on track at the next surveillance audit to achieve the original condition by the original deadline".</p> <p>The ramifications of any shortfalls with regards to this condition is expected to include implementation of MSC CR 27.22.9 which states: "In the event that the CAB determines that progress against conditions is inadequate and/or a condition is not back 'on target' within 12 months of falling 'behind target', the requirements of 7.4 (suspension or withdrawal) shall be applied. Based on MSC CR 27.22.8.1b, the Audit Team has set revised milestones to bring the process back on track at the next surveillance audit (refer to Table 6). Revised milestones have been identified in the current surveillance audit report and will be considered in the next surveillance. The Assessment Team will evaluate if the progress against these revised milestones are back "on target" for the next surveillance audit</p>
Status of condition 1 at 2nd surveillance audit	Behind target-Open. Score remains at 65.

* Score revised to 65 (see Mateo and Stocker, 2016)

6.1.2 Condition 2

	Insert relevant PI number(s)	Insert relevant scoring issue/ scoring guidepost text	Score
Performance Indicator(s) & Score(s)	1.2.2	SG 80 <ul style="list-style-type: none"> • Sla Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference point are approached. • Slb The selection of the harvest control rules takes into account the main uncertainties. • Slc Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules. 	60
Condition	The client must provide evidence 1) of implementation of well- defined harvest control rules that take into account the main uncertainties and reduce exploitation rates as the limit reference point is approached; and 2) that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.		
Client action plan and agreed Milestones	Action plan <ol style="list-style-type: none"> 1. CHMSF will continue it's ongoing, through its regional and Federal delegations to IATTC and WCPFC to promote the development and determination of an appropriate harvest control rule that applies uniformly and equitably to all fishery 		

	<p>mortality of North Pacific albacore tuna stock. CHMSF will continue to endorse presentations by Federal Canadian delegates to IATTC and WCPFC.</p> <ol style="list-style-type: none"> 2. CHMSF will continue its ongoing work, through collaboration with its regional and Federal delegations to IATTC and WCPFC, to promote the development and determination of an appropriate harvest control rule that applies uniformly and equitably to all fishery mortality of North Pacific albacore tuna stock. CHMSF will continue to: endorse presentations by Federal Canadian delegates to IATTC and WCPFC. CHMSF; will continue to work with the Government of Canada and provide evidence of the work and collaboration with Canadian and regional managers; attend and participate in international and regional meetings and forums, where appropriate; and, to continue to support the adopting of appropriate target and limit reference points (or measures or surrogates with similar intent or outcome) will be provided in the form of RFMO meeting papers and minutes. 3. In accordance with these actions, CHMSF will continue to work with, and will report on, ongoing efforts to explore appropriate opportunities with other tuna fisheries, associations, or organizations with complimentary objectives. 4. In addition, CHMSF agrees to fulfil Condition 2 before proceeding beyond the site visit stage for the next recertification process. <p>Responsible parties</p> <ol style="list-style-type: none"> 1. The client will support all activities of DFO in development and implementation of the Harvest Control Rules (HCRs). 2. DFO, in consultation with the Canadian Highly Migratory Species Foundation and the Canadian Albacore Tuna fishery stakeholders/participants, will develop the draft HCR's. 3. DFO, in consultation with client harvester groups, will ensure that the HCR's are consistent with MSC Principles 1. 4. DFO will conduct consultations with relevant stakeholders groups. DFO will publish and make publicly available the final HCR's <p>Timeframe for Milestones</p> <ol style="list-style-type: none"> 1. By the first annual surveillance audit the CAB will be presented with evidence that consultations have occurred. 2. By the second surveillance audit the CAB will be presented with evidence that the HCR's have been defined and approved. 3. By the third surveillance audit the CAB will be presented with evidence that the HCR's have been implemented.
<p>Progress on Condition [Year 1]</p>	<p>In 2014 a Precautionary Approach Management (PA) Framework was adopted by the WCPFC for NP Albacore tuna. The framework aims to ensure the stock's long term sustainability and protect against increased effort by establishing a management objective, setting a Limit Reference Point (LRP), and establishing management actions that would be triggered if it is determined that the LRP is being breached.</p> <p>A Management Strategy Evaluation (MSE) process was proposed by the U.S., and supported by Canada, as a next step. The MSE process was jointly initiated by the IATTC, the WCPFC, and the ISC in 2015. It will help to better identify potential target reference points and harvest control rules for NP Albacore. It is anticipated that the MSE processes will take a number of years to complete given the number of Parties involved and the high level of engagement required. Once complete, the results of the MSE process will be incorporated into the WCPFC PA framework and Canada will work with the U.S. and</p>

