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**MSC Public Certification Report**  
*for*  
**AFAA and WFOA South Pacific Albacore Tuna Pole & Line and  
Troll/Jig Fisheries**

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**MRAG Americas, Inc.**

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November 14, 2018

**CLIENT DETAILS:**  
AAFA and WFOA

**MSC reference standards:**  
MSC Fishery Certification Requirements (FCR) Version 2.0

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# 1 Executive Summary

This Public Certification Report sets out the results of the Marine Stewardship Council (MSC) re-assessment of the AAFA and WFOA South Pacific albacore fishery against the MSC Principles and Criteria for Sustainable Fishing.

MRAG Americas was contracted in 2017, by the American Albacore Fishing Association (AAFA) and Western Fishboat Owners Association (WFOA) to undertake the recertification assessment of the South Pacific albacore pole and line and troll and jig fisheries, which were originally certified in August 2007, and recertified in December 2012.

There is one unit of assessment identified, and assessed during the recertification process:

Species	Albacore tuna ( <i>Thunnus alalunga</i> )
Stock Name	South Pacific
Geographical Area	South Pacific
Fishing Method/s	Pole & line and troll/jig
Management System/s	Internationally through the Western and Central Pacific Fisheries Commission (WCPFC), with USA national measures as developed and proposed through the Western Pacific Regional Fisheries Management Council (WPFMC) and the Pacific Islands Regional Office of NOAA/NMFS.
Client Group	AAFA and WFOA members and affiliated fishers.
Other Eligible Fishers	Other US pole & line and troll/jig fishers catching South Pacific albacore tuna.

The assessment was undertaken in accordance with the MSC Fisheries Certification Requirements v2.0 and using the MSC Guidance to MSC Fisheries Certification Requirements v2.0 which sets out the assessment and certification process. As a result, the following steps have been undertaken:

- Announcement of the assessment
- Appointment of the recertification assessment team
- Notification on the use of the assessment tree
- Notification and undertaking of the site visit
- Production of the client draft report that describes the background to the fishery, the fishery management operation and the evaluation procedure and results
- Production of the Peer Review Report
- Response to Peer Review comments, and report revisions where necessary
- Production of the Public Comment Draft Report
- Response to Public Comments received and report revisions where necessary
- Production of the Final Report and Determination
- Production of the Public Certification Report

The assessment of the fishery was performed by Max Stocker, Amanda Stern-Pirlot, and Erin Wilson, covering primarily Principle 1 (target stock), Principle 2 (ecosystem) and Principle 3 (management) components of the MSC standard, respectively. Amanda Stern-Pirlot was also the Team Leader.

A recertification site visit was conducted in La Jolla, California, August 9-11, 2017 with other meetings held remotely during the prior week. During that time the assessment team met with scientists, fishery managers and stakeholders as well as client representatives. The site visit for this recertification assessment was conducted in conjunction with the fourth annual

surveillance audit for the fishery. There were no meetings requested from additional stakeholders (ENGOs) and one written submission was received from a stakeholder asking to be kept informed of the assessment process.

The following strengths and weakness were identified with respect to each Principle:

### **Principle 1**

**Strengths:** The scientific basis for the sustainable target fish stock is strong. There is an active ongoing assessment program in place for addressing areas of uncertainty. An international effort to provide scientifically sound stock assessment advice is also in place.

**Weaknesses:** Weaknesses of the management of the south Pacific albacore tuna fishery relate to the RFMOs lack of progress on developing harvest control rules and an associated target reference point.

### **Principle 2**

**Strengths:**

The highly selective nature of the fishing gear used, and its pelagic nature (never contacting the seabed) ensure that there is negligible bycatch, habitat or ecosystem impacts.

**Weaknesses:**

There is a lack of systematic data collection from the fishery as there is no obligation for logbook records of any non-target species to be kept. This is likely appropriate for a fishery with such an inherently low impact, however improvements in this regard would help increase confidence with regard to understanding of potential impacts particularly to ETP species.

### **Principle 3**

**Strengths:**

The management policies in place both at the domestic and international level have explicit short and long term objectives where the roles and responsibilities of the governing body are clear and well defined.

**Weakness:**

Because of the overall lack of enforcement resources reported both at the domestic and international level for HMS fisheries, it is difficult to assess with a high degree of confidence that sanctions and control mechanisms demonstrably provide effective means of compliance. It is also unclear if decision-making processes respond to issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner. The decision-making processes do not respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation.

Based on the information available to date, the AAFA and WFOA South Pacific Albacore Fishery achieved overall scores of 82.5 for Principle 1, 97.7 for Principle 2, and 86.9 for Principle 3. As such, the fishery is recertified against the MSC Standard, as no indicator scored less than 60, and all average principle scores were above 80.

Two conditions remain open from the previous certification (PI 1.2.1 and 1.2.2), as has been allowed by the MSC for tuna fisheries entering reassessment using version 2.0 of the Fisheries Standard. One condition was added for 3.2.2 and is in alignment with other MSC assessments for South Pacific albacore. In addition, two recommendations have been added relative to PI 1.2.4 and 2.3.3.

All comments and information presented by the peer reviewers and from stakeholders during the additional information gathering phase were considered and the report revised as necessary prior to the publication of the Public Comment Draft Report (PCDR) in August, 2018. Public comments received during the public comment period were considered and the report revised as necessary prior to the publication of the Final Report and Determination.

## 2 Authorship and Peer Reviewers

The assessment of North and South Pacific albacore tuna pole & line and troll/jig fisheries was undertaken by Ms. Amanda Stern-Pirlot, Dr. Max Stocker and Ms. Erin Wilson. Amanda Stern-Pirlot was the Assessment Team Leader.

**Ms. Amanda Stern-Pirlot** is an M.Sc graduate of the University of Bremen, Center for Marine Tropical Ecology (ZMT) in marine ecology and fisheries biology. Ms. Stern-Pirlot joined MRAG Americas in mid-June, 2014 as MSC Certification Manager, and is currently serving on the assessment team for New Zealand Orange Roughy and leading on assessment teams for Washington and California pink shrimp, and Danish plaice, fishmeal, and herring. She has worked together with other scientists, conservationists, fisheries managers and producer groups on international fisheries sustainability issues for the past 10 years. With the Institute for Marine Research (IFM-GEOMAR) in Kiel, Germany, she led a work package on simple indicators for sustainable within the EU-funded international cooperation project INCOFISH, followed by five years within the Standards Department at the Marine Stewardship Council (MSC) in London, developing standards, policies and assessment methods informed by best practices in fisheries management around the globe. Most recently she has worked with the Alaska pollock industry as a resources analyst, within the North Pacific Fisheries Management Council process, focusing on bycatch and ecosystem-based management issues, and managing the day-to-day operations of the offshore pollock cooperative. She has co-authored a dozen publications on fisheries sustainability in the developing world and the functioning of the MSC as an instrument for transforming fisheries to a sustainable basis.

**Max Stocker.** Dr. Stocker is a scientist with over 38 years of extensive experience in fisheries science. He is currently proprietor of Stocker & Associates Consultants conducting Marine Stewardship Council (MSC) certification projects. Since 2009 he has worked as a team member for both principles 1 and 3 on a number of tuna and groundfish MSC assessments in the Pacific and Indian Oceans. Dr. Stocker has conducted many surveillance audits, several MSC peer reviews, and has also been involved in the development and evaluation of new MSC P1 assessment methodology. He is an MSC certified Fishery Team Member. Dr. Stocker 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). He served as co-chair of the Stock Assessment Working Group of the Scientific Committee of the WCPFC and chaired the ISC Albacore Working Group. From 1978-2006 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, and made over 50 presentations in national and international scientific meetings. Dr. Stocker chaired the Pacific Scientific Advice Review Committee (PSARC) for many years and edited and published over 30 advisory documents on the stock status of marine species and the implications of harvest management on these stocks. Additionally, Dr. Stocker served as in-house stock assessment consultant to the New Zealand Fishing

Industry Board in the early 1990s conducting peer reviewed stock assessments, participating in the peer review process, and advising the Board on inshore and Deepwater fisheries.

**Ms. Erin Wilson.** Erin Wilson joined MRAG Americas, Inc. as a Fisheries Consultant in February 2015. She has collaborated on several MSC assessments and conducts routine audits for the International Seafood Sustainability Foundation. Prior to joining MRAG Americas, she worked at the Oregon Department of Fish and Wildlife (ODFW) as a Natural Resource Specialist and Biological Technician for the Oregon Marine Reserves. Relevant skills and experience include research with the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) at Oregon State University, Dive Operations at Mote Marine Laboratory in Sarasota Florida, aquarist/biologist at the Texas State Aquarium, and conducting socioeconomic profiles on coastal communities. She received a M.Sc. in Marine Resource Management from Oregon State University and a B.S. in Zoology from Colorado State University, along with a Spanish minor. Her primary research areas involve sustainability for coastal communities and the commercial fishing industry.

## **PEER REVIEWERS**

**Jo Akroyd.** Jo is a fisheries management and marine ecosystem consultant with extensive international and Pacific experience. She has worked at senior levels in both the public and private sector as a fisheries manager and marine policy expert. Jo was with the Ministry of Agriculture and Fisheries in New Zealand for 20 years. Starting as a fisheries scientist, she was promoted to senior chief fisheries scientist, then Fisheries Management Officer, and the Assistant Director, Marine Research. She was awarded a Commemoration Medal in 1990 in recognition of her pioneering work in establishing New Zealand's fisheries quota management system. Among her current contracted activities, she is involved internationally in fishery certification of offshore, inshore and shellfish fisheries as Fisheries Management Specialist and Lead Assessor for the Intertek Fisheries Certification audit team. She has carried out the Marine Stewardship Councils' (MSC) certification assessment for sustainable fisheries. Examples include NZ (hoki, southern blue whiting, albacore, hake, scallops), Fiji (longline albacore) Japan (pole and line tuna, flatfish, snowcrab, scallops), China (scallops), Antarctica (Ross Sea toothfish fishery).

**Dr. Joseph E. Powers** has been involved in fisheries issues for more than 40 years, conducting stock assessments, coordinating international stock assessment research, communicating scientific advice to fishery management councils and commissions and also serving as the senior marine fisheries manager in the southeast US. His background includes: professor of marine resource assessment at Louisiana State University; Senior Stock Assessment Scientist of the US's National Marine Fisheries Service (NMFS) southeast region, Laboratory Director of a NMFS facility; lead US scientist for Atlantic tuna, swordfish and billfish species for the International Commission for the conservation of Atlantic Tunas (ICCAT); Chair of the Scientific Committee of ICCAT; Chair of the Stock Assessment Committee for Southern Bluefin Tuna; Chair of the Scientific Committee of the Gulf of Mexico Fisheries Management Council and he has worked on numerous Marine Stewardship Council assessments of tunas, swordfish, hake and other fisheries resources in the Atlantic, Pacific and Indian Oceans.

### 3 Description of the Fishery

#### 3.1 Unit(s) of Assessment (UoA) and Scope of Certification Sought

##### UoA and Proposed Unit of Certification (UoC)

MRAG Americas confirms that this fishery is within scope for MSC assessment.

Unit Number	Target Stocks	Methods of Catch	Management
1	South Pacific albacore	Tuna pole and line and troll and jig	Internationally through the Western and Central Pacific Fisheries Commission (WCPFC), with USA national measures as developed and proposed through the Western Pacific Regional Fisheries Management Council (WPFMC) and the Pacific Islands Regional Office of NOAA/NMFS.

AAFA and WFOA members are eligible. Other albacore pole and troll vessels having an HMS permit and approved by either WFOA or AAFA and listed as such are eligible.

This UoA was chosen because it reflects the range of the stock where it interacts with the AAFA and WFOA fishing fleet.

##### 3.1.1 Final UoC(s)

The final UoC is identical to the above-described UoA, including the description of other eligible fishers. The reason for choosing this UoC is the same as the reason give above for choosing the UoA.

##### 3.1.2 Total Allowable Catch (TAC) and Catch Data

**Table 1. TAC and Catch Data (note there is no TAC for this stock)**

<b>Total South Pacific albacore tuna catch</b>	<b>Year</b>	<b>2016</b>	<b>Amount</b>	<b>68,594 t</b>
<b>Total UoA catch of South Pacific albacore tuna</b>	<b>Year</b>	<b>2016</b>	<b>Amount</b>	<b>2,576 t</b>
<b>Total UoC catch of South Pacific albacore</b>	<b>Year</b>	<b>2016</b>	<b>Amount</b>	<b>151 t</b>
<b>Total green weight catch by UoC</b>	<b>Year (most recent)</b>	<b>2016</b>	<b>Amount</b>	<b>151 t</b>
	<b>Year (second most recent)</b>	<b>2015</b>	<b>Amount</b>	<b>156 t</b>

##### 3.1.3 Scope of Assessment in Relation to Enhanced Fisheries

This fishery is not an enhanced fishery.

### **3.1.4 Scope of Assessment in Relation to Introduced Species Based Fisheries (ISBF)**

These are not fisheries based on introduced species.

## **3.2 Overview of the fishery**

Albacore tuna is a highly migratory species (HMS) that is harvested by several countries in the North and South Pacific Ocean. There are distinct albacore stocks in the North and South Pacific, which are managed separately. International management of the South Pacific stock is through the Western and Central Pacific Fisheries Commission (WCPFC), with USA national measures as developed and proposed through Western Pacific Regional Fisheries Management Council (WPFMC) and the Pacific Islands Regional Office of NOAA/NMFS. Management of the US albacore fishery is through the Highly Migratory Species Fishery Management Plan (HMS FMP) of the Pacific Fishery Management Council. Various legislative acts and treaties allow the US albacore fishery to be regulated and allow international management agreements on albacore to be negotiated. Within the US, the Magnuson-Stevens Fishery Conservation and Management Act provides fishery management policy directives, national standards for U.S. fishery management, and provides the enabling legislation to participate in Regional Fishery Management Commissions. Additional national US legislation that must be addressed by the Council when promulgating regulations are: the Endangered Species Act, the Marine Mammal Protection Act, the National Environmental Policy Act and the Administrative Procedures Act. Under the auspices of Article 64 of the 1982 United Nations Law of the Sea (UNCLOS), coastal States and other States whose nationals fish for highly migratory species (such as albacore in the Pacific) are to cooperate through appropriate international organizations to ensure sustainable conservation and management within the States' Exclusive Economic Zones (EEZs) as well as on the high seas.

Albacore in the South Pacific is a highly migratory species that ranges across much of that oceanic area of the South Pacific between approximately 10° and 55° South. Nations including, Japan, Chinese Taipei, Korea, Fiji, French Polynesia, Western Samoa, Vanuatu and other Pacific Island States also prosecute the stock, almost exclusively using long line gear. New Zealand's South Pacific albacore fishery is primarily a troll fishery confined to its own EEZ. The Vanuatu longline fishery is primarily executed by licensed Chinese and Taiwanese vessels.

The extent of the albacore migration is variable, and a significant characteristic of the U.S. surface fishery is the wide north-south variation in the geographical locations of the most productive fishing grounds. A large proportion of this spatial variability is at the multi-decadal rather than the inter-year time scale.

The majority of the product landed by AAFA and WFOA is canned and sold to markets in the USA and Europe. Fresh, brine, bled brine and/or blast frozen product are sold to U.S. domestic and international markets, including canned tuna to Sashimi grade loins, and everything in between, are some of the many varieties of products derived from the South Pacific Pole & Line, Troll & Jig fishery.

## **3.3 Principle One: Target Species Background**

### **3.3.1 Biology of the target species**

There are numerous articles in the primary literature, grey literature and books documenting details of the life-history and ontogeny of Pacific albacore. The best historical source of this information is summarized by Foreman (1980), whereas the best recent information can be found in the 2015 stock assessments (Harley *et al.* 2015).

Albacore tuna, *Thunnus alalunga*, is a highly migratory species (HMS) caught in commercial fisheries throughout the world's oceans and the Mediterranean Sea. Albacore tuna belong to the family *Scombridae*. Albacore have unique biological characteristics that enable them to swim continuously at very high speeds and cover vast areas during annual migrations. Albacore are metallic dark blue along the back, with dusky to silvery white coloration along the sides and on the belly. Albacore are negatively buoyant fish that lack a swim bladder and have lost many structures needed to pump water over their gills to obtain oxygen, which collectively, translates to a life history strategy that requires constant swimming.

### **Stock structure**

Albacore tuna in the Pacific Ocean consists of two distinct stocks, the north Pacific stock and the south Pacific stock (the subject of this evaluation). The equator is considered the north-south boundary between albacore stocks. Based on analysis of genetic data there is differentiation between north and south Pacific albacore (Takagi *et al.* 2001).

### **Distribution and migration**

Mature albacore (min 80 cm FL) spawn in tropical and subtropical waters between 10° S and 25° S during the austral summer (Ramon and Bailey 1996). One year after spawning, juveniles (45-50 cm FL) are caught in surface fisheries in New Zealand's coastal waters, and in the vicinity of the sub-tropical convergence zone (STCZ, at about 40° S) in the central Pacific (Harley *et al.* 2015). From this region, albacore appear to gradually disperse north, but may migrate seasonally between tropical and sub-tropical waters. These seasonal migrations have been inferred from monthly trends in longline catch rates in sub-equatorial waters (Langley 2004). Catch rates in sub-equatorial waters peak during December-January.

### **Physiology and Morphology**

Albacore are literally 'built for speed' in an ocean environment, with torpedo-shaped (fusiform) bodies, smooth skin (tiny, cycloid scales), and streamlined fins, which enable the fish to reach speeds of over 80 kilometres h<sup>-1</sup> for short periods of time. Their tail fin is deeply forked and lunate in shape, enabling the tremendous thrust needed to maintain high speeds. Albacore have highly specialized physiological functions that allow for rapid movement and sustained endurance. They have a highly evolved circulatory system that includes counter current exchangers that act to reduce the loss of heat generated by increased muscular activity. This circulatory system allows them to regulate their body temperature. This circulatory system allows them to regulate their body temperature. They maintain their body temperatures at higher levels than the temperature of the water in which they swim (Graham and Laurs 1982).

### **Maturity and reproduction**

Albacore mature at about 80 cm fork length (FL) Hoyle *et al.* (2015). The weighted estimates of the length and age at 50% maturity were 87 cm FL and 4.5 years, respectively. For the 2015 stock assessment, the maturity-at-age schedule assumed in the model was taken directly from the previous assessment (Hoyle *et al.* 2012).

### **Mortality**

The instantaneous natural mortality rate (M) is believed to be between 0.2 and 0.5 y<sup>-1</sup> with significant numbers of fish reaching 10 years or more (Hoyle *et al.* 2015). For the 2015 stock assessment natural mortality was fixed at 0.3 y<sup>-1</sup> to be consistent with other albacore tuna stock assessments (Hoyle *et al.* 2015)

### **Longevity**

Longevity of albacore is at least 14 years. The maximum age estimated from otoliths readings collected in 1969 was 14.3 years (Farley *et al.* 2013). A tagged albacore was found to be at liberty for 11 years in the South Pacific (Hoyle *et al.* 2015).

### **Growth**

Daily growth increments from otolith readings, indicate that initial growth is rapid, with albacore reaching 45– 50 cm (FL) in their first year (Leroy and Lehody 2004; Williams *et al.* 2012). Subsequent growth is slower, at approximately 10 cm y<sup>-1</sup> from ages 2–4, declining thereafter (Williams *et al.* 2012). Maximum recorded length is about 120 cm (FL), and males grow to a larger size than females (Hoyle *et al.* 2015).

### **Behaviour**

Similar size albacore travel together in school 'groups' that contain small aggregations of fish, which collectively, can be up to 30 km wide. At the onset of the migration, during the spring and summer months in the western Pacific Ocean, the young albacore form relatively small, loose, and broadly scattered groups. As the seasons progress, the groups become more compact and contain greater numbers of schools. The more sedentary, older albacore typically form more compact schools (Foreman 1980). Although albacore spend much of their time in the surface waters of the ocean (epipelagic zone), they will also explore deeper waters of the thermocline (mesopelagic zone) in search of prey.