	<p>others to have the revised framework adopted by the IATTC. Canada has sought advice on the MSE objectives from Canadian industry representatives including CHMSF through the Tuna Advisory Board (TAB).</p>
<p>Evidence for Year 1</p>	<p>It is noted that the WCPFC (2014b) and IATTC (2014, 2015) set out definitions of harvest strategies to be developed and implemented. The definitions include target and limit reference points and harvest control rules, with a clear intention that harvest control rules, tested using simulation approaches (MSE), will be part of the implemented harvest strategies.</p> <p>The following evidence has been presented to the surveillance audit team that consultations regarding Reference Points have occurred: As advisers to the DFO Tuna Advisory Board (TAB) CHMSF (Lorne Clayton) and eight albacore tuna fishing boat owners (TAB Advisors) have worked actively with DFO in the ALB MSE process. Specifically, CHMSF and TAB Advisors) contributed to the identification of management objectives. The management objectives (see Section 4. above) were presented at the second ISC MSE Workshop in Yokohama, Japan, May 24-25, 2016. Additional detail on CHMSF actions is presented in Section 9.4; Appendix 4 below).</p>
<p>Progress on Condition [Year 2]</p>	<p>In 2014 a Precautionary Approach Management (PA) Framework was adopted by the WCPFC for NP Albacore tuna. The framework aims to ensure the stock's long term sustainability and protect against increased effort by establishing a management objective, setting a Limit Reference Point (LRP), and establishing management actions that would be triggered if it is determined that the LRP is being breached.</p> <p>A Management Strategy Evaluation (MSE) process was proposed by the U.S., and supported by Canada, as a next step. The MSE process was jointly initiated by the IATTC, the WCPFC, and the ISC in 2015. It will help to better identify potential target reference points and harvest control rules for NP Albacore. It is anticipated that the MSE processes will take a number of years to complete given the number of Parties involved and the high level of engagement required. Once complete, the results of the MSE process will be incorporated into the WCPFC PA framework and Canada will work with the U.S. and others to have the revised framework adopted by the IATTC. Canada has sought advice on the MSE objectives from Canadian industry representatives including CHMSF through the Tuna Advisory Board (TAB). A third MSE workshop in Vancouver BC has been concluded in October 2017.</p>
<p>Evidence for Year 2</p>	<p>The surveillance audit team noted that the WCPFC (2014b) and IATTC (2014, 2015) set out definitions of harvest strategies to be developed and implemented. The definitions include target and limit reference points and harvest control rules, with a clear intention that harvest control rules, tested using simulation approaches (MSE), will be part of the implemented harvest strategies. However, by the second surveillance audit the CAB has not been presented with evidence that the HCR's have been defined and approved. Thus the time frame for milestones for the second surveillance audit in the client action plan has not been reached.</p> <p>The following evidence has been presented to the surveillance audit team that consultations regarding Reference Points have occurred: As advisers to the DFO Tuna Advisory Board (TAB) CHMSF (Lorne Clayton) and eight albacore tuna fishing boat owners (TAB Advisors) have worked actively with DFO in the ALB MSE process. Specifically, CHMSF and TAB Advisors) contributed to the identification of management objectives. The management objectives (see Section 4.</p>