### **Trophic structure**

Albacore are top carnivores in the ocean ecosystem. They prey opportunistically on schooling species, such as sardine, anchovy, and squid. Albacore consume enormous amounts of food to fuel their high metabolism. Albacore are harvested by man, as well as preyed upon by the larger species of billfish, tuna, and sharks. Given albacore are routinely harvested by both surface-fishing gear (e.g., troll and pole-and-line) and subsurface-fishing gear (e.g., longline), it is likely that they feed in at least the upper 500 m of the ocean.

Albacore are not a low trophic level (LTL) species.

### **3.3.2 History of fishing and management**

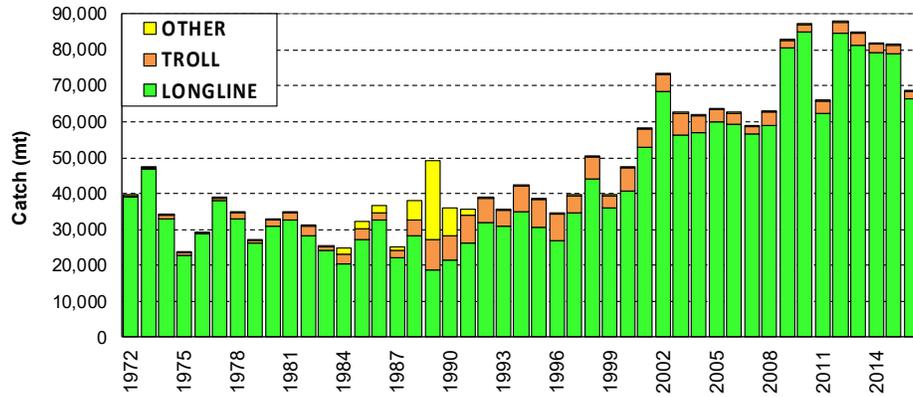
U.S. troll vessels began exploratory fishing operations for albacore in the central South Pacific east of New Zealand in 1986, leading to an expansion of the U.S. albacore troll fishery into the South Pacific during the austral summer months of November through to March. The number of U.S. vessels that have participated in the fishery from 1995 - 2016 has varied between 1 and 53, with an average of 25 per year, depending on the market price for albacore, fuel costs and other factors.

The distance from the U.S. West Coast to the South Pacific fishing grounds, and the related cost of fuel and the market price of albacore, are important determinants in the participation by AAFA and WFOA vessels in this fishery. Fuel costs in recent years have been high, limiting AAFA and WFOA participation to lower levels.

Two groups of fleets (longliners and trollers) exploit south Pacific albacore. Catch and effort information come primarily from logsheet returns, or for the high seas from the provision of aggregate catch from distant water fishing nations (Piling and Williams 2016).

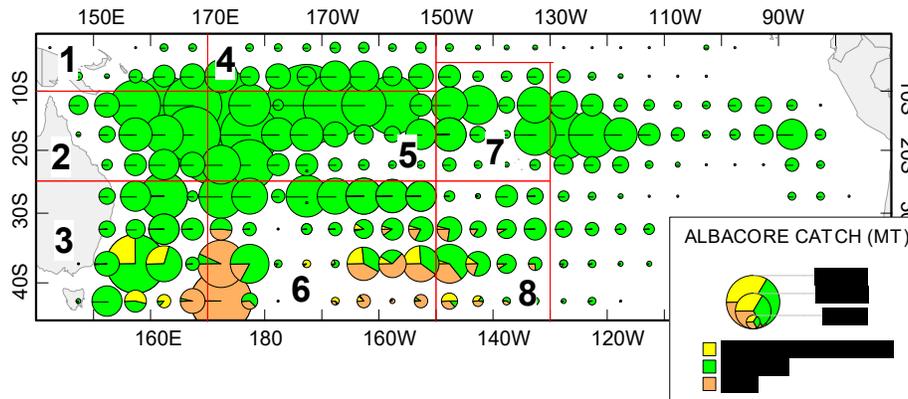
The 2016 south Pacific troll albacore catch (2,097 t) was the lowest catch since 2009. The New Zealand troll fleet (137 vessels catching 1,952 t in 2016) and the United States troll fleet (6 vessels catching 151 t in 2016) accounted for all of the 2016 albacore troll catch (Williams *et al.* 2017). Prior to 2001, south Pacific albacore catches were generally in the range 25,000–50,000 t, with a significant peak in 1989 (49,076 t) when driftnet fishing was still allowed (Fig. 1). Since 2001, catches have greatly exceeded this range, primarily as a result

of the growth in several Pacific Islands domestic and distant water longline fisheries. The south Pacific albacore catch in 2016 (68,601 t) was about 13,000 t lower than in 2015 and nearly 20,000 t lower than the record catch in 2010 of 87,292 t (although the 2016 estimates for some fleets are provisional) (Williams *et al.* 2017).



**Figure 1. South Pacific albacore catch (t) by gear ("Other" is primarily catch by the driftnet fishery) (Williams *et al.* 2017).**

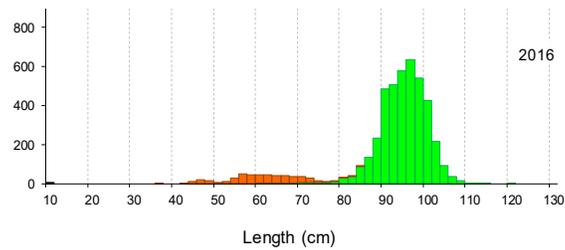
The longline catch of albacore is distributed over a large area of the south Pacific (Fig. 2), but concentrated in the west. The Chinese-Taipei distant-water longline fleet catch is taken in all four regions, while the Pacific Island domestic longline fleet catch is restricted to the latitudes 10°–25°S. Troll catches are distributed in New Zealand's EEZ mainly off the South Island, and along the SCTZ. Less than 20% of the overall south Pacific albacore catch is usually taken east of 150°W (Williams *et al.* 2017).



**Figure 2. Distribution of South Pacific albacore tuna catch, 1988–2016. The eight-region spatial stratification used in stock assessment is shown (Williams *et al.* 2017).**

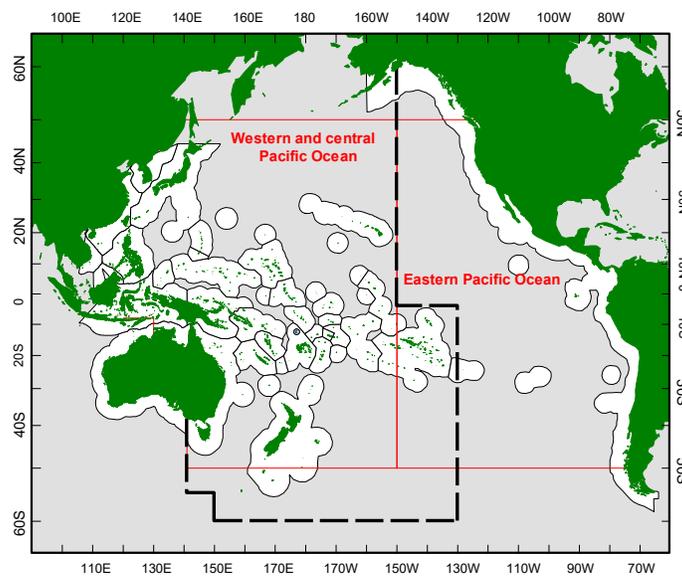
The longline fishery take adult albacore in the narrow size range of 90–105cm and the troll fishery takes juvenile fish in the range of 45–80cm (Fig. 3). Juvenile albacore also show up in the longline catch from time to time (e.g., fish in the range 60–70cm sampled from the longline catch) (Williams *et al.* 2017).

### Catch in thousands of fish per 2-cm size class



**Figure 3. 2016 catch of albacore tuna in the South Pacific Ocean by size and gear type (green–longline; orange–troll) (Williams et al. 2017).**

Since HMS stocks move throughout large areas of the Pacific and are fished by many nations and gear types, domestic management by the U.S. alone is not enough to ensure that harvests are sustainable. The U.S. is a member of the Western and Central Pacific Management Commission, which is responsible for the conservation and management of fisheries for tunas and other species taken by tuna-fishing vessels in the western and central Pacific Ocean (Fig. 4).



**Figure 4. The western and central Pacific Ocean (WCPO), the eastern Pacific Ocean (EPO) and the WCPFC Convention Area (WCP-CA in dashed lines) (Williams et al. 2017)**

### 3.3.3 Stock assessment and information

For the purpose of south Pacific albacore stock assessment a single discreet stock is assumed to exist within the domain of the WCPO model area (Harley *et al.* 2015). Stock assessments for south Pacific albacore tuna are conducted by Secretariat of the Pacific Community’s (SPC) Oceanic Fisheries Programme (OFP) and are provided to WCPFC’s Scientific Committee (SC). The assessment uses an established state-of –the-art stock assessment model – MULTIFAN-CL. Since 1999, the stock has been assessed regularly and the most recent assessments are documented in Hoyle *et al.* (2008b); Hoyle and Davies (2009); Hoyle (2011), and Hoyle *et al.* (2012). Changes in stock status are assessed annually with updates provided each year to the WCPFC Scientific Committee (SC) in

August for the SC to decide on the current stock status. The most current stock assessment will be that for 2018, which unfortunately will not be available until WCPFC-SC-14 (August 2018).

The assessment used for this evaluation was conducted in 2015 (Harley *et al.* 2015) and presented to SC11 in August 2015 (WCPFC 2015a). The SC stock status report was accepted by the WCPFC at the annual meeting in December 2015 (WCPFC 2015b). The 2015 assessment included many improvements over the 2012 assessment based on the recommendations of an independent review of the 2011 bigeye assessment (Iannelli *et al.* 2012)

Harley *et al.* (2015) used the base-case assessment model to determine South Pacific albacore trends in population biomass, spawning stock biomass, recruitment and fishing intensity from 1960 to 2013. There have been significant improvements to the 2015 stock assessment including:

- improvements to the MULTIFAN-CL modelling framework;
- a regional disaggregated framework;
- access to operational data for constructing CPUE indices and regional weights;
- age-length data to improve estimates of albacore growth;
- natural mortality was set to 0.3 in the reference case; and
- additional tagging data.

The 2015 south Pacific albacore tuna stock assessment was conducted using the MULTIFAN-CL (Fournier *et al.* 1998) model with data from 1960-2013 (Harley *et al.* 2015). Technical details of the model are described in Kleiber *et al.* (2013). The MULTIFAN-CL model has several components: 1) the albacore fish population dynamics, 2) the fishery dynamics, 3) the dynamics of tagged fish, 4) data observation models, 5) parameter estimation procedure, and 6) stock assessment interpretation (Hoyle *et al.* 2015). The model uses maximum likelihood estimates to fit a range of parameters.

Recruitment in terms of the MULTIFAN-CL model is the appearance of age-class 1 fish in the population. Recruitment was assumed to have a weak relationship with the spawning stock biomass via a Beverton-Holt stock-recruitment relationship with a fixed steepness of 0.8 (Harley *et al.* 2015). Steepness is defined as the proportion of virgin recruitment ( $R_0$ ) obtained when the spawner abundance is 20% of the virgin level ( $SB_0$ ). The reference case was parameterized with 0.8, and sensitivities of 0.65 and 0.95 were considered. It is well known that the higher  $h$  is, the more resilient the population is, and the more robust the stock is to harvesting.

Table 1. Description of the structural sensitivity grid used to characterize uncertainty in the assessment. The base case option is denoted in bold face (WCPFC 2015a).

Name	Description	One-off change model name(s)
Natural mortality	0.25, <b>0.30</b> , and 0.40 per year	Low_M and High_M
Length data weighting	<b>Standard weighting</b> or down-weighted	SZ_dwnwght
Steepness	0.65, <b>0.80</b> , and 0.95	h_0.65 and h_0.95

In 2016 an alternate stock assessment of south Pacific albacore tuna using Stock Synthesis model (SS3) was presented (Cao *et al.* 2016). The data sets used in this assessment (1960-2013), including catch (14 fisheries), abundance indices (standardized CPUE), and length composition, were the same as those used in assessment with MULTIFAN-CL in 2015, but

no spatial structure was modelled in the SS3 model. The assessment results from the SS3 model run are similar to those from the 2015 MULTIFAN-CL results. The base-case model (natural mortality=0.3  $y^{-1}$  and steepness=0.8 for the B-H spawner-recruit relationship) resulted in an MSY estimate of 77,948 t. The spawning potential that would support the MSY is estimated to be 29% of virgin spawning potential. Current fishing mortality was estimated to be less than the level that would produce MSY. Current biomass is estimated to be higher than the level that would support the MSY (Cao *et al.* 2016).

### 3.3.4 Stock status

The stock assessment estimated stock status averaged over the period 2009-2012 ('current') and 2013 ('latest') relative to reference points. SC11 provided advice to the Commission based on the 'reference case' assessment model. Uncertainty in the model was characterized based upon 18 model runs describing dynamics under different assumptions (Table 1). Estimates of the 5%, median and 95% values on the base case estimate are presented in Table 2.

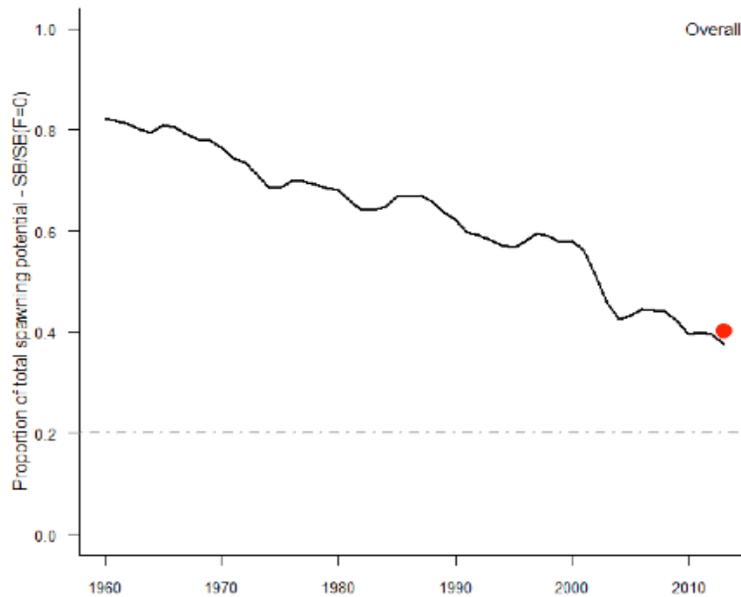
Table 2. Estimates of management quantities for base case and grid of 18 models (see Table 1 for details) (WCPFC 2015a).

	Base case	5%	Grid Median	95%
MSY (t)	76,800	62,260	84,980	129,814
$C_{latest}/MSY$	1.00	0.60	0.91	1.23
$F_{current}/F_{MSY}$	0.39	0.13	0.34	0.62
$B_0$ (t)	711,400	638,465	806,900	1,024,500
$B_{current}$ (t)	456,984	365,962	509,653	783,308
$SB_0$ (t)	396,500	368,925	438,700	502,275
$SB_{MSY}$ (t)	57,430	35,762	59,180	90,778
$SB_{F=0}$ (t)	408,361	392,358	442,163	486,146
$SB_{latest}$ (t)	164,451	131,456	190,467	272,696
$SB_{latest}/SB_{MSY}$	2.86	1.74	3.20	7.03
$SB_{latest}/SB_{F=0}$	0.40	0.30	0.44	0.60

The estimated MSY (76,800 t) is lower than the MSY estimated in the 2012 assessment (2012 MSY = 99,095 t). Based on the range of MSY estimates (Table 3) current catch is likely at or slightly less than MSY (WCPFC 2015a).

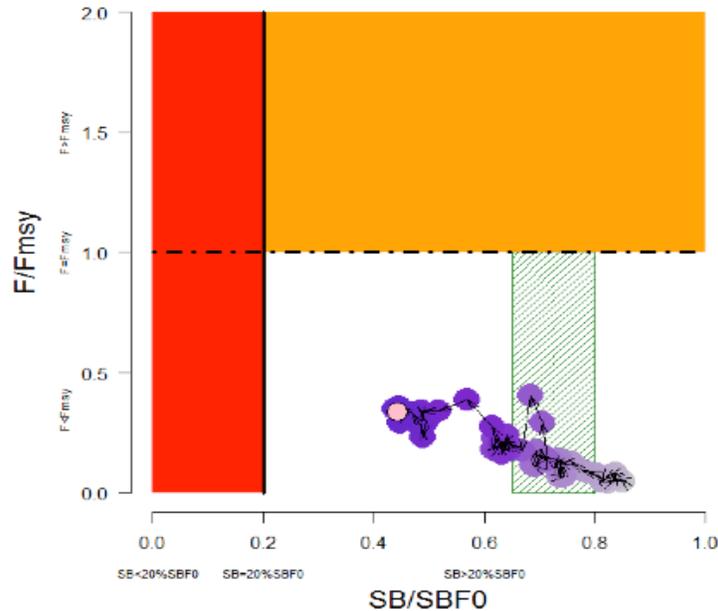
Fishing mortality has generally increased over time.  $F_{current}$  is estimated at 0.39 (CI 0.13-0.62) indicating that overfishing is not occurring (Table 2; Figure 2) (WCPFC, 2015a).

Estimates of total spawning potential shows a long-term decline, aside from peaks in 1970 and 2000, from 1960 to 2013 (Fig. 5).  $SB_{latest}$  was estimated to be 164,451 t (CI 131,456-272,696 t) or to be 40% of  $SB_{F=0}$  (Harley *et al.*, 2015). The latest estimates of spawning biomass are above both the level that will support the MSY ( $SB_{latest}/SB_{MSY} = 2.86$ ; CI 1.74-7.03) and the adopted LRP of 20%  $SB_{F=0}$  ( $SB_{latest}/SB_{F=0} = 0.40$ ; CI 0.30-0.60).



**Figure 5. Ratio of exploited to unexploited spawning potential,  $SB_{latest}/SB_{F=0}$ , for the reference case. The current WCPFC limit reference point of  $20\%SB_{F=0}$  is provided for reference as the grey dashed line and the red circle represents the level of spawning potential depletion based on the agreed method of calculating  $SB_{F=0}$  over the last ten years of the model (excluding the last year) (Harley *et al.*, 2015).**

The Majuro (Kobe plot) plot (Figure 6) illustrates the stock status of South Pacific albacore in terms of spawning potential depletion and fishing mortality from the base case model indicating that the albacore remains in the healthy zone (Harley *et al.*, 2015). Spawning Biomass in the absence of fishing ( $SB_{F=0}$ ) estimated for the period 2003-2012 is the basis for the established limit reference point (LRP) and is calculated as a spawning potential of 408,361 t which is 3% higher than the unfished equilibrium biomass ( $SB_0$ ). The adopted LRP is  $20\% SB_{F=0}$  or a spawning potential of 81,672 t.  $SB_{latest}/SB_{F=0}$  is estimated to be  $40\%$  of  $SB_{F=0}$  (Harley *et al.*, 2015).



**Figure 6. Majuro plot: representing stock status in terms of spawning potential depletion and fishing mortality. The red zone represents spawning potential levels lower than the agreed limit reference point which is marked with the solid black line. The orange region is for fishing mortality greater than  $F_{MSY}$  ( $F_{MSY}$  marked with the black dashed line). The lightly shaded green rectangle covering  $0.65-0.80SB_{F=0}$  is the ‘space’ consistent with the candidate economic-based Target Reference Points provided in Pilling *et al.* (2015). The pink circle the latest period as defined in Table 2 (Harley *et al.*, 2015).**

The WCPFC Scientific Committee (SC11) concluded that the South Pacific albacore spawning stock is currently above both the level that will support MSY and the adopted spawning biomass limit reference point, and overfishing is not occurring ( $F < F_{MSY}$ ) (WCPFC, 2015a).