	<p>above) were presented at the second ISC MSE Workshop in Yokohama, Japan, May 24-25, 2016. Additional detail on CHMSF actions is presented in Section 9.4; Appendix 4 below). Based on the results of the 2th annual surveillance audit, the client's progress on condition 2 is determined to be behind target. The Audit Team acknowledges the previous significant effort by the client in cooperation with the management authority, but progress to date has now clearly fallen behind target</p>
<p>Conclusion and Outcome on Condition 2 from 2nd surveillance audit</p>	<p>The audit team concludes that since the time frame for milestones for the second surveillance audit in the client action plan has not been reached by the second surveillance audit the fishery is currently behind target to meet Condition 2. The score for PI 1.2.2 remains at 60. Based on the results of the 2th annual surveillance audit, the client's progress on condition 1 is determined to be behind target. The Audit Team acknowledges the previous significant effort by the client in cooperation with the management authority, but progress to date has now clearly fallen behind target. As a result, the condition 1 as stipulated in the Action Plan for the 2nd Surveillance Audit for PI 2.2.1 has not been met and remains open.</p> <p>Based on the results of the 2nd annual surveillance audit, the client's progress on condition 1 is determined to be behind target. The Audit Team acknowledges the previous significant effort by the client in cooperation with the management authority, but progress to date has now clearly fallen behind target.</p> <p>The guidelines provided by the MSC v1.3 scheme document MSC CR 27.22.8.1b state: "The CAB shall document whether progress is 'on target', 'ahead of target' or 'behind target', as well as its rationale for such a judgment."</p> <p>(i). "If progress against the measurable outcomes, expected results or (interim) milestones specified when setting the condition is judged to be behind target, the CAB shall specify the Corrective action, and any revised milestones, that are required to bring the process back on track at the next surveillance audit to achieve the original condition by the original deadline".</p> <p>The ramifications of any shortfalls with regards to this condition is expected to include implementation of MSC CR 27.22.9 which states:</p> <p>"In the event that the CAB determines that progress against conditions is inadequate and/or a condition is not back 'on target' within 12 months of falling 'behind target', the requirements of 7.4 (suspension or withdrawal) shall be applied.</p> <p>Based on MSC CR 27.22.8.1b, the Audit Team has set revised milestones to bring the process back on track at the next surveillance audit (refer to Table 6).</p> <p>Revised milestones have been identified in the current surveillance audit report and will be considered in the next surveillance. The Assessment Team will evaluate if the progress against these revised milestones are back "on target" for the next surveillance audit</p>
<p>Status of condition 1 at 2nd surveillance audit</p>	<p>Behind target-Open. Score remains at 60.</p>

6.2 Summary of Status of Conditions

Condition	Performance Indicator	Status
1	1.1.2	Open- Behind target
2	1.2.2	Open- Behind target

6.3 Revised milestones

7.23.13.1.b.i MSC FCR v2.0 states that in the event that progress against the specified milestones is judged to be behind target, the CAB shall specify the remedial action, and any revised milestones, that are required to bring process back on track within 12 months to achieve the original condition by the original deadline.

Condition 1 of 2	
Performance Indicator & Guidepost Issue 1.1.2 Limit and target reference points are appropriate for the stock.	SG 80 <ul style="list-style-type: none"> Slb The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity Slc The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome
Condition 1	The client must provide evidence of implementation of limit reference point set above the level at which there is an appreciable risk of impairing reproductive capacity, and target reference point such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome.
Revised Milestones	By the third surveillance audit the CAB will be presented with evidence that reference points have been defined, approved and implemented.

Condition 2 of 2	
Performance Indicator & Guidepost Issue 1.2.2 There are well-defined and effective harvest control rules in place.	SG 80 <ul style="list-style-type: none"> Sla Well defined harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference point are approached. Slb The selection of the harvest control rules takes into account the main uncertainties. Slc Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.
Condition 2	The client must provide evidence 1) of implementation of well- defined harvest control rules that take into account the main uncertainties and reduce exploitation rates as the limit reference point is approached; and 2) that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.
Revised Milestones	By the third surveillance audit the CAB will be presented with evidence that HCRs have been defined, approved and implemented.

7 Conclusion

The assessment team conducting this 2nd surveillance audit following recertification confirms that Canadian Highly Migratory Species Foundation has met the general requirements for continued certification to the MSC Principles and Criteria for Sustainable Fishing.

The assessment team concludes that even though the time frames for milestones for Condition 1 and 2 have not been reached, that there is sufficient evidence and information provided by the client and substantiated through the course of the consultation meeting during the surveillance audit to confirm that commitment to meeting the Condition 1 and 2 before the Certificate expires (8th June, 2020).

The Surveillance Audit Team considers that the client has made variable degrees of progress relative to all of the requirements of the Client Action Plan. However, progress against the conditions 1 and 2 summarized in Table 5 is judged to be “behind target” as the evidence provided was deemed to be insufficient to fulfil the requirements of the client action plan. Therefore, the milestones associated with the action plan for close out of these conditions are not met at this time.

Guidelines provided for the MSC v1.3 scheme document state: MSC CR 27.22.8.1b - "The CAB shall document whether progress is ‘on target’, ‘ahead of target’ or ‘behind target’, as well as its rationale for such a judgement." Accordingly to (i), “If progress against the measurable outcomes, expected results or (interim) milestones specified when setting the condition is judged to be behind target, the CAB shall specify the Corrective action, and any revised milestones, that are required to bring process back on track at the next surveillance audit to achieve the original condition by the original deadline.”