SC11 further advised that while overfishing is not occurring, further increases in effort will yield little or no increase in long-term catches and result in further reduced catch rates. Despite the fact that the stock is not overfished and overfishing is not occurring, SC11 reiterates the advice of SC10 recommending that longline fishing mortality and longline catch be reduced to avoid further decline in the vulnerable biomass so that economically viable catch rates can be maintained (WCPFC, 2015a). Please note that there was no advice to curtail the surface troll fishery for South Pacific albacore.

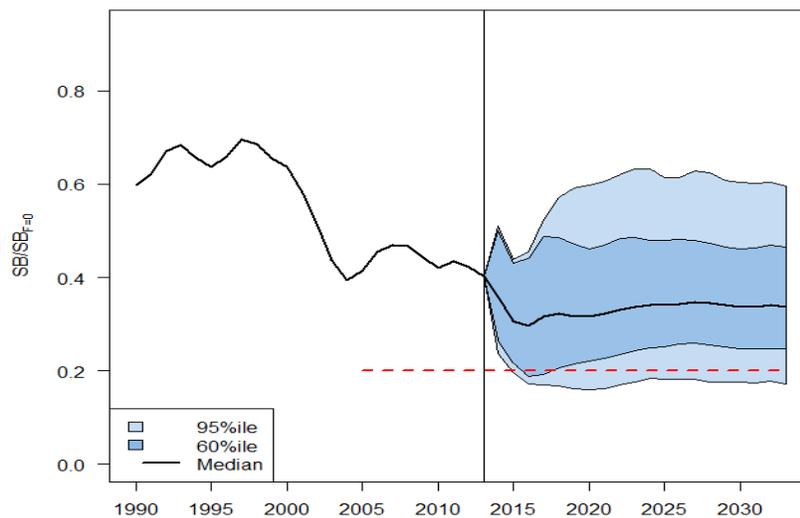
To examine the potential consequences of recent fishing levels relative to the adopted LRP for South Pacific albacore tuna ( $20\%SB_{2003-2012, F=0}$ ), the OFP-SPC performed stochastic 20-year effort-based projections (WCPFC, 2015c). These projections examined different assumptions of population dynamics (defined by nine stock assessment runs from the 2015 MULTIFAN-CL stock assessment, a subset of those selected by SC11 to present key uncertainties within SC11 advice and capturing uncertainty in stock recruitment steepness and natural mortality), and future conditions (variability in future recruitment around the stock-recruitment relationship), consistent with the recommendations on inclusion of uncertainty within projections from WCPFC-SC9 and in Berger *et al.* (2013).

### 3.3.5 Conservation information

Future southern longline and troll fisheries effort was modelled at levels equal to those seen in 2013 (status quo). Potential future adult (spawning) biomass levels relative to unfished

levels were examined, and the probability that the south Pacific albacore stock may fall below LRP was calculated (Fig. 7).

Across the nine stock assessment models used within the analysis, the average stock status in 2013 (the last year of the assessment) was  $SB/SB_{F=0} = 0.41$ . Continuing fishing under recent relatively high fishing effort, the South Pacific albacore tuna stock is predicted to continue to decline on average, falling to  $SB/SB_{F=0} = 0.35$  in 2033, this is a slight improvement on previous estimates (WCPFC 2017b). The main difference from previous reports is that, as provisional effort in 2015 was lower than levels seen in 2013 and 2014. The projected stock status is estimated to have improved slightly where the stock still declines from the 2013 level to  $SB_{2033}/SB_{F=0} = 0.35$ , but risk  $SB_{2033}/SB_{F=0} < SB_{LRP} = 7\%$  rather than about 20% seen in previous projections. Overall vulnerable biomass (a CPUE proxy) in longline fisheries also is estimated to decrease by 7% over that period (WCPFC 2017b).



**Figure 7. Stochastic projections of adult stock status under 2013 longline and troll effort levels. The limit reference point (20%  $SB_{F=0}$ ) is indicated by horizontal dashed red line. Note: uncertainty from 1960 up to 2013 inclusive represents structural uncertainty only (median across the 9 assessment model runs presented for that period); uncertainty after 2013 represents both structural uncertainty and stochastic recruitment (1800 simulation runs) (WCPFC 2017b).**

SC13 noted that (WCPFC 2017c):

*“If 2015 fishing effort levels continue into the future, the stock is predicted to continue to decline on average, falling to  $SB_{current}/SB_{F=0} = 0.35$  in 2033 with a 7% predicted probability of being below the LRP. Overall vulnerable biomass (a CPUE proxy) in longline fisheries is estimated to decrease by 7% from 2013-2033.”*

SC12 noted that no management advice has been provided since SC11. Therefore, the advice from SC11 should be maintained (WCPFC 2016):

1. “The South Pacific albacore spawning stock is currently above both the level that will support the MSY and the adopted spawning biomass LRP, and overfishing is not occurring ( $F$  less than  $F_{MSY}$ ).
2. While overfishing is not occurring, further increases in effort will yield little or no increase in long-term catches and result in further reduced catch rates.

3. *Decline in abundance of albacore is a key driver in the reduced economic condition experienced by many PICT domestic longline fleets. Further, reductions in prices are also impacting some distant water fleets.*
4. *For several years, SC has noted that any increases in catch or effort in sub-tropical longline fisheries are likely to lead to declines in catch rates in some regions (10oS-30oS), especially for longline catches of adult albacore, with associated impacts on vessel profitability.*
5. *Despite the fact that the stock is not overfished and overfishing is not occurring, SC11 reiterates the advice that longline fishing mortality and longline catch be reduced to avoid further decline in the vulnerable biomass so that economically viable catch rates can be maintained.”*

SC13 provided the following management advice (WCPFC 2017c):

*“Pending a new assessment in 2018, SC13 recalls its previous advice from SC11 and SC12 that longline fishing mortality and longline catch be reduced to avoid further decline in the vulnerable biomass so that economically viable catch rates can be maintained, especially for longline catches of adult albacore. SC13 recommends that this advice be taken into consideration when the TRP for South Pacific albacore is discussed at WCPFC14.”*

### **3.3.6 Reference points**

The most relevant discussion of reference points in the international fisheries domain are provided in Annex II of the UN Fish Stocks Agreement (Anon. 1995), namely the “Guidelines for Application of Precautionary Reference Points in Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks”. The important concepts provided in that annex pertinent to limit reference points are repeated below (with emphasis added):

- a) Two types of precautionary reference points should be used: conservation, or limit, reference points and management, or target, reference points. Limit reference points set boundaries which are intended to constrain harvesting within safe biological limits within which the stocks can produce maximum sustainable yield.
- b) Precautionary reference points should be stock-specific to account, inter alia, for the reproductive capacity, the resilience of each stock and the characteristics of fisheries exploiting the stock, as well as other sources of mortality and major sources of uncertainty.
- c) Fishery management strategies shall ensure that the risk of exceeding limit reference points is very low. If a stock falls below a limit reference point or is at risk of falling below such a reference point, conservation and management action should be initiated to facilitate stock recovery.
- d) When information for determining reference points for a fishery is poor or absent, provisional reference points shall be set. Provisional reference points may be established by analogy to similar and better-known stocks.
- e) The fishing mortality rate which generates maximum sustainable yield should be regarded as a minimum standard for limit reference points.

Article 6 of the WCPFC Convention (WCPFC 2000) requires that the guidelines of Annex II of the UNFASA be applied, and ultimately that stock-specific limit reference points (LRPs) and target reference points (TRPs) be determined.

At the seventh regular session the SC (WCPFC 2011) recommended that the Commission adopt the hierarchical approach to identify key LRPs for key target species in the WCPFC as follows:

Level	Condition	LRPs
Level 1	A reliable estimate of steepness is available	$F_{MSY}$ and $B_{MSY}$
Level 2	Steepness is not known well, if at all, but the key biological (natural mortality, maturity) and fishery (selectivity) variables are reasonably well estimated.	$F_{X\%SPR_0}$ and either $X\%SB_0$ or $X\%SB_{current,F=0}$
Level 3	The key biological and fishery variables are not well estimated or understood.	$X\%SB_0$ or $X\%SB_{current,F=0}$

At the eighth regular session, WCPFC endorsed the hierarchical approach to identifying limit reference points, tasked the Scientific Services Provider (SPC) with preparing proposed limit reference points for the consideration of SC8, and directed SC8 to take account of WCPFC8's concerns regarding reference points in its further deliberations (WCPFC 2012a).

At its eight regular session the SC (WCPFC 2012b) recommended that the LRP for south Pacific albacore to be Level 2, 20%  $SB_{recent,F=0}$ . WCPFC adopted 20% $SB_{F=0}$  as a LRP (WCPFC 2013). Work is underway for defining the risk level for exceeding the limit. The work is done through the SC, which is holding Management Objective Workshops (e.g., WCPFC 2014b). There still needs to be agreement on acceptable level of risk of breaching the LRP to guide management decisions.

$SB_{F=0}$  calculated for the period 2002-2011 is the basis for the limit reference point and this is a spawning potential of 408,361 t, which is 3 % higher than  $SB_0$ . The LRP is 20%  $SB_{F=0}$  which is 81,672 t.  $SB_{latest}$  was estimated to be 40% of  $SB_{F=0}$  (Harley *et al.* 2015).

WCPFC has managed stocks in relation to MSY related reference points. The stock level that produces MSY is the implicit target reference point (TRP) for south Pacific albacore. However, since the 2015 stock assessments shows that  $SB_{MSY}$  is lower than the agreed LRP, alternate TRPs will have to be found.

WCPFC13 did not adopt the interim TRP proposal in WCPFC13-2016-DP09, but agreed on the following (WCPFC 2017d):

*“WCPFC13 requested that existing analyses of the implications of different TRP levels – in terms of total catch and effort changes required – should be re-circulated to CCMs by FFA before the end of December 2016, and that the Scientific Services Provider assist CCMs in understanding the economic implications of different TRPs for their vessels before SC13.*

*WCPFC13 agreed to defer the possible adoption of an interim Target Reference Point for the South Pacific Albacore stock, which had originally been agreed to take place in 2015 under the Harvest Strategy Work Plan, until December 2017 at the latest.*

*The Commission directed that further discussion of the TRP should take place over the course of 2017 as part of the ongoing consultative process for the development of a Bridging Measure for the Conservation and Management of the South Pacific Albacore stock, and should include a report on progress by the Convenor of that process to the 13th WCPFC Scientific Committee.”*

### 3.3.7 Harvest strategy and control rules

Management action for south Pacific albacore are currently set out in CMM 2015-02 (WCPFC 2015b: Attachment I). The Commission adopted in accordance with the Article 10 of the WCPFC Convention that:

1. *Commission Members, Cooperating Non-Members, and participating Territories (CCMs) shall not increase the number of their fishing vessels actively fishing for South Pacific albacore in the Convention Area south of 20°S above 2005 levels or recent historical (2000-2004) levels.*
2. *The provisions of paragraph 1 shall not prejudice the legitimate rights and obligations under international law of small island developing State and Territory CCMs in the Convention Area for whom South Pacific albacore is an important component of the domestic tuna fishery in waters under their national jurisdiction, and who may wish to pursue a responsible level of development of their fisheries for South Pacific albacore.*
3. *CCMs that actively fish for South Pacific albacore in the Convention Area south of the equator shall cooperate to ensure the long-term sustainability and economic viability of the fishery for South Pacific albacore, including cooperation and collaboration on research to reduce uncertainty with regard to the status of this stock.*
4. *CCMs shall report annually to the Commission the annual catch levels taken by each of their fishing vessels that has taken South Pacific albacore, as well as the number of vessels actively fishing for South Pacific albacore, in the Convention area south of 20°S. Catch by vessel shall be reported according to the following species groups: albacore tuna, bigeye tuna, yellowfin tuna, swordfish, other billfish, and sharks. Initially this information will be provided for the period 2006-2014 and then updated annually. CCMs are encouraged to provide data from periods prior to these dates.*
5. *This measure will be reviewed annually on the basis of advice from the Scientific Committee on South Pacific albacore.*

In 2015, Forum Fisheries Agency (FFA) members introduced a revised proposal for a harvest strategy workplan (WCPFC 2015b). Australia commented that the FFA proposal for a harvest strategy work plan and timeline was practical, acknowledging there is only so much that can be done in one year. New Zealand noted the particular importance of committing to a TRP for the management of South Pacific albacore to help restore the economic viability of the southern longline fishery.

At the Twelfth Regular Session of the Commission (WCPFC 2015a), the Commission adopted the workplan for the adoption of Harvest Strategies under CMM 2014-06 (Attachment Y). The Commission tasked the SC with support from the Scientific Service Provider to undertake the activities specified in the agreed workplan.

The workplan is intended to give effect to the requirements contained in paragraph 13 of CMM 2014-06 (WCPFC 2014a):

*“The Commission shall agree a workplan 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. This workplan will be subject to review in 2017. The Commission may agree timeframes to adopt harvest strategies for other fisheries or stocks.”*

The proposed schedule of actions to adopt or refine harvest strategies is provided for skipjack, bigeye, yellowfin and South Pacific albacore. These actions in the draft work plan are based upon the “Elements of a harvest strategy” in paragraph 7 of CMM 2014-06 (WCPFC 2014a):

*“Elements of a harvest strategy*

*7. 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’).”*

During the fourth Harvest Strategy Workshop (MOW4) an update on revised TRPs was presented (Cartwright 2015). The revised TRPs were based on an updated 2015 stock assessment (Harley *et al.*, 2015), which featured new spatial structure and new input parameters, and the associated bio-economic analysis. Target levels examined included MSY and a range of financial targets (Cartwright 2015).

Forum Fisheries Agency (FFA) presented a proposal to set the TRP for South Pacific albacore of 45% of the unfished biomass for south Pacific albacore (WCPFC, 2015d). The proposal also suggested the acceptable risk of breaching the adopted LRP of 20%SB<sub>F=0</sub> should be 5% or less (WCPFC 2015d).

At MOW4 Graham Pilling (SPC) provided a preliminary proof-of-concept that HCRs can be based upon catch or effort, based on 2015 south Pacific albacore assessment. The outcomes of this preliminary work provide a basis for future discussions of albacore HCRs for the catch-based control of fishing/harvest (Cartwright 2015).

WCPFC13 agreed to defer possible adoption of an interim Target Reference Point (TRP) for the South Pacific Albacore stock, which had originally been agreed to take place in 2015 under the Harvest Strategy Work Plan, until December 2017 at the latest (WCPFC 2017d). The Commission directed that further discussions of the TRP should take place during 2017 but was subsequently postponed until 2018.

At the Thirteenth Commission meeting the Commission adopted an Updated Harvest Strategy Work Plan (Table 3)(WCPFC 2017d: Attachment N). WCPFC13 after discussion of the “acceptable level of risk (all species)” proposals of the FFA members and the USA, and based on the recommendation of the working group the Commission agreed to (WCPFC 2017d):

- i) not specify, at this time, acceptable levels of risk of breaching the limit reference point for each stock;*
- ii) consider any risk level greater than 20 percent to be inconsistent with the LRP related principle in UNFSA (as referenced in Article 6 of the Convention) including that the risk of breaching limit reference points be very low; and*
- iii) determine the acceptability of potential HCRs where the estimated risk of breaching the limit reference point is between 0 and 20%.”*

**Table 3.** Proposed schedule of actions to adopt a harvest strategy for South Pacific albacore (WCPFC 2017d: Attachment N).

2015	2016	2017
<p>SC provided advice on implications of a range of Target Reference Points for South Pacific albacore.</p>	<p>Commission considered management objectives for the fishery or stock (a).</p> <p>Performance indicators and Monitoring strategy (d).</p> <ul style="list-style-type: none"> <li>• SC provided advice on a monitoring strategy to assess performance against reference points.</li> <li>• SC provided advice on a range of performance indicators to evaluate performance of harvest control rules.</li> <li>• Commission tasked SPC/SC to develop interim performance indicators to evaluate harvest control rules.</li> <li>• [Commission agree to a monitoring strategy to assess performance against reference points.]</li> </ul>	<p>Agree Target Reference Point (b).</p> <ul style="list-style-type: none"> <li>• Commission agree a Target Reference Point for south pacific albacore.</li> </ul> <p>Develop harvest control rules (e) and Management strategy evaluation (f).</p> <ul style="list-style-type: none"> <li>• SC provide advice on candidate harvest control rules based on agreed reference points.</li> <li>• Commission consider advice on progress towards harvest control rules.</li> </ul>

**Table 3 (cont'd).** Proposed schedule of actions to adopt a harvest strategy for South Pacific albacore (WCPFC 2017a: Attachment N).

2018	2019
<p>Develop harvest control rules (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> <li>• SC provide advice on performance of candidate harvest control rules.</li> <li>• TCC consider the implications of candidate harvest control rules.</li> <li>• Commission consider advice on progress towards harvest control rules.</li> </ul>	<p>Develop harvest control rules (e) and Management strategy evaluation (f)</p> <ul style="list-style-type: none"> <li>• SC provide advice on performance of candidate harvest control rules.</li> <li>• TCC consider the implications of candidate harvest control rules.</li> <li>• Commission consider advice on progress towards harvest control rules.</li> </ul>

WCPFC14 adopted an Updated Workplan for the Adoption of Harvest Strategies under CMM 2014-06 (WCPFC 2018, Attachment L).

In the absence of progress on the harvest strategy (CMM 2014-06) at WCPFC13, the south Pacific albacore harvest strategy remains CMM 2015-02. CMM 2015-02 states that CCMs *'shall not increase the number of their fishing vessels actively fishing for South Pacific albacore in the Convention Area south of 20°S above 2005 levels or recent historical (2000-2004) levels'*.

WCPFC14 agreed to prioritise the development and adoption of a Target Reference Point for south Pacific albacore through the following actions (WCPFC 2018):

1. All CCMs with an interest in the Southern albacore fishery jointly commit to review available scientific and economic information to inform their position about appropriate goals for the fishery and corresponding candidate target reference points;
2. Regardless of the results of the 2018 stock assessment and the management advice from SC14 to WCPFC15, SC14 shall dedicate sufficient time in the Management Issues Theme to develop advice for WCPFC15 on candidate target reference points
3. CCMs will work together in advance of WCPFC15 to develop TRP proposals; and
4. WCPFC15 shall adopt a Target Reference Point for south Pacific albacore.

In addition to the WCPFC harvest strategy process, the main albacore coastal states have grouped together under the auspices of FFA to develop the 'Tokelau Arrangement' (FFA 2014). The objective of the Tokelau Arrangement is to develop and implement a South Pacific Albacore Harvest Strategy. The Tokelau Arrangement is a non-binding agreement under which signatories accept catch limits to albacore in their EEZ.

### 3.4 Principle Two: Ecosystem Background

#### 3.4.1 Background

Albacore inhabit the open-ocean, and spend most of their time in the upper layers above 250 m depth (Childers et al. 2011). Albacore distribution, relative abundance and availability to capture are closely associated with oceanic frontal structure (Laurs & Lynn 1991); in the South Pacific, adult albacore are found between the equator and approximately 55°S, but juveniles are most common in the area of the Subtropical Front/Subtropical Convergence Zone (STCZ), between about 30°S and 45°S, in waters of 16 to 21 °C (Table 3) (Laurs 1986, Roberts 1980).