The ramifications of any shortfalls with regards to a Condition are expected to include the implementation requirement specified by MSC CR section 27.22.9 which states:

- MSC CR 27.22.9 - "In the event that the CAB determines that progress against conditions is inadequate and/or a condition is not back ‘on target’ within 12 months of falling ‘behind target’, the requirements of 7.4 (suspension or withdrawal) shall be applied."

Based on MSC CR 27.22.8.1b, the Audit Team has set revised milestones to bring the process back on track at the next surveillance audit (refer to Table 6).

The assessment team recommends that continued certification be awarded to the respective client fishery:

- **The CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery.**

7.1 Outcome of SAI Global Decision

SAI Global determines that:

- **The CHMSF Albacore Tuna North Pacific Fishery continues to operate a well-managed and sustainable fishery and therefore, continued certification to the MSC Principles and Criteria for Sustainable Fishing is awarded.**

8 References

- Akroyd, J., K. Stokes and K. Nagano. 2016. MSC sustainable fisheries certification, Japanese pole and line skipjack and albacore fishery. Public Certification Report. October 2016. Acoura Marine Ltd. 238 p.
- Blythe-Skyrme, R.E., N. Bartoo, and M. Laurs. 2012. American Albacore tuna Fishing Association, North Pacific albacore tuna pole & line and troll/jig fishery, Public Certification Report. Intertek Moody Marine, 24th December 2012. 160p.
- Criquet, G., I. Mateo and M. Stocker. 2015. Marine Stewardship Council Re-Assessment Public Certification Report for the Canadian Highly Migratory Species Foundation (CHMSF) Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery. SAI Global Assurance Service, Dundalk, Co. Louth, Ireland. 235 p.
- DFO. 2017. Integrated Fisheries Management Plan for Albacore Tuna. April 1, 2017 to March 31, 2019. DFO Pacific Region. 124 p.
- DFO. 2015. Integrated Fisheries Management Plan for Albacore Tuna. April 1, 2015 to March 31, 2017. DFO Pacific Region. 111 p.
- Holmes, J. and Z. Zhang. 2017. National Report of Canada (Canadian Tuna and Tuna-like Fisheries in the North Pacific Ocean 2016). Document prepared for the 17th Meeting of the ISC, 12-17 July, 2017, Vancouver, BC, Canada. ISC/17/PLENARY/04: 18 p.
- Holmes, J. and E. Chen. 2015. National Report of Canada (Canadian Tuna and Tuna-like Fisheries in the North Pacific Ocean 2014). Document prepared for the 15th Meeting of the ISC, 15-20 July, 2015, Kona. Hawaii, USA. ISC/15/PLENARY/04: 17 p.
- IATTC. 2016. Recommendations by the staff for conservation measures in the eastern Pacific Ocean. IATTC 90th Meeting, 23 June-1 July, 2016, La Jolla, CA (USA). Document IATTC-90-04d(REV): 8 p.
- IATTC. 2015. Scientific Advisory Committee Sixth Meeting. Meeting Report, 11-15 May, 2015. La Jolla, CA (USA). 52 p.
- IATTC. 2014. Scientific Advisory Committee Fifth Meeting. Meeting Report, 12-16 May, 2014. La Jolla, CA (USA). 40 p.
- IATTC. 2014b. Evaluation of candidate target and limit reference points and a decision framework for North Pacific albacore tuna. Proposal IATTC-87 J-1, submitted by the United States. Inter-American Tropical Tuna Commission, 87th Meeting, Lima, Peru, 14-18 July 2014. 3 p.
- ISC. 2017a. Annex 12. Report of the Albacore Working Group. Stock assessment of the albacore tuna in the North Pacific Ocean in 2017. In: Report of the Seventeenth Meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. Plenary Session, 12-17 July, 2017, Vancouver, BC, Canada. 110 p.
- ISC. 2017b. Annex 9. Report of the Albacore Working Group Workshop. In: Report of the Seventeenth Meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. Plenary Session, 12-17 July, 2017, Vancouver, BC, Canada. 26 p.