Albacore are primarily daytime, visual predators (Childers et al. 2011). In the South Pacific, albacore are opportunistic carnivores which feed on a wide variety of small fish, planktonic crustaceans, and squid, with juveniles less than 50 cm fork length focusing on planktonic crustaceans, juveniles 50-75 cm fork length consuming a mixture of crustacea, squid, and small fish, with fish becoming increasingly prevalent as the albacore increase in size (Bailey & Habib 1982). Diet can also differ substantially between regions; planktonic crustacea, squid, and small fish were commonly consumed in oceanic areas east of New Zealand, with lanternfish (myctophids) and Pacific saury (*Cololabis saira*) dominating near to New Zealand and Peruvian jack mackerel (*Trachurus symmetricus murphyi*) predominating elsewhere in the STCZ (Bailey 1986). As well as humans, predators of adult albacore are believed to be large marine mammals, sharks and billfishes, while young albacore may also be taken by other larger tunas and fish species (Kitchell et al. 1999).

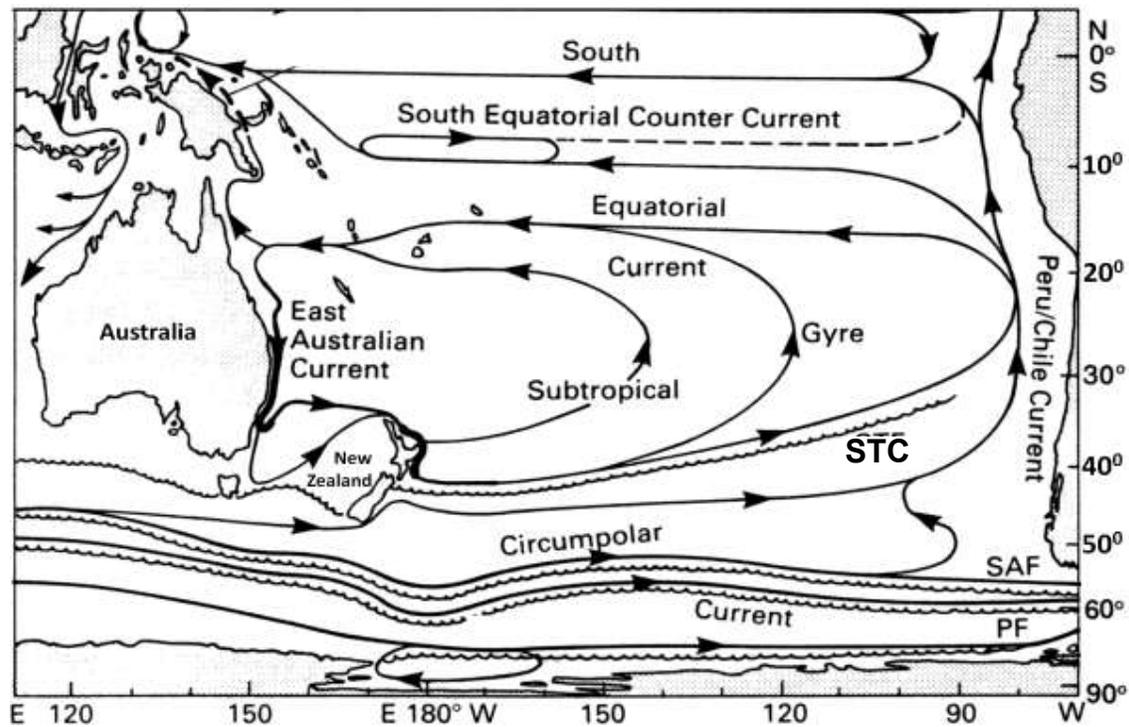


Figure 8. Surface current system of the South Pacific Ocean (Tomczak & Godfrey 1994). Abbreviations include Subtropical Convergence Zone – STCZ.

### 3.4.2 Primary and Secondary Species

The pole & line and troll fishing gears employed in the AAFA and WFOA South Pacific albacore fishery are highly selective; both are employed at the sea surface in deep water such that there is never any contact with the seabed, while the gears always remain attached to the vessel and must be actively fished. The fishing effort is also very low for this fleet, with between 1 and 6 vessels active in the fishery annually between 2012 and 2017, with catches of just 151mt by the US fleet in 2016 (WCPFC 2107c). Because fish are hauled aboard immediately after they become hooked, fishermen are also quickly able to discern if an albacore shoal being targeted is made up of fish that are too small to be retained for economic reasons. In such cases, lines can be pulled in quickly and the vessel moved in search of another shoal containing larger, marketable albacore. Few data are available on bycatch in the fishery, but, according to the ISC (2017e), the U.S. troll and pole-and-line fishery catches almost exclusively albacore with minor incidental catches of skipjack (*Katsuwonus pelamis*), yellowfin (*Thunnus albacares*), and bluefin (*Thunnus orientalis*) tunas, yellowtail (*Seriola lalandi*), and mahi (*Coryphaena hippurus*).

#### Bycatch reduction measures:

Landings from the US South Pacific albacore troll fishery and retained catch data are available for the period 2012 – 2016 (Table 3). Retained species may include very small amounts of a variety of HMS species, but there have been zero recorded catches of these species in the US South Pacific albacore troll fishery in the past five years (Note catches less than 0.5 mt are recorded as zeros; WCPFC 2017a). These very low figures for retained species are supported by data from the New Zealand albacore troll fishery, which show that the total for no retained species has exceeded 0.7 % of the albacore total in any season between 1989/90 and 2007/2008 (Kendrick & Bentley 2010). These figures represent negligible quantities that are considered to pose no risk to HMS stocks.

Data are available on bycatch in the fishery (i.e. fish that are discarded after capture) from observer trips undertaken in the 1990 – 1991 and 1991 – 1992 seasons (Labelle 1993). Consistent with the nature of the gear and the available data on retained catches, bycatch across the entire 1990 – 1991 season was estimated to be 1.7 % of the retained albacore catch, with the majority of the discarded fish being < 57 cm length and still alive (on the basis that they were not in great demand by canneries but may survive being released). Other discarded fish were reported as being shark damaged. On two trips in 1991 – 1992, the bycatch rate was estimated to average 7 % of the total retained albacore catch, a higher figure but from a smaller sample of cruises (Labelle 1993).

**Table 3. Estimated weight (t) of landings by albacore troll vessels of the US and its Participating Territories by species in the WCPFC statistical area for 2012 – 2016 (any figures <0.5 t, including 0, are shown as 0) (WCPFC 2017a).**

Species	2012	2013	2014	2015	2016
Albacore, North Pacific	0	0	0	0	0
Albacore, South Pacific	235	390	445	156	145
Bigeye tuna	0	0	0	0	0
Pacific bluefin tuna	0	0	0	0	0
Skipjack tuna	0	0	0	0	0
Yellowfin tuna	0	0	0	0	0
Other tuna	0	0	0	0	0
<b>TOTAL TUNAS</b>	<b>235</b>	<b>390</b>	<b>445</b>	<b>156</b>	<b>145</b>
Black marlin	0	0	0	0	0
Blue marlin	0	0	0	0	0
Sailfish	0	0	0	0	0
Spearfish	0	0	0	0	0

Striped marlin, North Pacific	0	0	0	0	0
Striped marlin, South Pacific	0	0	0	0	0
Other marlins	0	0	0	0	0
Swordfish, North Pacific	0	0	0	0	0
Swordfish, South Pacific	0	0	0	0	0
<b>TOTAL BILLFISHES</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Blue shark	0	0	0	0	0
Mako shark	0	0	0	0	0
Thresher sharks	0	0	0	0	0
Other sharks	0	0	0	0	0
<b>TOTAL SHARKS</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Mahimahi	0	0	0	0	0
Moonfish	0	0	0	0	0
Oilfish	0	0	0	0	0
Pomfrets	0	0	0	0	0
Wahoo	0	0	0	0	0
Other fish	0	0	0	0	0
<b>TOTAL OTHER</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL</b>	<b>235</b>	<b>390</b>	<b>445</b>	<b>156</b>	<b>145</b>

### 3.4.3 Endangered, threatened and protected (ETP) species

ETP species of potential relevance to the AAFA and WFOA South Pacific albacore fishery include a variety of marine mammal, sea turtle and bird species, however the pole-and-line/troll and jig fishery is not thought to interact with any of these, except the remote possibility of turtle interactions. The Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) are key pieces of US legislation, but the US is not a Party of the Convention on the Conservation of Migratory Species of Wild Animals.

Various federal laws provide protection for special resources, including those for protected species under ESA, MMPA, and MBTA. Interactions of HMS fishing gears with protected species are described in Appendix D of the HMS FMP (PFMC 2016b). This FMP authorizes the adoption of measures to minimize interactions of HMS gears with protected species and to implement recommendations contained in Biological Opinions (ESA), Take Reduction Plans (MMPA), Seabird Management Plans, or other relevant documents pertaining to HMS fisheries. The FMP also authorizes programs to collect information on interactions in any or all HMS fisheries. Fishery-specific measures affecting protected species are included in the initial management measures for drift gillnet and longline fisheries, but protected species interactions with the other gear types (including surface hook-and-line/troll fisheries) are not major issues, and no alternatives were considered for those gears.

The FMP adopts a framework authorization for protected species conservation measures and implements initial conservation and management measures for drift gillnet and pelagic longline fisheries (no need for measures was identified for the troll fleet) as described in section 6.2, Appendix D and the HMS FMP FEIS (PFMC 2006, sections 9.2.5.1-2). The FMP requires general provision for its proposed protected species measures and also for future measures to reduce the takes of protected species and to minimize the risk of adverse impacts from those takes. The framework provisions of the FMP would be used to address new protected species concerns as they are identified. (PFMC 2016b)

Interactions between ETP species and the AAFA and WFOA troll fishery are highly unlikely, given that trolling is highly selective, and the jigs used should preclude the catching of any marine mammal, turtle or seabird species other than possibly through

accidental snagging. However, this risk is minimal and the troll fisheries are not identified in any recovery or spotlight species action plan.

The U.S. National Bycatch Report (Update 2, 2016) assessed the South Pacific albacore troll fishery was deemed to be in Tier 0 for fish, marine mammals and other protected species (NMFS 2016). Tier 0 classification was stated as meaning that bycatch data collection programs have not been implemented, and that neither a method for estimating bycatch nor estimates of bycatch are available. The 2018 NOAA 'List of Fisheries', that as a requirement of the Marine Mammal Protection Act (1972) classified the South Pacific albacore troll fishery as being a Category II ("*occasional incidental mortality and serious injuries of marine mammals*") fishery. The fishery was assessed as being Category II because, although there are no documented injuries or mortalities of marine mammals, the fishery was only introduced to the List of Fisheries in 2009 and there are considered to be limited data on which to judge impacts (NOAA 2017).

### **Marine mammals**

Little data are available on marine mammal interactions in the AAFA and WFOA albacore fishery. What is available comes from either logbooks or an extremely limited observer program run by NMFS (27 trips in 8 years). Since observers were not required to collect interaction data, and the observer program was not conducted in a systematic fashion, a complete analysis of interactions is not possible.

### **Turtles**

The drift gillnet 2000 Biological Opinion states that anecdotal information indicates there are rare occurrences of sea turtle take in the U.S. north pacific albacore fishery (NMFS 2000), but there is no such information pertaining to the south pacific fishery. However, it is not possible to determine if any turtles were killed or seriously injured based on available data. There is the possibility, however remote, of capturing a sea turtle alive while catching bait but this is only potentially relevant in the North Pacific fishery (PFMC 2016b, Appendix D [Updated in 2007]).

### **Seabirds**

This HMS fishery is not regularly observed. Incidental takes of 'albatrosses, unid.' are known to occur in the albacore troll fishery but appear to be infrequent (Cousins and Cooper 2000 citing Bartoo). The extent of seabird interactions is unknown because observer placements on vessels in the fishery have been very rare and observers were not directed to record interactions. There are no records or observations of nor any evidence to suggest there would be any interactions between troll gear and endangered seabirds.

In summary, the small fishing effort of this fleet relative to others in the South Pacific, the highly selective nature of the gear types, information provided in the various recovery and species action plans the lack of any recommendations made regarding a need to collect more data on catches in the South Pacific albacore troll fishery in the US National Bycatch Report (NMFS 2017), it is highly unlikely that the AAFA and WFOA South Pacific albacore troll fishery poses a threat to ETP species.

### **3.4.4 Habitat and ecosystem effects**

The AAFA and WFOA South Pacific troll fishery is highly selective, and operates at the surface in deep, oceanic water around and within the STCZ; there is therefore no interaction with the seabed, while the gear comprises short lines with jigs attached, which at most impact the surface pelagic habitat of the South Pacific in an imperceptible and highly transient manner. There is no recorded catch of other retained or discarded

species, though negligible catches of less than 0.5mt per species are not recorded (WCPFC 2017a).

Oceanic pelagic species are commonly opportunistic carnivores with a wide dietary spectrum. Through co-occurrence and evidence of their response to baited long-lines, species including skipjack tuna (*Katsuwonus pelamis*), yellowfin tuna (*Thunnus albacares*), bigeye tuna (*Thunnus obesus*), and pomfrets (e.g. *Eumegistus* spp., *Brama* spp., *Collybus* spp.) are likely to be competitors of albacore (Murray 1993). Argue *et al.* (1983) reported that juvenile albacore smaller than 12 cm were found in the stomachs of skipjack tuna and wahoo (*Acanthocybium solandri*). It seems likely that other tunas, tuna-like species, and billfish are also likely to prey on small or juvenile albacore, while apex predators such as mako (*Isurus oxyrinchus*) and blue sharks (*Prionace glauca*), billfish, and cetaceans (e.g. *Delphinus* spp.) may take larger individuals. Cookie cutter sharks (*Isistius brasiliensis*) are also known to prey on albacore, taking non-fatal bites from the fish (Hampton *et al.* 1991). Albacore was not, though, found to be a key prey item for any species in the central Pacific (Kitchell *et al.* 1999), and the fishery appears very unlikely to significantly impact other higher trophic-level predators.

Studies (e.g. Baum and Worm 2009) have indicated that large scale removals of large pelagic species can have ecosystem effects such as causing long-term changes in ecosystem structure in the ocean environment. However, the AAFA and WFOA removals of albacore as compared to the total removal of large pelagic species from all fisheries across the South Pacific is extremely small.

### **3.5 Principle Three: Management System Background**

#### **3.5.1 Area of Operation**

Albacore have a Pacific-wide distribution, with separate and distinct stocks in the northern and southern hemispheres. The responsibility for their management is shared by between the IATTC and the WCPFC. The distribution of South Pacific albacore extends beyond the WCPFC Convention Area. The stock is assessed by WCPFC for the area of the Pacific south of the Equator and between 140° E and 110° W. Based on recommendations from its Scientific Committee, the WCPFC formulates and adopts Conservation and Management Measures (CMMs) for South Pacific albacore. The individual member and cooperating country members are then responsible for implementation of the CMMs (Blythe-Skyrme *et al.* 2012). According to FCR SA4.1.1, the jurisdictional category is e., stocks of highly migratory species (HMS).

The US troll fishery for albacore in the South Pacific takes place in international waters. The fishery was developed beginning in the mid-1980s (Laurs *et al.* 1987) in about a 10° latitude band centered about 40°S associated with the Subtropical Convergence Zone (STCZ) between about 120°W and 175°W. This is primarily an austral summer fishery that takes place mostly during December through April (Blythe-Skyrme *et al.* 2012). Most U.S. troll vessels depart from the U.S. West Coast or Hawaii and unload in American Samoa, Fiji, or Tahiti. The total U.S. catch of South Pacific albacore tuna accounts for less than 5% of the total international catch ([http://www.nmfs.noaa.gov/pr/interactions/fisheries/table3/highseas-so\\_pac\\_albacore.html](http://www.nmfs.noaa.gov/pr/interactions/fisheries/table3/highseas-so_pac_albacore.html)).

#### **3.5.2 Recognized groups with interests in South Pacific albacore**

The stock in the South Pacific is targeted by lonline fleets of Japan, Korea, China and Chinese Taipei, by domestic longline fleets in several Pacific Island countries, and by New Zealand-based troll fishery (<http://www.spc.int/oceanfish/en/ofpsection/sam/sam/224->

[albacore-short](#)). The fishery is comprised of vessels that fish with longline on the high seas, outside of any nations' exclusive economic zone (EEZ). Fishing occurs from November through April in the south Pacific, and many of the vessels also participate in the larger North Pacific albacore fishery ([www.westcoast.fisheries.noaa.gov/fisheries/migratory\\_species/hms\\_albacore\\_fishery\\_gear.html](http://www.westcoast.fisheries.noaa.gov/fisheries/migratory_species/hms_albacore_fishery_gear.html)).

### 3.5.3 Consultations leading to the Formulation of the Management plan

Article 64 of the United Nations Law of the Sea Convention mandates States to cooperate directly, or through appropriate international organizations, to ensure the conservation of tunas, both within and beyond the EEZ (UNCLOS 1982). The IATTC and WCPFC formulate overarching resolutions based on recommendations from scientific committees or staff. Member states negotiate agreements on management mechanisms and, once agreed upon, the actual implementation is left to the individual member and cooperating countries (Blythe-Skyrme *et al.* 2012). The South Pacific albacore fishery is currently not managed by regulations implementing any U.S. Fishery Management Plan ([http://www.nmfs.noaa.gov/pr/interactions/fisheries/table3/highseas-so\\_pac\\_albacore.html](http://www.nmfs.noaa.gov/pr/interactions/fisheries/table3/highseas-so_pac_albacore.html)).

The WCPFC is one of the Regional Fisheries Management Organizations (RFMOs) to have been established following the finalization of the United Nations Fish Stocks Agreement. The WCPFC Convention was finalized in 2000 and the Commission established in 2004 (Blythe-Skyrme *et al.* 2012). The WCPFC Commission supports three subsidiary bodies where evaluation occurs: 1) Scientific Committee, 2) the Technical and Compliance Committee, and 3) Northern Committee, which each meet annually (WCPFC Convention).

### 3.5.4 Arrangements for On-Going Consultations

The WCPFC adopted CMM 2014-06 to develop and implement a harvest strategy for key fisheries and stocks in the WCPO. In addition, CMM 2014-06 included an agreed work plan intended to give effect to the requirements contained in paragraph 13 of CMM 2014-06:

*“The Commission shall agree 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. This workplan will be subject to review in 2017. The Commission may agree timeframes to adopt harvest strategies for other fisheries or stocks.”*

In October 2017, an intersessional meeting (WCPFC13) was held regarding the process to bridge the CMM on South Pacific albacore. The WCPFC directed that further discussion of the Target Reference Points (TRP) should take place over 2017 as part of the ongoing consultative process for the development of a “Bridging Measure” for the Conservation and Management of the stock. At the 14<sup>th</sup> regular session of the WCPFC, it was added to the agenda that at the 15<sup>th</sup> regular session of the Commission that WCPFC15 shall adopt Target Reference Points for South Pacific Albacore. In December 2017, a south Pacific ‘roadmap’ was recommended to aid in implementation of the elements needed for the effective conservation and management measures. This roadmap takes into account the outcome of a stock assessment for south Pacific albacore in 2018 and recommends an overall limit for the fishery, ways of distribution and actions required to achieve economic and biological stability in the fishery (WCPFC14-2017-SWG\_SPAL02)

### 3.5.5 Decision Making

Management of south Pacific albacore throughout the Western Central Pacific Ocean (WCPO) is the primarily the responsibility of the WCPFC, including stock assessments and the formulation and adoption of Conservation and Mangement Measures. In accordance with the Article 10 of the WCPFC convention, CMM 2005-02 was adopted for South Pacific albacore. The measure was amended in 2010 and again in 2015. CMM 2015–02 states:

- All Members, Cooperating Non-Members and participating Territories (CCMs) shall not increase the number of fishing vessels actively fishing for South Pacific albacore in the Convention area south of 20°S above 2005 levels or recent historical levels.
- CCMs that actively fish in the Convention Area shall cooperate to ensure economic viability and long-term sustainability for South Pacific albacore, including cooperation and collaboration on research to reduce uncertainty with regard to stock status.
- All CCMs shall report annually to the Commission catch levels, the number of vessels actively fishing in the Convention area south of 20°S for South Pacific albacore.

There are also subsidiary bodies of the Commission that provide advice, recommendations and reports to the Commission. *Article 6* of the WCPFC Convention requires a precautionary approach and a Scientific Committee (SC) to promote and use the best available science for decision making. The WCPFC membership also includes all 26 Secretariat of the Pacific Community (SPC) members. The Oceanic Fisheries Programme (OFP) is part of the Fisheries, Aquaculture and Marine Ecosystems Division of the SPC and is the regional division for tuna research, monitoring, stock assessment and biological and ecological management. It was established to provide scientific services relating to oceanic (primarily tuna) fisheries management. The OFP provides data management, stock assessment services and advice to the WCPFC under an annual service agreement (<http://www.spc.int/oceanfish/en/about-ofp>).

The following background information was taken from the 2012 Intertek Moody Marine Public Certification Report for albacore tuna:

The *Magnuson-Stevens Fishery Conservation and Management Act* (MSA) provides the legislative framework and is the primary law governing marine fisheries management in United States. The Act was first enacted in 1976 and has been amended many times over the years. Two major recent sets of amendments to the law were the:

- The Sustainable Fisheries Act (1996) addresses many topics, among which includes Title V, *Implementation of Western and Central Pacific Fisheries Commission* ([http://www.nmfs.noaa.gov/sfa/sustainable\\_fishereries\\_act.pdf](http://www.nmfs.noaa.gov/sfa/sustainable_fishereries_act.pdf)).
- *Magnuson–Stevens Fishery Conservation and Management Reauthorization Act of 2006*, which has numerous purposes (<http://www.nmfs.noaa.gov/msa2005/index.html>):
  - a. Acting to conserve fishery resources
  - b. Supporting enforcement of international fishing agreements
  - c. Promoting fishing in line with conservation principles
  - d. Providing for the implementation of fishery management plans (FMPs) which achieve optimal yield
  - e. Developing underutilized fisheries
  - f. Protecting essential fish habitats
  - g. Additionally, the law calls for reducing bycatch and establishing fishery information monitoring systems.

The National Oceanic and Atmospheric Agency, National Marine Fisheries Service (NOAA/NMFS) is the US government agency responsible for all aspects of the conservation and management of US fisheries. NOAA/NMFS is also responsible for

carrying out the US policies to manage and conserve marine protected resources. Section 302 of the 1976 Magnuson-Stevens Fishery Conservation and Management Act created eight Regional Fishery Management Councils. The Councils develop fishery management plans and management measures for the US fisheries operating within their adjacent EEZs and for US-flagged fisheries operating on the high seas outside the EEZ. NOAA/NMFS approves and implements these plans and measures (Blythe-Skyrme *et al.* 2012).

### **3.5.6 Objectives for the Fishery**

The *WCPFC Convention, Article 5*, states that the objective is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks, in the western and central Pacific Ocean in accordance with the 1995 UN Fish Stocks Agreement and the 1982 United Nations Convention on the Law of the Sea. The WCPFC exercise management control into the high seas zones outside national EEZs.

The Convention also states that effective management and conservation require the application of the precautionary approach and the best scientific information available. WCPFC CMM -2015-02 states that CCMs shall cooperate to ensure the long-term sustainability and economic viability of the fishery for South Pacific albacore, including cooperation and collaboration on research to reduce uncertainty with regard to stock status.

The OFP also has clear objectives outlined which includes: high-quality scientific information and advice for regional and national fisheries management on the the status of, and fishery impacts on, stocks targeted or impactyed by regional oceanic fisheries; accurate and comprehensive scientific data and improved understanding of pelagic ecosystems in the western and central Pacific Ocean.

On a domestic level, the MSA, National Standards and other legislation include explicit, well-defined short and long term objectives for sustainable fishing and conservation. Section 102 of the MSA (2007) states that “the US shall cooperate directly or through appropriate international organizations with those nations involved in fisheries for highly migratory species with a view to ensuring conservation and shall promote the achievement of optimum yield of such species throughout their range, both within and beyond the exclusive economic zone.” The MSA also states that conservation and management referes to all the regulations that are required to rebuild, restore, or maintain any fishery resource and the marine environment, and assure that irreversible or long-term adverse effects on fishery resources and the marine environment are avoided. NMFS incorporated precautionary concepts to ensure compliance with the Sustainable Fisheries Act 1996 that includes National Standards for conservation and management of fisheries in the US (Blythe-Skyrme *et al.* 2012).

### **3.5.7 Monitoring, Control and Surveillance, and Enforcement**

The US has a strong enforcement program to deter fisheries violations through successful prosecution and deterrent penalties. NOAA has authority and responsibility under more than 30 federal statutes to manage sustainable fisheries, and to protect living marine resources, including marine areas and species (NOAA Policy for Assessment of Penalties and Permit Sanctions – March 16, 2011, 56pp). Officers and agents in the NOAA Office of Law Enforcement, the US Coast Guard, Customs and Border Protection, Immigration and Customs Enforcement, US Fish and Wildlife Service, and State officers authorized under Cooperative Enforcement Agreements, monitor compliance and investigate potential violations of the statutes and regulations enforced by NOAA. Monitoring, control and surveillance are carried out across the fishing sectors to ensure observance of regulatory and statute requirements. Monitoring, control and surveillance actions include:

- Fishing permit requirements
- Fishing permit and fishing vessel registers
- Vessel and gear marking requirements
- Fishing gear and method restrictions
- Reporting requirements for catch, effort, and catch disposition
- Vessel inspections
- Record keeping requirements
- Auditing of licensed fish buyers
- Control of transshipment
- Monitored unloads of fish
- Information management and intelligence analysis
- Analysis of catch and effort reporting and comparison with landing and trade data to confirm accuracy
- Boarding and inspection by fishery officers at sea
- Aerial and surface surveillance,
- Any other measures agreed by WCPFC
- VMS/EMTU for vessels with High Seas Permits under the High Seas Fisheries Compliance Act

Penalties for fisheries related violations include fines; forfeiture of fish, vessels, other property and quota; and imprisonment. With respect to permit sanctions, where applicable, the statutes that NOAA enforces generally provide broad authority to suspend or revoke permits.

All U.S. vessels fishing for HMS, which include South Pacific albacore, are required to have a HMS permit and are required to fill out logbooks and return them to the Southwest Fisheries Science Center within 30 days if landed in the United States. The High Seas Fishing Compliance Act, adopted in March 1996, requires that all U.S. commercial fishing vessels that fish on the high seas (outside the U.S. EEZ, or 200nm) have a High Seas Fishing Compliance Act Permit (HSFCA) (PFMC 2016a). HMS vessels that have this permit for fishing beyond 200 nm of the U.S. are required to have VMS tracking. Observers are not required for South Pacific albacore.

*WCPFC Convention Article XXV* establishes that each member of the Commission shall enforce the provisions of the Convention and any conservation and management measures issued by the Commission, *Article XXVI* establishes boarding and inspection procedures, *Article XXVII* establishes port-state inspection procedures which allows the port-state to prohibit landings and transshipment of catch and transshipment of catch taken through non-compliance, and *Article XXIX* outlines procedures for in-port and at-sea transshipment (Blythe-Skyrme *et al.* 2012). The WCPFC Convention establishes a requirement for each member to establish and maintain a record of fishing vessels authorized to fish in the Convention Area beyond that member's area of national jurisdiction (WCPFC Convention). A database is maintained by the Secretariat that contains each member's authorized list of fishing vessels. The database acts as a tool for verification, which ensures all vessels fishing are legally operating in the Convention area. Enforcement of conservation measures falls to the member States, and the WCPFC IUU listing procedure address compliance failures from vessels. The WCPFC notifies Flag States of vessels that are non-compliant, followed by an order from the relevant Flag State to withdraw those vessels from the Commission Area.

The WCPFC also requires that any U.S. fishing vessel used for commercial fishing for HMS on the high seas have a WCPFC Endorsement. In order to obtain this endorsement, a HSFCA permit must have been issued or applied for. The WCPFC requires

owners/operators of any U.S. vessel fishing for HMS in the Convention Area be required to submit NOAA Fisheries information about the vessel, its owner and operators, and any fishing authorizations issued by such other nations. Video Monitoring systems (VMS) are required on all vessels fishing in the high seas within the Convention Area (WCPFC 2014c). IN 2017, the WCPFC released the Compliance Monitoring Scheme (CMS) to ensure that CCMs implement and comply with obligations arising under the Convention and CMMs. The CMS is designed to: assess compliance; identify areas in which technical assistance or capacity building may be needed to attain compliance; respond to non-compliance through remedial options; and monitor and resolve outstanding instances of non-compliance (WCPFC 2017f). The Commission, specifically the Technical Compliance Committee (TCC) has the role of reviewing and monitoring compliance of the the Commission's conservation measures. Evaluations of a member's compliance are done annually with respect to spatial and temporal closures, observer and VMS coverage and provision of scientific data, and catch and effort limits and reporting for target species.

In addition to the domestic and international procedures for monitoring, enforcement and compliance, AAFA and WFOA have several procedures in place to keep the members of their associations in compliance with current management policies. Regulations, permit and vessel requirements, instructions for logbook submission, and mandatory safety measures are regularly updated and publicly available on their websites.

### **3.5.8 Reporting**

The WCPFC *Convention, Article XXI* states that the Commission shall promote transparency in its decision-making process and other activities. Representatives from IGOs and NGOs concerned with matters relevant to the Convention shall be offered the opportunity to participate in the meetings of the Commission and its subsidiary bodies as observers or otherwise appropriate. WCPFC CMM 2015-02 states that CCMs shall report annually to the Commission the annual catch levels taken by fishing vessels that has taken south Pacific albacore and the number of vessels actively fishing for south Pacific albacore in the Convention area south of 20°S. This measure is reviewed annually based on the advice from the Scientific Committee on south Pacific albacore.

Formal reporting to interested stakeholders are available at the international and the domestic level. The WCPFC and NMFS maintain publicly accessible websites where reports, scientific papers and meeting minutes are posted and freely available for download.

### **3.5.9 Consultation**

The consultation processes of the management systems at both the international and domestic levels provide opportunities for all interested and affected parties to be involved. At the international level both RFMOs have articles in their respective Conventions that provide that the Commission will consult, cooperate and collaborate with other relevant organizations, particularly those with related objectives and which can contribute to the attainment of the objectives of the Convention. Subject to Commission rules and procedures, representatives from NCPs, IGOs and NGOs may participate in Commission meetings and its subsidiary bodies as observers or otherwise as appropriate; have access to pertinent information subject to Commission rules and procedures; and, are permitted to give oral presentations and distribute papers through the Secretariat. Interested stakeholders easily may keep apprised of fisheries management and related actions, topics, status, etc. Agendas for all meetings, reports of presentations given at meetings, status of actions, etc. are published in easily downloadable formats from the RFMO and US Fishery Management Council websites and other media.

At the domestic level, the MSA mandates that NOAA follow a transparent process for vetting domestic regulations and related actions that includes all interested stakeholders.

### 3.5.8 Dispute Resolution

The WCPFC operates under a charter specifying voting rules and procedures. However, decisions are usually made by consensus of the member states. There also are dispute resolution mechanisms. Additionally dispute resolution through litigation and the courts is available. Any such disputes are to be well documented and readily available to appropriate parties. The management system at the international level incorporates transparent mechanisms in decision making processes and other activities. WCPFC *Convention Annex II* establishes the authority to set up a Review Panel to review decisions made by the Commission to settle disputes among members of the Commission (Blythe-Skyrme *et al.* 2012).

At the domestic level, NOAA has an extensive Dispute Resolution Process, defined by the Administrative Dispute Resolution Act of 1996, Pub. L. No. 104-320. They have an Alternative Dispute Resolution (ADR) process that consists of several approaches used to resolve conflict other than litigation if possible. The ADR process uses mediation, consultation and facilitated problem solving to resolve disputes in a confidential manner ([www.wfm.noaa.gov/adr/](http://www.wfm.noaa.gov/adr/)).

## 4 Evaluation Procedure

### 4.1 Harmonised Fishery Assessment

The MSC requires that assessments are harmonized for fisheries that overlap. The definition of an overlapping fishery for the MSC is two or more fisheries which require assessment of some, or all, of the same aspects of MSC Principles 1, 2 and/or 3 within their respective units of certification. There are six certified and in-assessment fisheries with South Pacific albacore as a target stock, including the AAFA/WFOA fishery (Table 4). The present reassessment uses version 2.0, however scores under version 1.3 were harmonized during the prior assessment. Although the timelines for these assessments/certifications are staggered, the respective assessment teams have ensured that the Principle 1 scores are harmonized across assessments such that there are no material differences in scores, although some scores have not been identical. Under version 2.0, there is no longer a separate Performance Indicator for reference points (previously 1.1.2. Therefore, the condition related to reference points does not carry over into the assessment against v2.0.

**Table 4. Harmonized Principle 1 scores across certified South Pacific albacore fisheries.**

Fishery	1.1.1	1.2.1	1.2.2	1.2.3	1.2.4
NZ troll albacore	100	70	60	80	95
Intertek AAFA & WFOA South Pacific albacore (old)	100	85		100	95
Fiji albacore	100	70	60	80	95

SLCZ, HNSFC & CFA Cook Island albacore	100	70	60	80	85
Walker Seafood albacore	100	70	60	80	95
American Samoa EEZ albacore and yellowfin longline fishery	100	70	60	80	95
V2.0	1.1.1	1.2.1	1.2.2	1.2.3	1.2.4
<b>AAFA/WFOA (present assessment)</b>	<b>100</b>	<b>70</b>	<b>60</b>	<b>80</b>	<b>85</b>

## 4.2 Previous assessments

The present assessment is the second reassessment for AAFA and the first reassessment for the combined AAFA/WFOA client group. All information about previous assessments can be found on the MSC website here: <https://fisheries.msc.org/en/fisheries/aafa-and-wfoa-south-pacific-albacore-tuna/@@assessments>. All previous assessments have been successful, concluding with certification of the fisheries. Previous assessments were all conducted by a different CAB, with the current clients transferring their certificate to MRAG Americas in 2016 to conduct the third and fourth surveillance audits and present reassessment. A summary of conditions status from previous assessments is given in Table 5.

**Table 5. Summary of Previous Assessment Conditions**

Condition	PI(s)	Year closed	Justification
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<p>1: By the end of the fourth year of certification, the SG 80 scoring requirements above must be met in full. This will be achieved if the limit reference point used by the IATTC and WCPFC is set above the level at which there is an appreciable risk of impairing reproductive capacity, and if the target reference point used by the IATTC and WCPFC is such that the stock is maintained at a level consistent with <math>B_{MSY}</math> or some measure or surrogate with similar intent or outcome.</p>	1.1.2	Not closed	<p>The WCPFC has adopted a LRP for South Pacific albacore tuna, of <math>B = 20\%SB_{current, F=0}</math> (i.e., 20% of the adult biomass that could exist under recent current conditions if no fishing was occurring) is in place. Evidence was not provided that appropriately precautionary, scientifically based, formal target and limit reference points (except WCPFC adopted LRP of <math>20\%SB_{current, F=0}</math>) for South Pacific albacore tuna, that meet the MSC standard at SG80, have been adopted by the IATTC and WCPFC. The audit team concludes that based on the evidence AAFA and WFOA have not met the fourth annual milestone, and we therefore find that the fishery is currently behind target to meet Condition 1.</p> <p><b>However, this condition does not carry over into the present assessment because under FCR v2.0, PI 1.1.2 does not exist in its previous form. Instead, the evaluation of reference points has been put into PI 1.2.2, where a different condition already exists (see below).</b></p>
<p>2: By the end of the fourth year of certification, the SG 80 scoring requirements above must be met in full. This will be achieved if well defined harvest control rules are in place at the IATTC and WCPFC that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached, the selection of the harvest control rule takes into account the main uncertainties, and available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.</p>	1.2.2	Not closed	<p>As previously noted that the WCPFC (2014a) 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 adopted 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. Evidence has not been provided by the fourth surveillance audit that an appropriate harvest control rule for South Pacific albacore tuna has been adopted by the IATTC and WCPFC. At this point in time a formal binding harvest control rule has not been agreed on by the IATTC and WCPFC. The audit team concludes that based on the evidence AAFA and WFOA have not met the fourth annual milestone, and we therefore find that the fishery is currently behind target to meet Condition 2. The score for PI 1.2.2 remains at 60, however carry-over of this condition into reassessment is permitted by the MSC because the assessment uses FCR v2.0 and interpretation from MSC regarding “available” harvest control rules applies in this case.</p>

<p>3: Within five years, there will be evidence that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1</p>	<p>1.2.1 (raised at 3<sup>rd</sup> annual audit in 2016)</p>	<p>On target</p>	<p>As previously noted that the WCPFC (2014a) 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 adopted 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.</p> <p>The audit team concludes that based on the evidence AAFA and WFOA have met the first annual milestone for this condition and therefore the fishery is on target with respect to Condition 3.</p>
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### 4.3 Assessment Methodologies

The AAFA/WFOA South Pacific albacore fishery was reassessed against using the MSC Fishery Certification Requirements and associated Guidance to the MSC Fishery Certification Requirements, version 2.0.

The AAFA/WFOA South Pacific albacore fishery recertification assessment was conducted using the default assessment tree contained in v2.0 of the MSC FCR, without modification, and takes advantage of MSC guidance pertaining to carry over of conditions on PI 1.2.2 when FCR v2.0 is used for tuna fisheries.

### 4.4 Evaluation Processes and Techniques

#### 4.4.1 Site Visits

Information supplied by the clients and management agencies was reviewed by the assessment team ahead of the meetings, and discussions with the clients and management agencies centred on the content within the provided documentation. In cases where relevant documentation was not provided in advance of the meeting, it was requested by the assessment team and subsequently supplied during, or shortly after the meeting.

Thirty days prior to the audit, all stakeholders from the full assessment were informed of the opportunity to provide information to the auditors in advance of, or during, the period of the audit. We received one request from the International Sustainable Seafood Foundation (ISSF), to be registered as a stakeholder in this surveillance and reassessment process. We received no requests from outside stakeholders to take part in meetings or provide information remotely.

The audit was held in La Jolla, CA from August 9-11, 2017 for both the North and South Pacific Albacore fisheries, with one additional conference calls held the following month (see below for details).

Table 6 lists the attendees and their affiliations, and Table 7 gives the schedule of meetings and who attended each. Please note that the description of the site visit and participants includes the discussions related to both the North and South Pacific fisheries, thus not all sessions are relevant to both fisheries.