- ISC. 2017c. Annex 4. Report of the Albacore Working Group Workshop, 8-14 November 2016. Nanaimo, BC, Canada. In: Report of the Seventeenth Meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. Plenary Session, 12-17 July, 2017, Vancouver, BC, Canada. 64 p.
- ISC. 2017d. Report of the Seventeenth Meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. Plenary Session, 12-17 July, 2017, Vancouver, BC, Canada. 26 p.
- ISC. 2016. Report of the Albacore Working Group Workshop. Meeting Report, 26-30 May, 2016 National Research Institute of Far Seas Fisheries Shimizu, Shizuoka, Japan. 35 p.
- ISC. 2015a. Annex 8 Report of the Albacore Working Group Workshop. In: Report of the Fifteenth Meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. Plenary Session, 15-20 July, 2015, Kona, Hawaii, USA. 84 p.
- ISC. 2015b. National Report of U.S.A. (U.S.A. Fisheries and Research on Tuna and Tuna-like Fisheries in the North Pacific Ocean). Document prepared for the 15th Meeting of the ISC, 15-20 July, 2015, Kona, Hawaii, USA. ISC/15/PLENARY/09: 32 p
- ISC. 2014. Annex 11. Report of the Albacore Working Group. Stock assessment of the albacore tuna in the North Pacific Ocean in 2014. In: Report of the Fourteenth Meeting of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. Plenary Session, 16-21 July, 2014, Taipei, Taiwan. 131 p.
- Mateo, I. and M. Stocker. 2016. Marine Stewardship Council 1st Surveillance Report for the CHMSF Albacore Tuna (*Thunnus alalunga*) North Pacific Fishery. SAI Global. 40 p.
- Methot, R.D. 2000. Technical description of the Stock Synthesis assessment program. NOAA Tech. Memo. NMFS=NWFSC-43. 46 p.
- Methot Jr., R.D., and C.R. Wetzel. 2013. Stock Synthesis: a biological and statistical framework for fish stock assessment and fishery management. Fish. Res. 142: 86-99.
- Minte-Vera, C. and M.N. Maunder. 2016. Illustration of the use of the age-structured production model diagnostic tool in the North Pacific albacore stock assessment. ISC/16/ALBWG01/01. Work. Doc. Submitted to ALBWG Meeting 26-30 May 2016. Natl. Res. Inst. Far Seas Fish., Shimizu, Shizuoka, Japan. 8 p.
- MRAG. 2017. Marine Stewardship Council Surveillance Announcement for AAFA and WFOA North and South Pacific albacore tuna. MRAG Americas, St. Petersburg, Florida, USA. 4 p.
- MSC. 2016. Harmonisation meeting for Western Pacific tuna fisheries. Summary Report Marine Stewardship Council Pilot Workshop, 21-22 April, 2016, Hong Kong. 13 p.
- Ochi, D., H. Ijima, and H. Kiyofuji. 2017. Abundance indices of albacore caught by Japanese longline vessels in the North Pacific during 1976-2015. ISC/17/ALBWG/01. Work. Doc. Submitted to ALBWG Meeting 11-19 April 2017. Southwest Fisheries Science Center, La Jolla, CA, USA.
- SAI Global. 2017. Marine Stewardship Council Surveillance Announcement for CHMSF North Pacific Albacore Tuna Fishery. July 6, 2017. 4p.

WCPFC. 2017a. Annual report to the Commission (Part 1: Information on fisheries, research, and statistics. CANADA. Scientific Committee Thirteenth Regular Session, Rarotonga, Cook Islands, 9-17 August, 2017. WCPFC-SC13-AR/CCM-02: 17 p.

WCPFC. 2017b. The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Thirteenth Regular Session of the Commission, 5-9 December, 2016, Denarau Island, Fiji. 361 p.

WCPFC. 2009. Commission for the Conservation and management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. Fifth Regular Session. 8-12 December, 2008, Busan, Korea. 208 p.

WCPFC. 2016. Northern Committee Twelfth Regular Session. Summary Report 19 August – 2 September, 2016, Fukuoka, Japan. 50 p.

WCPFC. 2015. Northern Committee Eleventh Regular Session. Summary Report. 31 August – 3 September, 2015, Sapporo, Japan. 43 p.

WCPFC. 2014a. Northern Committee Tenth Regular Session. Summary Report. 1-4 September, 2014, Fukuoka, Japan. 44 p.

WCPFC. 2014b. Conservation and management measures on establishing a harvest strategy for key fisheries and stocks in the western and central Pacific Ocean. Eleventh Regular Session. Apia, Samoa, 1-5 December 2014. CMM 2014-06: 6p.

9 Appendices

9.1 Additional details on conditions/actions/results

Evidence submitted by CHMSF with reference to specific Conditions of Certification

- CHMSF is a member of the Association of Sustainable Fisheries

Log of activities undertaken by CHMSF representatives in 2016

- Dec 10, 2016. US-Canada Treaty Data Working Group.
- February 1, 2016. Tuna Advisory Board (TAB), Post Season, Victoria, B.C.
- February 1, 2016. Consultation Prov. Of B.C. on Post Season
- March 6-8, 2016 - Sea Food Expo – Boston, US
- April 21 – AGM B.C. Tuna Fisherman’s Association – Mill Bay, B.C.
- April 21, 2016 – AGM CHMSF- Mill Bay, B.C.
- April 26-28 Seafood Expo Global- Meet with buyers, MSC, etc. Brussels
- May 4, 2016 - Canada- U.S. Albacore Treaty DATA WORKING GROUP- La Jolla.
- May 10, 2016 Tuna Advisory Board (TAB), Nanaimo, B.C.
- May 19, 2016 Tuna Advisory Board (TAB) Follow Up Conference Call
- June 8, 2016. Open Letter from CHMSF to US related to Treaty
- June 13, 2016 Tuna Advisory Board (TAB) Pre Season Conference Call
- June 22, 2016. MSC Certification Audit- Vancouver, B.C. with DFO/PROV.-
- September 6-8, 2016. Seafood Expo Asia - Hong Kong
- October 25, 2016. Tuna Advisory Board (TAB) – Nanaimo, B.C.
- November 2-4, 2016, China Fisheries and Seafood Expo. Qingdao, China

March 21, 2017

ATTN: Heads of Delegation to IOTC, IATTC, ICCAT and WCPFC

Dear Delegates,

This letter is submitted on behalf of the undersigned companies, non-governmental organizations and fishing industry associations, all of whom recognise that the sustainability of tuna stocks is integral to businesses and livelihoods, as well as the health of the marine environment.

Our companies represent major seafood buyers that source seafood products from a diverse, international supply network. Our non-governmental organizations work in more than 100 countries and engage suppliers and provide advice to retailers, buyers and food service sectors regarding improvements in tuna sustainability. Our fishing industry associations represent a variety of gear types, including purse seine, longline, troll, pole and line and handline vessels active in tuna fisheries worldwide.

Your government serves as an important leader as a member of one or more of the four regional fisheries management organizations (RFMOs) charged with managing the world's tropical tuna fisheries throughout their range. We are writing to bring to your attention our views on the development of harvest strategies and the need for strengthened monitoring, control and surveillance tools, such as 100% observer coverage for purse seine vessels in those RFMOs that do not yet require it and at-sea transshipment activities and monitoring and management of fish aggregating devices (FADs) – pressing issues that we believe are fundamental to sustainable fisheries management - and those that necessitate immediate action by all tuna RFMOs.

We recognize that certain tuna RFMOs have made some initial progress in recent years to develop harvest strategies, including through the establishment of interim target and limit reference points, management objectives, rebuilding time frames for overfished stocks, and conducting management strategy evaluations. In addition, we observe that some RFMOs, such as the IATTC and WCPFC, already have 100% observer coverage for large scale purse seine vessels. All four tuna RFMOs require at least 5% observer coverage on longline and other types of vessels, and some RFMOs are actively developing standards for electronic reporting and monitoring. Finally, we note that all tuna RFMOs collect some data on FADs and have had working groups consider data needs and management options.

However, we wish to underscore that while this initial progress is positive, we urge accelerated action at this year's RFMO meetings to:

- **Develop precautionary harvest strategies, including specific timelines to adopt target reference points, harvest control rules and the other elements of a harvest strategy approach that ensures sustainable fisheries for all tuna stocks;**
- **Adopt a 100% observer coverage requirement for purse seine vessels, where it is not already required, and of at sea-transshipment activities and require the use of the best available observer safety equipment, communications and procedures;**
- **Increase compliance with the mandatory 5% longline observer coverage rates by identifying and sanctioning non-compliance, and adopt a level of coverage that would reduce uncertainty and provide better estimates of bycatch, such as a minimum of 20% which has been recommended by the scientific committees of IATTC and ICCAT;**
- **Adopt standards for electronic reporting and electronic monitoring for all major gear types to enable the implementation of this technology to support robust decision making;**
- **Adopt effective measures for the use of non-entangling FAD designs as a precautionary measure to minimize the entanglement of sharks and other non-target species, and support research on biodegradable materials and the eventual transition to their use in FADs in order to mitigate marine debris; and**
- **Urgently develop science-based recommendations for the management of FADs, including how to integrate FAD based information into stock assessments to reduce uncertainties.**

We request that your government, as a member of one or more of the tuna RFMOs, take active steps to ensure significant progress on these issues at each of the relevant RFMO meetings in 2017, as a matter of priority.