**Table 6. AAFA and WFOA surveillance audit and reassessment participants and affiliations**

Name	Affiliation
Amanda Stern-Pirlot	MRAG Americas, Assessment team
Max Stocker	Assessment team
Erin Wilson	MRAG Americas, Assessment team
Ivan Mateo	SAI Global, lead assessor for the CHMSF
Natalie Webster	AAFA, client
Wayne Heikkila	WFOA, client
Peter Flournoy	WFOA, client
Mike Conroy	AAFA, client
Rick Deriso	IATTC
Mark Maunder	IATTC
Carolina Minte-Vera	IATTC
Steve Teo	NOAA/NMFS Southwest Fisheries Science Center
John Childers	NOAA/NMFS Southwest Fisheries Science Center
Gerard DiNardo	NOAA/NMFS Southwest Fisheries Science Center
Michael Killary	NOAA Fisheries Office of Law Enforcement
Michelle Zetwo	NOAA/NMFS SW Region Enforcement
Cyreis Schmitt	Oregon Department of Fish and Wildlife (ODFW)
Kit Dahl	Pacific Fisheries Management Council
Sergio Cansado	Accreditation Services International (ASI)
Heiko Sielert	ASI

**Table 7. Consultation Meetings during the Surveillance and Reassessment of the AAFA and WFOA fisheries.**

Name Organization	Present at Meeting	Location	Meeting Type	Date/Time
<b>NOAA/NMFS</b> Southwest Fisheries Science Center, 8901 La Jolla Shores Dr La Jolla, CA 92037-1508, USA	Amanda Stern-Pirlot, Max Stocker, Erin Wilson, Ivan Mateo, Steve Teo, John Childers, Steven Stohs	Southwest Fisheries Science Center, 8901 La Jolla Shores Dr La Jolla, CA 92037-1508, USA	Teleconference	2 August 2017 9 AM
<b>NOAA Fisheries Office of Law Enforcement</b> West Coast Division 7600 Sand Point Way NE Seattle, WA 98115, USA	Amanda Stern-Pirlot, Erin Wilson, Michael Killary	MRAG Americas, Inc. 1631 15 <sup>th</sup> Ave W, Suite 201 Seattle, WA 98119, USA	In person	4 August 2017 10 AM
<b>Client Meeting: AAFA and WFOA</b>	Amanda Stern-Pirlot, Max Stocker, Erin Wilson, Peter Flournoy, Mike Conroy, Natalie Webster	Empress Hotel 7766 Fay Ave, La Jolla, CA 92037	In person and by phone	9 August 2017 9:30 AM

	(phone), Wayne Heikkila (phone), Sergio Cansado (ASI), Heiko Seilert (ASI)			
<b>IATTC</b> 8901 La Jolla Shores Drive La Jolla CA 92037-1509, USA	Amanda Stern- Pirlot, Max Stocker, Erin Wilson, Ivan Mateo (phone) Rick Deriso, Mark Maunder, Carolina Minte- Vera, Sergio Cansado (ASI), Heiko Seilert (ASI)	IATTC 8901 La Jolla Shores Drive La Jolla CA 92037- 1509, USA	Teleconference	10 August 2017 10 AM
<b>NOAA/NMFS</b> Southwest Fisheries Science Center, 8901 La Jolla Shores Dr La Jolla, CA 92037-1508, USA	Amanda Stern- Pirlot,Max Stocker, Erin Wilson Gerard DiNardo, Sergio Cansado (ASI), Heiko Seilert (ASI)	<b>IATTC Office</b> 8901 La Jolla Shores Drive La Jolla CA 92037- 1509, USA	In person	10 August 2017 1:30 PM
<b>Pacific Fisheries Management Council</b> 7700 NE Ambassador Place, Suite 101 Portland, Oregon 97220, USA  <b>Oregon Department of Fish and Wildlife</b> Marine Resources Program 2040 SE Marine Science Drive Newport, OR 97365  Highly Migratory Species Committee	Amanda Stern- Pirlot, Max Stocker, Erin Wilson, Kit Dahl,Cyreis Schmitt, Sergio Cansado (ASI), Heiko Seilert (ASI)	<b>IATTC Office</b> 8901 La Jolla Shores Drive La Jolla CA 92037- 1509, USA	In person	10 August 2017 3 PM
<b>NOAA/NMFS Southwest Region of Enforcement</b> 501 West Ocean Boulevard, Suite 4200 Long Beach, CA 90802, USA	Amanda Stern- Pirlot, Max Stocker, Erin Wilson, Michelle Zetwo, Marcus Nieves, Sergio Cansado (ASI), Heiko Seilert (ASI)	Empress Hotel 7766 Fay Ave, La Jolla, CA 92037	In person	11 August 2017 1 PM

<b>Closing Meeting with Clients - AAFA and WFOA</b>	Amanda Stern-Pirlot, Max Stocker, Erin Wilson, Peter Flournoy, Mike Conroy, Natalie Webster (phone), Wayne Heikkila (phone), Sergio Cansado (ASI), Heiko Seilert (ASI)	Empress Hotel 7766 Fay Ave, La Jolla, CA 92037	Teleconference	11 August 2017 3 PM
<b>NOAA Hawaii</b>	Amanda Stern-Pirlot, Erin Wilson and Tom Graham		Teleconference	14 September 2017 12:00 PST
<b>SPC</b>	Amanda Stern-Pirlot, Max Stocker, Erin Wilson, Steven Hare, Graham Pilling, Stephen Brouwer		Teleconference	22 November 2pm PST

#### 4.4.2 Consultations

See Table 7 above, with respect to details of the individuals interviewed during the site visit, and summary of topics discussed.

#### 4.4.3 Evaluation Techniques

MRAG published an announcement of the reassessment on our website and sent a direct email to all stakeholders on our stakeholder list. MSC posted the announcement on its AAFA/WFOA South Pacific albacore track-a-fishery page, as well as sent it by email in their Fishery Announcements newsletter to all registered recipients. At this time, MRAG Americas also announced the assessment site visit dates and location, as well as the assessment team. This was done according to the process requirements as laid out in MSC's Fisheries Certification Requirements v2.0. The site visit for this assessment was held at the same time as the site visit for the 4<sup>th</sup> surveillance audit for these fisheries, and the announcements for both went to stakeholders together. Together, these media presented the announcement to a wide audience representing industry, agencies, and other stakeholders.

The assessment team and the clients set up meetings with US South Pacific albacore fishery management and science personnel, and industry and harvest-sector representatives relevant to the fishery assessment.

In the CR v2.0 default assessment tree used for this assessment, the MSC has 28 'performance indicators', six in Principle 1, 15 in Principle 2, and seven in Principle 3. The performance indicators are grouped in each principle by 'component.' Principle 1 has two components, Principle 2 has five, and Principle 3 has two. Each performance indicator consists of one or more 'scoring issues,' a scoring issue is a specific topic for evaluation. 'Scoring Guideposts' define the requirements for meeting each scoring issue at the 60 (conditional pass), 80 (full pass), and 100 (state of the art) levels.

Note that some scoring issue may not have a scoring guidepost at each of the 60, 80, and 100 levels; in the case of the example above, scoring issue (b) does not have a scoring issue at the SG60 level. The scoring issues and scoring guideposts are cumulative; this means that a performance indicator is scored first at the SG60 levels. If not all of the SG scoring issues meet the 60 requirements, the fishery fails and no further scoring occurs. If all of the SG60 scoring issues are met, the fishery meets the 60 level, and the scoring moves to SG80 scoring issues. If no scoring issues meet the requirements at the SG80 level, the fishery receives a score of 60. As the fishery meets increasing numbers of SG80 scoring issues, the score increases above 60 in proportion to the number of scoring issues met; performance indicator scoring occurs at 5-point intervals. If the fishery meets half the scoring issues at the 80 level, the performance indicator would score 70; if it meets a quarter, then it would score 65; and it would score 75 by meeting three-quarters of the scoring issues. If the fishery meets all of the SG80 scoring issues, the scoring moves to the SG100 level. Scoring at the SG100 level follows the same pattern as for SG80.

Principle scores result from averaging the scores within each component, and then from averaging the component scores within each Principle. If a Principle averages less than 80, the fishery fails.

Scoring for this fishery followed a consensus process in which the assessment team discussed the information available for evaluating performance indicators to develop a broad opinion of performance of the fishery against each performance indicator. Review of sections 3.2-3.5 by all team members assured that the assessment team was aware of the issues for each performance indicator. Subsequently, the assessment team member responsible for each principle, filled in the scoring table and provided a provisional score. The assessment team members reviewed the rationales and scores, and recommended modifications as necessary, including possible changes in scores.

Performance Indicator scores were entered into MSC’s Fishery Assessment Scoring Worksheet (see **Error! Reference source not found.**, below) to arrive at Principle-level scores.

**Table 8. Scoring elements**

<b>Component</b>	<b>Scoring elements</b>	<b>Main/Not main</b>	<b>Data-deficient or not</b>
P1	South Pacific albacore tuna	Target	Not
ETP	Marine Mammals	N/A	Not
ETP	Marine Turtles	N/A	Not
ETP	Seabirds	N/A	Not
Habitat	Pelagic	Only	Not
Ecosystem	South Pacific Ocean	Only	Not

The RBF was not used in this assessment.

## 5 Traceability

### 5.1 Eligibility Date

The eligibility date for this fishery is the date of PCDR publication, August 28<sup>th</sup>, 2018. While this fishery was already certified, the reassessment was not concluded before the expiry of the certificate so the earliest eligibility date has been chosen. The traceability and segregation systems have already been implemented as this is a previously certified fishery.

### 5.2 Traceability within the Fishery

Traceability within the AAFA and WFOA South Pacific albacore fishery is considered to be excellent. All albacore are landed as blast or brine frozen whole fish, no processing takes place at sea and although transshipment is permitted, this occurs very rarely, if at all, and with reporting required. The limit of identification of landings is the landing of albacore by AAFA and WFOA member vessels, or other US pole and troll vessels identified by AAFA or WFOA as being part of the certified fishery.

The AAFA and WFOA South Pacific albacore fishery is currently certified and is seeking recertification, and vessels must transit thousands of miles from the US West Coast in order to fish on the South Pacific grounds.

In addition to MSC certification, AAFA and WFOA are marketing bodies focused on product quality, and every landing is coded and can be traced back to a specific vessel and date of landing, so allowing any quality concerns to be resolved quickly. This is accomplished through a fish ticket system which tracks the product back to the vessel, and the list of eligible vessels comprises the UoC (these vessels only fish for albacore within the UoA with eligible gears. This tracing supports the view that there is almost no potential for non-certified fish to be introduced to the supply chain or for transshipment to occur.

**Table 9. Traceability factors within the Fishery**

<b>Traceability Factor</b>	<b>Description of risk factor if present. Where applicable, a description of relevant mitigation measures or traceability systems (this can include the role of existing regulatory or fishery management controls)</b>
Potential for non-certified gear/s to be used within the fishery	No risk factor present. The poll and line/troll and jig vessels do not carry any other gear when fishing for albacore.
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	The vessels can fish in the North or South Pacific (both certified and currently in reassessment). However, as stated above, vessels must transit thousands of miles from the US West Coast in order to fish on the South Pacific grounds. As such, there is considered to be very little incentive or potential for fish other than South Pacific albacore to enter the AAFA and WFOA South Pacific albacore chain of custody, and tracking and tracing is such that it is highly unlikely that albacore caught in the South Pacific UoA would be misidentified as North Pacific.
Potential for vessels outside of the UoC or client group fishing the same stock	There are non-AAFA and non-WFOA member pole and line albacore fishermen who participate in this

	fishery. However, the sale of fish as MSC is controlled by AAFA and WFOA through their eligibility arrangements such that, unless authorized by one of these groups, this UoA fish outside the UoC will not enter the supply chain as MSC.
Risks of mixing between certified and non-certified catch during storage, transport, or handling activities (including transport at sea and on land, points of landing, and sales at auction)	No risk factor present. All South Pacific albacore is within the UoA. There is no transshipment, and landings are coded and traceable back to the fishing vessel.
Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody)	No risk factor present. There is no at-sea processing of pole and line albacore tuna.
Risks of mixing between certified and non-certified catch during transshipment	Very low risk factor present. Transshipment is permitted in this fishery but very rarely (if ever) occurs. If it were to occur, full catch documentation must accompany the product, therefore the traceability risk is very very low.
Any other risks of substitution between fish from the UoC (certified catch) and fish from outside this unit (non-certified catch) before subsequent Chain of Custody is required	No risk factor present. See above.

### 5.3 Eligibility to Enter Further Chains of Custody

Eligibility to participate in the AAFA and WFOA North Pacific albacore fishery is determined by membership of AAFA and WFOA or other non-member vessels as identified by AAFA or WFOA. AAFA and WFOA maintain lists of eligible vessels on their respective websites. Those vessels may land at a small number of unloading stations on the Washington, Oregon and California coasts, where appropriate recording and monitoring of catches takes place. For 2018, the unloading stations are identified as:

- Bandon Pacific Seafood
- Bornstein Seafoods
- Fishpeople Seafood Inc., DBA Ilwaco Landing Fishermen
- Da Yang Seafoods
- Interocean Seafood Co
- Jessie's / Albers Ilwaco Fish Company
- Manabe & Company LLC
- Pacific Shrimp Co.
- Pacific Choice Seafood Company
- Pacific Coast Seafood
- Seafood Producers Cooperative
- Washington Crab Producers
- Wild Planet Foods Inc.

Fishery product are covered by the fishery certificate up to the point of landing or sale, whichever comes first, and at which point it will be eligible to enter further certified chains of custody. Product from this fishery generally changes ownership through either a brokered sale from the vessels to primary processors (in which case invoices will accompany the

transfer of ownership), or through direct offload to a processor (in which case the processor will complete the fish ticket as record of this transfer).

**5.4 Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to Enter Further Chains of Custody**

Not applicable, there are no IPI stocks in this fishery.

## 6 Evaluation Results

### 6.1 Principle Level Scores

Table 10. Final Principle Scores

Final Principle Scores	
Principle	Score
Principle 1 – Target Species	82.5
Principle 2 – Ecosystem	97.7
Principle 3 – Management System	86.9

## 6.2 Summary of PI Level Scores

Table 11. Summary of PI level scores

Principle	Component	Wt	Performance Indicator (PI)	Wt	Score
One	Outcome	0.333	1.1.1 Stock status	1.0	100
			Management	0.667	1.2.1 Harvest strategy
		1.2.2 Harvest control rules & tools	0.25		60
		1.2.3 Information & monitoring	0.25		80
		1.2.4 Assessment of stock status	0.25		85
Two	Primary species	0.2	2.1.1 Outcome	0.333	100
			2.1.2 Management strategy	0.333	100
			2.1.3 Information/Monitoring	0.333	100
	Secondary species	0.2	2.2.1 Outcome	0.333	100
			2.2.2 Management strategy	0.333	100
			2.2.3 Information/Monitoring	0.333	100
	ETP species	0.2	2.3.1 Outcome	0.333	90
			2.3.2 Management strategy	0.333	95
			2.3.3 Information strategy	0.333	80
	Habitats	0.2	2.4.1 Outcome	0.333	100
			2.4.2 Management strategy	0.333	100
			2.4.3 Information	0.333	100
	Ecosystem	0.2	2.5.1 Outcome	0.333	100
			2.5.2 Management	0.333	100
			2.5.3 Information	0.333	100
Three	Governance and policy	0.5	3.1.1 Legal &/or customary framework	0.333	85
			3.1.2 Consultation, roles & responsibilities	0.333	85
			3.1.3 Long term objectives	0.333	100
	Fishery specific management system	0.5	3.2.1 Fishery specific objectives	0.25	100
			3.2.2 Decision making processes	0.25	75
			3.2.3 Compliance & enforcement	0.25	80
			3.2.4 Monitoring & management performance evaluation	0.25	80
<b>Overall weighted Principle-level scores</b>					<b>Score</b>
Principle 1 - Target species					82.5
Principle 2 - Ecosystem					97.7
Principle 3 - Management					86.9

## 6.3 Summary of Conditions

Table 12. Summary of conditions.

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/NA)
1	Within five years, there will be evidence that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1	1.2.1	Yes, carry over of condition 3 from the previous assessment. This condition has a five-year timeframe for implementation and was introduced to this assessment in 2016.
2	By the end of the fourth year of certification, the SG 80 scoring requirements above must be met in full. This will be achieved if well defined harvest control rules are in place at the IATTC and WCPFC that that <b>ensure</b> that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock <b>fluctuating around</b> a target level consistent with (or above) MSY and that HCRs are likely to be robust to the main uncertainties and tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	1.2.2	Yes, related to previous conditions 1 and 2 (carry over as permitted by MSC guidance for tuna fisheries using v2.0 of the FCR for reassessment)
3	By the fourth surveillance audit, demonstrate that the WCPFC decision-making processes have responded to the albacore catch rate issue by putting in place an appropriate harvest strategy or other suitable management measures.	3.2.2	N, new condition based on declining CPUE for South Pacific albacore and in harmonization with other MSC fisheries for South Pacific albacore.

## 6.4 Recommendations

Recommendation for PI 1.2.4: : Relative to Scoring Issue a, we recommend that the clients support the collaboration between the IATTC and SPC planned for 2022 to carry out a benchmark assessment of South Pacific albacore which will include catches from the EPO as well as WCPO (IATTC-93-06b).

Recommendation for PI 2.3.3. Despite low levels of ETP interactions seen in historic data, there should be an ongoing or periodic level of observer coverage that will provide information on potential interactions appropriate to the potential for interactions into the future.

## 6.5 Determination, Formal Conclusion and Agreement

On the basis of this assessment of the fishery, the Assessment Team recommends that the fisheries be certified. Following this recommendation of the assessment team, review by

stakeholders and peer-reviewers, and the completion of the objections period, a final decision is hereby made by MRAG Americas to recertify this fishery.

#### **6.6 Changes in the fishery prior to and since Pre-Assessment**

Not applicable as this is a full reassessment.

## References

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# Appendices

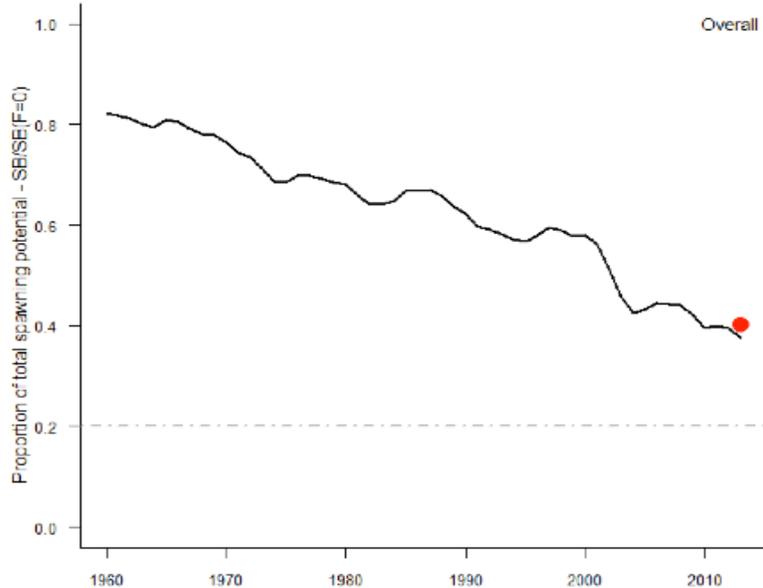
## Appendix 1 Scoring and Rationales

### Appendix 1.1 Performance Indicator Scores and Rationale

#### Evaluation Table for PI 1.1.1 – Stock status

<b>PI 1.1.1</b>	<b>The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing</b>		
<b>Scoring Issue</b>	SG 60	SG 80	SG 100
<b>a</b>	Stock status relative to recruitment impairment		
<b>Guide post</b>	It is <b>likely</b> that the stock is above the point where recruitment would be impaired (PRI).	It is <b>highly likely</b> that the stock is above the PRI.	There is a <b>high degree of certainty</b> that the stock is above the PRI.
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	<p>The 2015 MULTIFAN-CL assessment provides probabilistic estimates of parameters of interest, has been extensively explored and subjected to sensitivity testing of biological assumptions and data treatment and weighting.</p> <p>The stock assessment estimates 2013 spawning stock biomass to be above both the level that will support MSY (<math>SB_{latest}/SB_{MSY} = 2.86</math> for the base case and ranging from 1.74 to 7.03 across the grid of 18 model runs) and the adopted LRP of 20%<math>SB_{F=0}</math> (<math>SB_{latest}/SB_{F=0} = 0.4</math> for the base case and ranging from 0.30-0.60 across the grid of 18 model runs). For the base case the 20%<math>SB_{F=0}</math> was estimated to be 81,672 t and <math>SB_{MSY}</math> was estimated to be 57,430 t. The 2015 stock assessments shows that <math>SB_{MSY}</math> is lower than the adopted LRP.</p> <p>Based on the estimated relationship between recruitment and spawning potential there is no indication of any recruitment impairment (see figure below from Harley <i>et al.</i> 2015).</p>		

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue	SG 60	SG 80	SG 100
	<p>There is a high degree of certainty that the current spawning stock biomass is above the point where recruitment would be impaired. The SG100 requirement is met. The 100 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>		
b	Stock status in relation to achievement of MSY		
Guide post		The stock is at or fluctuating around a level consistent with MSY.	There is a <b>high degree of certainty</b> that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
Met?		Y	Y
Justification	The stock assessment estimated current spawning stock biomass, $SB_{2013}$ , to be 2.86 times the MSC default TRP for the base case (and ranging from 1.74 to 7.03 across the grid of 18 model runs. $SB_{MSY}$ (57,430 t) is in fact lower than the standard MSC default LRP of 20% $SB_0$ (79,300 t). The stock is estimated to never have been reduced to $SB_{MSY}$ and has hence been above the default TRP in all years with a high degree of certainty (see figure below from Harley <i>et al.</i> 2015).		

<b>PI 1.1.1</b>		<b>The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
		 <p>Based on status relative to the default TRP, the SG100 requirement is met. The 100 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>		
<b>References</b>		Harley <i>et al.</i> 2015; Pilling <i>et al.</i> 2015; WCPFC 2015a.		
<b>Stock Status relative to Reference Points</b>				
	<b>Type of reference point</b>	<b>Value of reference point</b>	<b>Current stock status relative to reference point</b>	
<b>Reference point used in scoring stock relative to PRI (SIa)</b>	Limit Reference Point (LRP)	$20\%SB_{F=0} = 81,672 \text{ t}$	$SB_{\text{latest}}/20\%SB_{F=0} = 2$ for the reference case (with C.I. 1.6-3.2 across the grid)	
<b>Reference point used in scoring stock relative to MSY (SIb)</b>	MSY reference point	$SB_{\text{MSY}} = 57,113 \text{ t}$	$SB_{\text{latest}}/SB_{\text{MSY}} = 2.86$ for the reference case (with C.I. 1.74-7.03 across the grid)	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>

Evaluation Table for PI 1.1.2 – Stock rebuilding

<b>PI 1.1.2</b>	<b>Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe</b>		
<b>Scoring Issue</b>	SG 60	SG 80	SG 100
<b>a</b>	<b>Rebuilding timeframes</b>		
<b>Guide post</b>	A rebuilding timeframe is specified for the stock that is <b>the shorter of 20 years or 2 times its generation time</b> . For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed <b>one generation time</b> for the stock.
<b>Met?</b>	NA		NA
<b>Justification</b>	The South Pacific Albacore tuna stock is not considered to be depleted.		
<b>b</b>	<b>Rebuilding evaluation</b>		
<b>Guide post</b>	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is evidence that the rebuilding strategies are rebuilding stocks, <b>or it is likely</b> based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.	There is <b>strong</b> evidence that the rebuilding strategies are rebuilding stocks, <b>or it is highly likely</b> based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.
<b>Met?</b>	NA	NA	NA
<b>Justification</b>	The South Pacific Albacore tuna stock is not considered to be depleted.		
<b>References</b>	WCPFC 2015a		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>NS</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>NA</b>

Evaluation Table for PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Harvest strategy design			
	<b>Guide post</b>	The harvest strategy is <b>expected</b> to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy <b>work together</b> towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is <b>designed</b> to achieve stock management objectives reflected in PI 1.1.1 SG80.
	<b>Met?</b>	Y	N	N
	<b>Justification</b>	<p>MSC defines Harvest Strategy as the combination of monitoring, stock assessment, harvest control rules and management actions, which may include a Management Procedure (MP) or an MP (implicit) and be tested by MSE (MSC CR v2.0). The intention is that these elements (monitoring, stock assessment, harvest control rules and management actions) should work together effectively to ensure overall performance, measured in terms of achieving outcomes (i.e. meeting objectives).</p> <p>The harvest strategy currently in operation is not formalised but consists of the elements considered at PIs 1.2.2 (Harvest Control Rule), 1.2.3 (Monitoring), and 1.2.4 (Stock Assessment). Each PI is considered below in its own right. PI 1.2.1 is intended to consider how they work together to achieve objectives.</p> <p>First, as per PI 1.2.2 (see below) generally understood HCRs are available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached. Although not scored at the SG80 level at PI 1.2.2a, b and c, implicitly, LRPs exist for biomass (<math>WCPFC\ 20\%SB_{current,F=0}</math>) and fishing mortality rate (WCPFC). An implicit MSY-related biomass TRP similarly and arguably exists (WCPFC).</p> <p>While formal decision rules (harvest control rules) are being developed, and TRP and LRPs further defined, (WCPFC 2014a), management of South Pacific albacore has operated informally to meet the objectives. The information base is extensive from a wide range of biological studies and from a diverse range of fisheries. The information is sufficient to support the MULTIFAN-CL state-of-the-art stock assessment that provides probabilistic estimates of key parameters and their relationship to the implicit reference points. Advice from the stock assessment is provided by the WCPFC Scientific Committee (e.g., WCPFC 2015a) and additional work is carried out by the scientific provider, SPC, to the WCPFC. Annual decision-making, articulated through WCPFC CMMs, are supported by good scientific decision-support materials. The Commission also receives advice from technical and compliance committee (TCC).</p> <p>The most current management action is through WCPFC CMM 2015-02 (replacing CMM 2010-05), which specifies that: <i>“Commission Members, Cooperating Non-Members, and participating Territories (CCMs) shall not increase the number of their fishing vessels actively fishing for South Pacific albacore in the Convention Area south of 20°S above 2005 levels or recent historical (2000-2004) levels”</i>. WCPFC is monitoring the implementation of CMM 2015-02 by gathering data and reporting to the Commission (e.g., WCPFC14-2017-13).</p> <p>For several years, SC has noted that any increases in catch or effort in sub-tropical longline fisheries are likely to lead to declines in catch rates in some regions (10°S-</p>		

<b>PI 1.2.1</b>	<b>There is a robust and precautionary harvest strategy in place</b>		
	<p>30°S), especially for longline catches of adult albacore, with associated impacts on vessel profitability. WCPFC13 noted that the biomass available to the longline fishery has been depleted to the point where profitable fishing operations are threatened. Stakeholders at WCPFC13 noted that for a variety of reasons, the South Pacific albacore measure has not been able to control or limit the effects of increased fishing capacity on this stock.</p> <p>Despite the fact that the stock is not overfished and overfishing is not occurring, SC11 reiterated the advice of SC10 recommending that longline fishing mortality and longline catch be reduced to avoid further decline in the vulnerable biomass so that economically viable catch rates can be maintained.</p> <p>A number of the South Pacific Island states have grouped together under the auspices of FFA to develop the 'Tokelau Arrangement' to implement limits on catch of albacore.</p> <p>It is clear that progress is being made in developing a harvest strategy. Concerns are raised over the effectiveness of the current measure (CMM 2015-02) to reduce longline fishing mortality. There is also a lack of progress to define a TRP and the risk of breaching the LRP.</p> <p>The current stock status and the developments underway in designing the harvest strategy indicates that the harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1. The requirements for SG60 are met.</p> <p>The assessment team concluded that at this time the harvest strategy is not sufficiently responsive to the state of the stock, and the elements of the harvest strategy are not working together towards achieving stock management objectives reflected in PI 1.1.1. The requirements of SG80 are not met.</p> <p>The harvest strategy is not yet designed but aims to achieve stock management objectives, though WCPFC CMM 2014-06. The SG100 requirements are not currently met.</p> <p>The 60 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>		
<b>b</b>	<b>Harvest strategy evaluation</b>		
<b>Guide post</b>	The harvest strategy is <b>likely</b> to work based on prior experience or plausible argument.	The harvest strategy may not have been fully <b>tested</b> but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been <b>fully evaluated</b> and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
<b>Met?</b>	Y	Y	N
<b>Justification</b>	<p>Fishing mortality rate remains well below <math>F_{MSY}</math> (WCPFC) and the stock is well above <math>SB_{MSY}</math> (MSC default TRP) and <math>20\%SSB_{current,F=0}</math> (WCPFC explicit LRP). Evidence of this is seen in PI 1.1.1 (above) where <math>F_{latest}/F_{MSY}</math> is currently at 0.39, and <math>SB_{latest}/20\%SB_{F=0} = 2</math>. The SG80 requirements are met.</p> <p>The harvest strategy is informal and not fully evaluated. SG100 is not met.</p> <p>The 80 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>		

<b>PI 1.2.1</b>		<b>There is a robust and precautionary harvest strategy in place</b>		
<b>c</b>	Harvest strategy monitoring			
	<b>Guide post</b>	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	<b>Met?</b>	Y		
	<b>Justification</b>	<p>Internationally systems are in place for recording catch and effort for all fishing entities fishing on South Pacific albacore. WCPFC CCMs are required to annually report the following data for fishery monitoring: total annual catch (round weight by species) total annual effort (active vessels by fishery);<sup>[1]</sup> catch-effort (summary of logbook data); biological data, (size composition, length or weight frequencies, sex information).</p> <p>NMFS monitors the U.S. albacore fishery by collecting catch and effort data from fishing logbooks and sales slips landings from the U.S. troll fleet operating in the Pacific Ocean.</p> <p>Monitoring is in place that is expected to determine whether the harvest strategy is working. The SG60 requirements are met.</p> <p>The 60 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>		
<b>d</b>	Harvest strategy review			
	<b>Guide post</b>			The harvest strategy is periodically reviewed and improved as necessary.
	<b>Met?</b>			N
	<b>Justification</b>	<p>No harvest strategy for South Pacific albacore tuna has been formalized and is not subject to a formal review process. However, the harvest strategy is periodically reviewed and improved as necessary. WCPFC receive advice from Sc and TCC and reviews Conservation and Management Measures (CMMs) during the annual meeting.</p> <p>The SG100 requirements are not met.</p>		
<b>e</b>	Shark finning			
	<b>Guide post</b>	It is <b>likely</b> that shark finning is not taking place.	It is <b>highly likely</b> that shark finning is not taking place.	There is a <b>high degree of certainty</b> that shark finning is not taking place.
	<b>Met?</b>	Not relevant	Not relevant	Not relevant
	<b>Justification</b>	Sharks are not a target species		
<b>f</b>	<b>Review of alternative measures</b>			
	<b>Guide post</b>	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.

<b>PI 1.2.1</b>	<b>There is a robust and precautionary harvest strategy in place</b>		
	<b>Met?</b>	Not relevant	Not relevant
	<b>Justification</b>		
<b>References</b>	MSC 2016; Harley <i>et al.</i> 2015; WCPFC 2017d: Attachment N; WCPFC 2015a; WCPFC 2017c; WCPFC 2017d: Attachment H; FFA 2014.		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>70</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>1</b>

Evaluation Table for PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
a	HCRs design and application			
	Guide post	<p><b>Generally understood</b> HCRs are in place or <b>available</b> that are <b>expected</b> to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.</p>	<p><b>Well defined</b> HCRs are <b>in place</b> that <b>ensure</b> that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock <b>fluctuating around</b> a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.</p>	<p>The HCRs are expected to keep the stock <b>fluctuating at or above</b> a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, <b>most</b> of the time.</p>
	Met?	Y	N	
Justification	<p>MSC CR v2.0 lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level.</p> <p>First, CR v2.0 SA2.5.2a provides for HCR being recognized as available “...if stock biomass has not previously been reduced below <math>B_{MSY}</math> or has been maintained at that level for a recent period of time”.</p> <p>As noted at PI 1.1.1(c), The MULTIFAN-CL assessment provides probabilistic estimates of parameters of interest, and has been extensively explored through sensitivity tests (Harley <i>et al.</i> 2015). The stock assessment estimates spawning stock biomass, <math>SB_{latest}/SB_{MSY}</math> to be 2.86 with no overlap in confidence intervals. The stock is estimated never to have reduced to <math>SB_{MSY}</math> and has hence been above <math>SB_{MSY}</math> in all years.</p> <p>The CR v2.0 SA2.5.2a condition is therefore met.</p> <p>Second, CR v2.0 SA2.5.3b provides for HCR being recognized as available if “...there is an agreement or framework in place that requires the management body (WCPFC) to adopt HCRs before the stock declines below <math>B_{MSY}</math>”.</p> <p>WCPFC CMM 2014-06 sets 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, will be part of the implemented harvest strategies. The Commission agreed to adopt a work plan at the 2015 Commission meeting, with revision in 2016 (WCPFC 2017d), 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 (Pilling <i>et al.</i> 2015).</p> <p>During the fourth Harvest Strategy Workshop (MOW4) an update on revised TRPs was presented (Cartwright 2015). The revised TRPs were based on an updated 2015 stock assessment (Harley <i>et al.</i>, 2015), which featured new spatial structure and new input parameters, and the associated bio-economic analysis. Target levels examined included MSY and a range of financial targets (Cartwright 2015).</p> <p>Forum Fisheries Agency (FFA) presented a proposal to set the TRP for South Pacific albacore of 45% of the unfished biomass for south Pacific albacore (WCPFC, 2015d). The proposal also suggested the acceptable risk of breaching the adopted LRP of <math>20\%SB_{F=0}</math> should be 5% or less (WCPFC 2015d).</p>			

<b>PI 1.2.2</b>	<b>There are well defined and effective harvest control rules (HCRs) in place</b>		
	<p>At MOW4 Graham Pilling (SPC) provided a preliminary proof-of-concept that HCRs can be based upon catch or effort, based on 2015 south Pacific albacore assessment. The outcomes of this preliminary work provide a basis for future discussions of albacore HCRs for the catch-based control of fishing/harvest (Cartwright 2015).</p> <p>Projections at constant fishing mortality and average historical recruitment indicate the stock will remain relatively stable over the short- and long-term, suggesting also the stock will remain above <math>SB_{MSY}</math>.</p> <p>The CR v2.0 SA2.5.3b condition is therefore met.</p> <p>The 60 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>		
<b>b</b>	<b>HCRs robustness to uncertainty</b>		
<b>Guide post</b>		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a <b>wide</b> range of uncertainties including the ecological role of the stock, and there is <b>evidence</b> that the HCRs are robust to the main uncertainties.
<b>Met?</b>		N	N
<b>Justification</b>	HCR are still under development and neither SG80 nor SG100 is met.		
<b>c</b>	<b>HCRs evaluation</b>		
<b>Guide post</b>	There is <b>some evidence</b> that tools used or <b>available</b> to implement HCRs are appropriate and effective in controlling exploitation.	<b>Available evidence indicates</b> that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	<b>Evidence clearly shows</b> that the tools in use are effective in achieving the exploitation levels required under the HCRs.
<b>Met?</b>	Y	N	N
<b>Justification</b>	<p>Two MSC CR v2.0 conditions need to be addressed.</p> <p>First, CR v2.0 SA2.5.6 requires that as part of the evidence that tools are working, <i>“...teams should include current levels of exploitation in the UoA, as measured by fishing mortality rate where available”</i>. The best available information on the exploitation rate is in Harley <i>et al.</i> (2015); the MULTIFAN-CL base case assessment estimates <math>F_{current}/F_{MSY}</math> as 0.39, and F is estimated to never have reached <math>F_{MSY}</math>. CR v2.0. GSA2.5.2-7 as relates to SA2.5.6, notes that current F being <i>“equal to or less than <math>F_{MSY}</math> should be taken as evidence that the HCR is effective.”</i></p> <p>Second, MSC CR v2.0 SA2.5.5b, related to when HCRs are recognized as being available at Sla at the SG60 level (see above), requires <i>“...a description of a formal or legal agreement to trigger the development of HCR”</i>.</p> <p>CMM 2014-06 sets 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, will be part of the implemented harvest strategies. The WCPFC agreed adopted a work plan at the 2015 Commission meeting (which has been revised in 2016) with application to skipjack, bigeye,</p>		

<b>PI 1.2.2</b>	<b>There are well defined and effective harvest control rules (HCRs) in place</b>
	<p>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.</p> <p>The WCPFC CMM adoption of an approach has already triggered continuation of HCR development of <i>inter alia</i> South Pacific albacore.</p> <p>A score of SG60 is awarded, using CR v2.0 provisions for SG60 scoring.</p> <p>The 60 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>
<b>References</b>	Pilling <i>et al.</i> 2015; Cartwright 2015; WCPFC 2017d; MSC CR v2.0
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>	
	<b>60</b>
<b>CONDITION NUMBER (if relevant):</b>	
	<b>2</b>

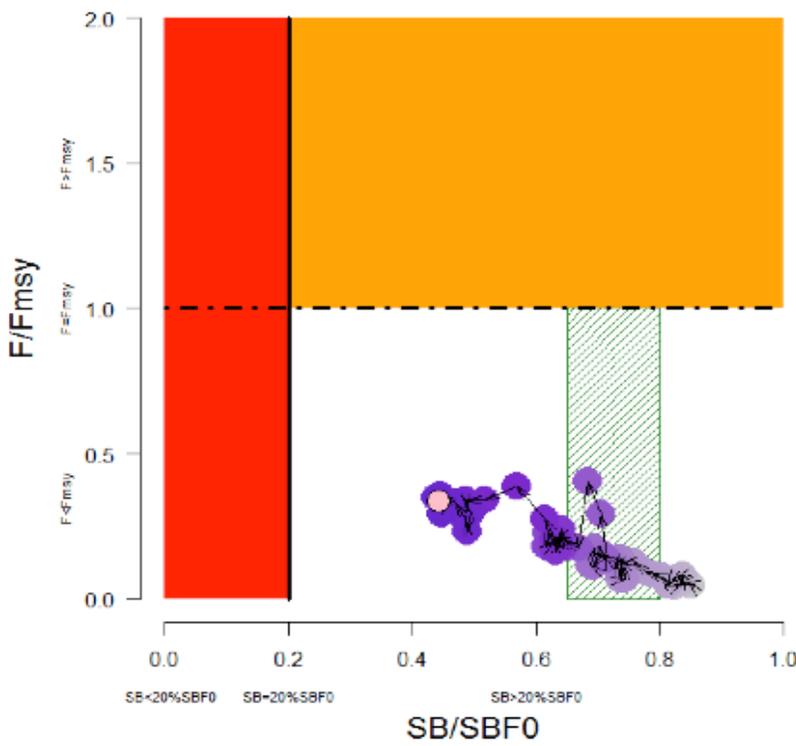
**Evaluation Table for PI 1.2.3 – Information and monitoring**

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Range of information			
	<b>Guide post</b>	<b>Some</b> relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	<b>Sufficient</b> relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A <b>comprehensive range</b> of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	<b>Met?</b>	Y	Y	N
<b>Justification</b>	<p>The south Pacific albacore stock has been monitored through the assessment work of the Secretariat of the Pacific Community (SPC).</p> <p>Stock structure: Knowledge of the spatial distribution and seasonal migration for the migratory south Pacific albacore is fairly well understood. Albacore tuna in the Pacific Ocean consists of two distinct stocks, the south Pacific stock (the subject of this evaluation) and the north Pacific stock. The equator is considered the north-south boundary between albacore stocks. Based on analysis of genetic data there is differentiation between north and south Pacific albacore. Other information that supports the discreteness of the two stocks includes fishery data, tagging data and ecological data.</p> <p>Stock productivity: Overall, there is adequate knowledge of the life-history parameters for south Pacific albacore to conduct robust assessments and develop appropriate biological reference points. Biological samples are routinely collected on an annual basis from all nations taking part in the albacore fisheries. Reliable data are available to estimate sex-specific growth rates, maturity ogive and fecundity. Length-weight relationships are established by the SPC to convert population numbers to biomass. In the 2015 stock assessments, natural mortality was fixed at <math>0.3 \text{ y}^{-1}</math> to be consistent with other stock assessments for tuna. The stock-recruitment function is a Beverton-Holt parameterization with a prior for steepness (<math>h</math>) of 0.9.</p> <p>Fleet composition: Detailed fleet information on the south Pacific albacore tuna fisheries is kept domestically by NMFS and internationally by WCPFC. CCMs provide annual reports on their active fleet to WCPFC (e.g., WCPFC 2017e).</p> <p>Stock abundance: Tremblay-Boyer <i>et al.</i> calculated standardized CPUE indices from available operational longline catch and effort. The final abundance indices used in the 2015 stock assessment were based on negative binomial regressions models (Harley <i>et al.</i> 2015). Stock abundance is determined via stock assessment (see PI 1.2.4).</p> <p>Fishery removals: Total catch from the U.S. albacore tuna fishery is reported annually to the WCPFC (WCPFC 2017e) Internationally systems are in place for recording catch and effort for all fishing entities fishing on south Pacific albacore. CCMs are required to annually report the following data for fishery monitoring: total annual catch, total annual effort and catch-effort (summary of logbook data).</p> <p>Other data: SPC has completed studies on environmental influences on albacore distribution using archival tagging.</p> <p>The requirements for SG80 are met. The 80 score is in agreement with the</p>			