Sincerely,

9.2 Appendix 1. Re-scoring evaluation tables

Rescoring tables for PIs 1.1.2 and 3.2.3 are included in the 1st surveillance report (Mateo and Stocker, 2016).

9.3 Appendix 2. Stakeholder submissions

Dr. Sian Morgan (SCS Global Services) has sent on the behalf of SCS Global Services, MRAG Americas, ME Certification, Acoura Marine and SAI Global a letter to the Chair of the Western and Central Pacific Fisheries Commission (WCPFC).

This letter as well as the WCPFC's response are provided below.

July 6, 2017

Ms. Rhea Moss-Christian
Chair, Western and Central Pacific Fisheries Commission
rhea.moss-christian@wcpfc.int (Sent via email)
Re: Application of CMM 2016-01 to fishing for Yellowfin tuna

Dear Ms. Rhea Moss-Christian,

We represent the Conformity Assessment Bodies SCS Global Services, MRAG Americas, Inc., ME Certification Ltd, Acoura Marine, and SAI Global, who have certified or are assessing WCPFC yellowfin tuna fisheries (yellowfin tuna being either the Principle 1 target species or assessed under Principle 2 as non-target species) against the Marine Stewardship Council's Fishery Certification Requirements. As part of these audits, we review changes to the management system and in particular, consider new or amended Conservation and Management Measures (CMMs) that have been adopted by the Western and Central Pacific Fisheries Commission.

The revised tropical tuna CMM that was adopted in 2016 (CMM 2016-01) contains a revised footnote on the title page that our assessment teams found ambiguous with respect to measures that apply to fishing for yellowfin tuna in 2017. Hence, we are seeking a clear statement from the Commission regarding the intent of this footnote and how this relates to the content of the related paragraphs that it cites (paragraphs 28 and 43).

Firstly, we note the following events that preceded the adoption of this revised CMM and the inclusion of the footnote.

1. With regard to yellowfin tuna purse seine catch CMM 2015-01 contained the statement (paragraph 28) that "At its 2016 regular session the Commission will formulate and adopt appropriate limits for CCMs, based on recommendations from the Scientific Committee, and taking into account other measures in this CMM."
2. The report of the Scientific Committee's 2016 meeting (paragraph 110) includes the comment that "SC12 also noted that the latest catch estimates for 2015 suggest that catch of yellowfin in the longline and purse seine fisheries appears relatively stable and as such several CCMs do not consider yellowfin catch limits in the longline and purse seine fisheries to be immediately necessary."
3. The report of the 2016 Commission meeting (paragraph 402) includes the statement that "The Commission has agreed to review the issue of yellowfin tuna purse-seine catch and longline limits on recommendations from SC. SC had made no recommendations on this and the Chair suggested that if the Commission again chooses to not adopt yellowfin tuna limits in either the purse-seine or longline fishery, WCPFC13 should, by way of drafting some language for the report, ensure there is no misunderstanding in the revised measure to apply in 2017."
4. This is followed in paragraph 404 by the statement that "In reference to CMM 2015-01 paragraph 28 and 43, the Commission agreed that no limits for yellowfin tuna would apply in 2017 for purse seine and longline fisheries. The Secretariat was tasked with including a clarifying note to this effect in the update of CMM 2015-01."

5. CMM 2016-01 contains the sentence in the footnote on the title page that "In addition the Commission agreed that in respect of paragraph 28 and 43, no limits for yellowfin tuna would apply in purse seine and longline fisheries in 2017."
6. No other changes have been made to the text of paragraphs 28 and 43 which still contain statements that CCMs agree to take measures not to increase catches by their vessels of yellowfin tuna by either purse seine (paragraph 28) or longline (paragraph 43). These paragraphs also retained the same (but now outdated) expectations for advice from the SC and follow up action by the Commission.

Despite the stated intention of the Commission that there be no misunderstanding in the revised CMM, the adopted text contains what seems to be contradictory statements.

Our question of the Commission is therefore, **which of the parts of CMM 2016-01 does the Commission consider to be currently in force: is the footnote the key text and there are no limits on the catch of yellowfin tuna, or are paragraphs 28 and 43 in force so that CCMs are required to not increase their catches? If the footnote prevails, under what conditions, if any, would the Commission reinstate catch limits?**

Conversely, if this footnote is not intended to supersede the previous requirement on CCMs to not increase their catches as per paragraphs 28 and 43, what is its intention? We would appreciate if any answer provided could differentiate explicitly with regard to catch and effort provisions.

Paragraphs 28 and 43 of 2016-01 now appear to be legacy text with no intended effect, given the text that they contain calls for actions in 2016 and at the same time, give the explicit statement in the Commission report that there are to be no limits for yellowfin tuna.

In discussions with some CCMs, however, they seemed to be of the opinion that the current version of this CMM still requires that they not increase their catches of yellowfin tuna.

This clarification is important for our MSC assessments of fisheries and for harmonization among WCPFC fisheries, as the absence of any constraints on the level of catch could be an impediment to ongoing certification of any yellowfin tuna fisheries under WCPFC's management.

We hope you are able to advise us promptly on this matter and look forward to your response.

Sincerely,



Dr. Sian Morgan
Program Director, Sustainable Seafood
SCS Global Services

On behalf of SCS Global Services, MRAG Americas, Inc., ME Certification Ltd, Acoura Marine, SAI Global

Cc: Mr. John Hampton, SPC; Graeme Pilling, SPC; Dr. Robert Trumble, MRAG Americas, Inc; Mrs. Chrissie Seiben, ME Certification Ltd; Mrs. Jennifer Humberstone, SCS Global Services; Mr. Alexander Morison, Morison Aquatic Sciences; Dr. Geraldine Cirquet, SAI Global; Dr. Ivan Mateo, SAI Global; Mr. Jason Combes, Acoura Marine



9 July 2017

Dr Sian Morgan
Program Director, Sustainable Seafood
SCS Global Services
Emeryville, CA 94608
SMorgan@scsglobalservices.com

Re: Application of CMM 2016-01 to fishing for Yellowfin tuna

Dear Dr Morgan

Thank you for your letter of 6 July requesting clarification of the interpretation of footnote 1 on the title page of CMM 2016-01.

You have correctly outlined the summary of discussion in the Commission on yellowfin tuna.

As you also note, paragraph 28 of CMM 2016-01 has two elements: first, the requirement in the first sentence that CCMs not increase catches by their purse seine vessels of yellow fin tuna; and second, that the Commission will formulate and adopt appropriate purse seine limits, based on recommendations from the Scientific Committee and any in-season reporting requirements to implement these limits.

Paragraph 43 of CMM 2016-01 has the same two elements: that CCMs not increase catches by their longline vessels of yellowfin tuna; and second that the Commission will formulate and adopt appropriate longline limits, based on recommendations from the Scientific Committee and any in-season reporting requirements to implement these limits.

It was understood by CCMs that the reference to "limits" in both these paragraphs was a reference to specific limits on catches of yellowfin tuna. This interpretation of "limits" is supported by the reference in CMM 2016-01 to other "limits" such as catch limits on bigeye longline catch, or effort limits, such as on high seas purse seine effort, both of which are set out as tables of specific limits in CMM 2016-01. However, there were no recommendations from the Scientific Committee relating to purse seine or longline limits on yellowfin tuna catches. Footnote 1 was included in CMM 2016-01 to indicate that although paragraphs 28 and 43 had enjoined the Commission to formulate and adopt such limits, it had not done so.

Footnote 1 must be read together with the text of paragraphs 28 and 43. In the context of the discussion within the Scientific Committee and Commission, as well as the text of CMM 2016-01, the reference to “limits” in footnote 1 must be interpreted as specific limits on catch or effort. As such it therefore relates to the second element of paragraphs 28 and 43. The footnote does not remove the responsibility on CCMs set out in the first sentence of each paragraph not to increase catches by their purse seine or longline vessels of yellowfin tuna. Had the Commission intended to remove any requirement to comply with paragraphs 28 and 43, it would have included text in the footnote to state that “The Commission agreed not to apply paragraphs 28 and 43” or other such similar text.

I hope this is helpful. Please contact me if you require anything further.

Yours sincerely,



Rhea Moss-Christian
Commission Chair

cc: Mr Feleti Teo, Executive Director
WCPFC

Dr Penny Ridings, Legal Advisor
WCPFC

9.4 Appendix 5. Revised Surveillance Program (if necessary)

The surveillance program is not revised.