<b>PI 1.2.3</b>		<b>Relevant information is collected to support the harvest strategy</b>		
		outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).		
<b>b</b>	Monitoring			
	<b>Guide post</b>	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are <b>regularly monitored at a level of accuracy and coverage consistent with the harvest control rule</b> , and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	<b>All information</b> required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent <b>uncertainties</b> in the information [data] and the robustness of assessment and management to this uncertainty.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	<p>Standardized abundance indices are regularly monitored by the ALBWG. The ALBWG aggregated catch and effort data into monthly 1<sup>0</sup>x1<sup>0</sup> strata for the surface fishery, and 5<sup>0</sup>x5<sup>0</sup> strata for the longline for standardization using generalized linear models.</p> <p>Internationally systems are in place for recording catch and effort for all fishing entities fishing on north Pacific albacore. CCMs are required to annually report the following data for fishery monitoring: total annual catch (round weight by species) total annual effort (active vessels by fishery);<sup>[17]</sup> catch-effort (summary of logbook data); biological data, (size composition, length or weight frequencies, sex information).</p> <p>Removals are monitored annually through NMFS landings and logbook records for the U.S. fishery.</p> <p>Because there is some conflict between some of the data sources available for the assessment including conflicts between the length-frequency data and CPUE series, and between troll length frequency samples and the age-length data the fishery does not meet the SG100.</p> <p>The requirements of the SG80 are met. The 80 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>		
<b>c</b>	Comprehensiveness of information			
	<b>Guide post</b>		There is good information on all other fishery removals from the stock.	
	<b>Met?</b>		Y	
	<b>Justification</b>	<p>All fishery removals are considered in the south Pacific albacore stock assessment. There are some data gaps (notably Vietnam, Philippines, Indonesia and some smaller coastal states). SPC provides support for developing data collection systems in these areas in order to address these shortcomings. Overall there is adequate information on all other fishery removals from the stock.</p> <p>The requirements of the SG80 are met. The 80 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>		
<b>References</b>	WCPFC 2017e; Harley et al. 2015 Tremblay-Boyer <i>et al.</i> 2015			
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>NA</b>

**Evaluation Table for PI 1.2.4 – Assessment of stock status**

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Appropriateness of assessment to stock under consideration			
	<b>Guide post</b>		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	<b>Met?</b>		Y	N
	<b>Justification</b>	<p>The assessment for south Pacific albacore tuna is carried out with the MULTIFAN-CL model (Fournier et al. 1998). MULTIFAN-CL is a statistical length based age-structured population modeling framework that has been applied in a wide variety of fish assessments globally. The method has generally been accepted as rigorous. MULTIFAN-CL is a state-of-the-art software that is implemented in the Automatic Differentiation Model Builder (ADMB) software developed by David Fournier. The 2015 stock assessment model is a length-based, age-structured, forward-simulating, fully integrated, statistical model.</p> <p>The specification of the base case model for south Pacific albacore followed several steps. First, the spatial and temporal extent of fisheries in the assessment was defined based on analyses of the biology and historical fishing operations of albacore fisheries. Second, the data sources and inputs for these fisheries in the model, including total catch, indices of relative abundance, and size compositions were identified, collated and reviewed for completeness, trends, and outliers or unusual behavior. Third, important biological parameters (e.g., growth, stock-recruitment relationship) were obtained from previous studies after review by Harley <i>et al.</i> (2015) and included in the model as fixed parameters, or estimated within the assessment model. Sensitivity analyses were conducted to evaluate impact on model results from changes in data series, life history parameter assumptions (natural mortality, steepness), selectivity parameters, and alternative weightings of composition data.</p> <p>However one ‘major feature’ relevant to the biology of the species and the nature of the UoA that is not taken into account in the present stock assessment is the fishery removals from this stock outside of the WCPFC convention area (i.e. East of 110° W) in the Eastern Pacific Ocean (EPO). While these are small relative to the catches that ARE included in the stock assessment (noting the catch statistics used in the 2015 stock assessment do include those from the “overlap area” between WCPO and EPO (G. Pilling, Pers Comm.)), they have been increasing in recent years, and the IATTC has indicated that the assessment would benefit from their inclusion and is planning to do a collaborative benchmark assessment with SPC in 2022 wherein the EPO catches will be included (IATTC 2018). Therefore the SG100 is not met and we have raised a recommendation associated with this concern.</p> <p>The requirements of the SG80 are met but not the SG100 on the basis of not including catches of South Pacific albacore from outside the WCPFC treaty area as an input to the stock assessment. This is slightly out of agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016), however the difference is not material.</p>		
<b>b</b>	Assessment approach			
	<b>Guide post</b>	The assessment estimates stock status relative to generic reference points appropriate to the species	The assessment estimates stock status relative to reference points that are appropriate to the stock	

PI 1.2.4	There is an adequate assessment of the stock status																																										
	category.	and can be estimated.																																									
Met?	Y	Y																																									
Justification	<p>The 2015 assessment provides estimates south Pacific albacore stock status relative to the <math>F_{MSY}</math> and <math>SB_{F=0}</math>:</p>  <p>The requirements of the SG80 are met. The 80 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>																																										
c	Uncertainty in the assessment																																										
Guide post	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a <b>probabilistic</b> way.																																								
Met?	Y	Y	Y																																								
Justification	<p>Harley <i>et al.</i> (2015) used a structural uncertainty analysis to describe the uncertainty in key model outputs. For the structural uncertainty analysis, a crosswise grid of model runs was undertaken which incorporated many of the options of uncertainty explored by the key model runs and one-off sensitivity analysis:</p> <table border="1"> <thead> <tr> <th></th> <th>Base case</th> <th>5%</th> <th>Grid Median</th> <th>95%</th> </tr> </thead> <tbody> <tr> <td>MSY (t)</td> <td>76,800</td> <td>62,260</td> <td>84,980</td> <td>129,814</td> </tr> <tr> <td><math>C_{latest}/MSY</math></td> <td>1.00</td> <td>0.60</td> <td>0.91</td> <td>1.23</td> </tr> <tr> <td><math>F_{current}/F_{MSY}</math></td> <td>0.39</td> <td>0.13</td> <td>0.34</td> <td>0.62</td> </tr> <tr> <td><math>B_0</math> (t)</td> <td>711,400</td> <td>638,465</td> <td>806,900</td> <td>1,024,500</td> </tr> <tr> <td><math>B_{current}</math> (t)</td> <td>456,984</td> <td>365,962</td> <td>509,653</td> <td>783,308</td> </tr> <tr> <td><math>SB_0</math> (t)</td> <td>396,500</td> <td>368,925</td> <td>438,700</td> <td>502,275</td> </tr> <tr> <td><math>SB_{MSY}</math> (t)</td> <td>57,430</td> <td>35,762</td> <td>59,180</td> <td>90,778</td> </tr> </tbody> </table>				Base case	5%	Grid Median	95%	MSY (t)	76,800	62,260	84,980	129,814	$C_{latest}/MSY$	1.00	0.60	0.91	1.23	$F_{current}/F_{MSY}$	0.39	0.13	0.34	0.62	$B_0$ (t)	711,400	638,465	806,900	1,024,500	$B_{current}$ (t)	456,984	365,962	509,653	783,308	$SB_0$ (t)	396,500	368,925	438,700	502,275	$SB_{MSY}$ (t)	57,430	35,762	59,180	90,778
	Base case	5%	Grid Median	95%																																							
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<b>PI 1.2.4</b>	<b>There is an adequate assessment of the stock status</b>				
	SB <sub>F=0</sub> (t)	408,361	392,358	442,163	486,146
	SB <sub>latest</sub> (t)	164,451	131,456	190,467	272,696
	SB <sub>latest</sub> /SB <sub>MSY</sub>	2.86	1.74	3.20	7.03
	SB <sub>latest</sub> /SB <sub>F=0</sub>	0.40	0.30	0.44	0.60
	<p>The trajectories of SB and 95% CIs relation to LRP show that the stock status is expressed in a probabilistic way in relation to reference points.</p> <p>The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way. SG100 requirements are met.</p> <p>The requirements of the SG100 are met. The 100 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>				
<b>d</b>	Evaluation of assessment				
	<b>Guide post</b>			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.	
	<b>Met?</b>			Y	
	<b>Justification</b>	<p>Harley <i>et al.</i> (2015) conducted extensive sensitivity analyses to evaluate alternative assumptions on the assessment results. Several hundred model runs were undertaken. Information was presented on the bounds of plausible model sensitivity to biological assumptions (natural mortality, steepness) and sensitivity to data inputs (alternative CPUE indices, length data weighting).</p> <p>The assessment has been tested using a systematic exploration of the interactions among different sets of assumptions. This confirms that alternative hypothesis and assessment approaches have been rigorously explored.</p> <p>The requirements of the SG100 are met. The 100 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>			
<b>e</b>	Peer review of assessment				
	<b>Guide post</b>		The assessment of stock status is subject to peer review.	The assessment has been <b>internally and externally</b> peer reviewed.	
	<b>Met?</b>		Y	N	
	<b>Justification</b>	<p>There is a robust science and assessment process in place which has been subject to external review (WCPFC 2009).</p> <p>The albacore assessments are internally reviewed by the SPC Ocean Fisheries Program which conducts pre-assessment workshops. The assessment results are reviewed by the WCPFC Scientific Committee.</p> <p>However, the assessment has not been externally reviewed. The requirements of the SG100 are not met.</p> <p>The 80 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p>			
	<b>References</b>	Harley <i>et al.</i> 2015; WCPFC 2017b; WCPFC 2009; IATTC 2018			
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>					<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>					<b>NA</b>

PI 1.2.4	There is an adequate assessment of the stock status	
<b>RECOMENDATION:</b> Relative to Scoring Issue a, we recommend that the clients support the collaboration between the IATTC and SPC planned for 2022 to carry out a benchmark assessment of South Pacific albacore which will include catches from the EPO as well as WCPO.		

**Evaluation Table for PI 2.1.1 – Primary species outcome**

<b>PI 2.1.1</b>		<b>The UoA aims to maintain primary species above the PRI and does not hinder recovery of primary species if they are below the PRI.</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	Main primary species stock status			
	<b>Guide post</b>	Main primary species are <b>likely</b> to be above the PRI  OR  If the species is below the PRI, the UoA has measures in place that are <b>expected</b> to ensure that the UoA does not hinder recovery and rebuilding.	Main primary species are <b>highly likely</b> to be above the PRI  OR  If the species is below the PRI, there is either <b>evidence of recovery</b> or a demonstrably effective strategy in place <b>between all MSC UoAs which categorise this species as main</b> , to ensure that they collectively do not hinder recovery and rebuilding.	There is a <b>high degree of certainty</b> that main primary species are above the PRI <b>and are</b> fluctuating around a level consistent with MSY.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	There is no primary species that exceeds 5% of the total albacore landings, therefore there are no main primary species identified in this fishery and the SG100 is met for this scoring issue.		
<b>b</b>	Minor primary species stock status			
	<b>Guide post</b>			Minor primary species are highly likely to be above the PRI  OR  If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species
	<b>Met?</b>			Y
	<b>Justification</b>	There are no minor primary species in this fishery (see Table 3).		
<b>References</b>				
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				

Evaluation Table for PI 2.1.2 – Primary species management strategy

<b>PI 2.1.2</b>	<b>There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.</b>		
<b>Scoring Issue</b>	SG 60	SG 80	SG 100
<b>a</b>	Management strategy in place		
<b>Guide post</b>	There are <b>measures</b> in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to above the point where recruitment would be impaired.	There is a <b>partial strategy</b> in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the point where recruitment would be impaired.	There is a <b>strategy</b> in place for the UoA for managing main and minor primary species.
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	There is no primary species that exceeds 5% of the total albacore landings, therefore there are no main primary species identified in this fisheryThe UoA uses troll method of fishing esures that the capture of species other than albacore is a rare event and poses no risk to those species. Therefore it is considered that there is a strategy in place for the UoA for managing minor primary species, and the SG100 is met for this scoring issue.		
<b>b</b>	Management strategy evaluation		
<b>Guide post</b>	The measures are considered <b>likely</b> to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some <b>objective basis for confidence</b> that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	There is no primary species that exceeds 5% of the total albacore landings, therefore there are no main primary species identified in this fishery. The UoA's use of the troll method of fishing ensures that the capture of species other than albacore is a rare event and poses no risk to those species. Therefore testing supports high confidence that the strategy is working based on information directly about the fishery and species involved. SG100 is met.		
<b>c</b>	Management strategy implementation		
<b>Guide post</b>		There is <b>some evidence</b> that the measures/partial strategy is being <b>implemented successfully</b> .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).
<b>Met?</b>		Y	Y
<b>Justification</b>	There is no primary species that exceeds 5% of the total albacore landings, and therefore there are no main primary species identified in this fishery. In addition, there are no minor primary species identified either (see Table 3); therefore the SG100 is met.		
<b>d</b>	Shark finning		

<b>PI 2.1.2</b>		<b>There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.</b>		
	<b>Guide post</b>	It is <b>likely</b> that shark finning is not taking place.	It is <b>highly likely</b> that shark finning is not taking place.	There is a <b>high degree of certainty</b> that shark finning is not taking place.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	Although this is a tuna fishery, the use of troll gear makes capture of sharks highly unlikely. Enforcement reports from NOAA Fisheries (M. Killary, pers. comm) indicate that there have been no shark finning violations recorded for this fleet in at least five years. Therefore there is a high degree of certainty that shark finning is not taking place.		
<b>e</b>	<b>Review of alternative measures</b>			
	<b>Guide post</b>	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.
	<b>Met?</b>	Not relevant	Not relevant	Not relevant
	<b>Justification</b>	There is no primary species that exceeds 5% of the total albacore landings, therefore there are no main primary species identified in this fishery. There are also no minor primary species identified (see Table 3). Extremely negligible quantities of other HMS species are discarded at sea according to a description of the unsystematic observer program and logbook analysis from the 1990s (in the North Pacific—assumed also to apply here). Nevertheless, the PFMC (2016a) did conduct a review of possible management measures that could be deployed to further reduce unwanted catches, and determined that no action was required to implement any of them. Therefore this scoring issue is not relevant.		
	<b>References</b>	M. Killary, pers comm 2017, FMC 2016a, PFMC 2016b		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				

Evaluation Table for PI 2.1.3 – Primary species information

<b>PI 2.1.3</b>	<b>Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species</b>		
<b>Scoring Issue</b>	SG 60	SG 80	SG 100
<b>a</b>	Information adequacy for assessment of impact on main primary species		
<b>Guide post</b>	Qualitative information is <b>adequate to estimate</b> the impact of the UoA on the main primary species with respect to status.  OR  If RBF is used to score PI 2.1.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.	Some quantitative information is available and is <b>adequate to assess</b> the impact of the UoA on the main primary species with respect to status.  OR  If RBF is used to score PI 2.1.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.	Quantitative information is available and is <b>adequate to assess with a high degree of certainty</b> the impact of the UoA on main primary species with respect to status.
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	There is no primary species that exceeds 5% of the total albacore landings; therefore there are no main primary species identified in this fishery and the SG100 is met for this scoring issue.		
<b>b</b>	Information adequacy for assessment of impact on minor primary species		
<b>Guide post</b>			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
<b>Met?</b>			Y
<b>Justification</b>	Extremely negligible quantities of other HMS species are caught and retained in this fishery (<0.01% combined) and as such are not considered to be significant enough to even consider as minor species. The SG100 is met.		
<b>c</b>	Information adequacy for management strategy		
<b>Guide post</b>	Information is adequate to support <b>measures</b> to manage <b>main</b> primary species.	Information is adequate to support a <b>partial strategy</b> to manage <b>main</b> Primary species.	Information is adequate to support a <b>strategy</b> to manage <b>all</b> primary species, and evaluate with a <b>high degree of certainty</b> whether the strategy is achieving its objective.
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	Extremely negligible quantities of other HMS species are caught and retained in this fishery (<0.01% combined) and as such are not considered to be significant enough to even consider as minor species. The SG100 is met.		
<b>References</b>	PFMC 2016b		

<b>PI 2.1.3</b>	<b>Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species</b>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>		

Evaluation Table for PI 2.2.1 – Secondary species outcome

<b>PI 2.2.1</b>		<b>The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	<b>Main secondary species stock status</b>			
	<b>Guide post</b>	Main Secondary species are <b>likely</b> to be within biologically based limits.  OR  If below biologically based limits, there are measures in place expected to ensure that the UoA does not hinder recovery and rebuilding.	Main secondary species are <b>highly likely</b> to be above biologically based limits  OR  If below biologically based limits, there is either <b>evidence of recovery</b> or a <b>demonstrably effective partial strategy</b> in place such that the UoA does not hinder recovery and rebuilding.  AND  Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a, demonstrably effective strategy in place between those MSC UoAs that also have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.	There is a <b>high degree of certainty</b> that main secondary species are within biologically based limits.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	There is no secondary species that exceeds 5% of the total albacore landings; therefore there are no main secondary species identified in this fishery, and SG100 is met for this scoring issue.		
<b>b</b>	<b>Minor secondary species stock status</b>			
	<b>Guide post</b>			Minor secondary species are highly likely to be above biologically based limits.  OR  If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species

<b>PI 2.2.1</b>		<b>The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit.</b>	
	<b>Met?</b>		Y
	<b>Justification</b>	The total proportion of non-target HMS species caught in this fishery is extremely low (zero reported in the past 5 years), and therefore there is no single unmanaged species that is caught in significant enough quantities to even be considered as a minor secondary species. Hence, the SG100 is met.	
<b>References</b>		N/A	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>			

Evaluation Table for PI 2.2.2 – Secondary species management strategy

<b>PI 2.2.2</b>		<b>There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	<b>Management strategy in place</b>			
<b>Guide post</b>	There are <b>measures</b> in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a <b>partial strategy</b> in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a <b>strategy</b> in place for the UoA for managing main and minor secondary species.	
<b>Met?</b>	Y	Y	Y	
<b>Justification</b>	There is no secondary species that exceeds 5% of the total albacore landings; therefore there are no main secondary species identified in this fishery, and SG100 is met for this scoring issue.			
<b>b</b>	<b>Management strategy evaluation</b>			
<b>Guide post</b>	The measures are considered <b>likely</b> to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is <b>some objective basis for confidence</b> that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	<b>Testing supports high confidence</b> that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.	
<b>Met?</b>	Y	Y	Y	
<b>Justification</b>	There is no secondary species that exceeds 5% of the total albacore landings. The UoA's use of the troll method of fishing ensures that the capture of species other than albacore is a rare event and poses no risk to those species. Therefore testing supports high confidence that the strategy is working based on information directly about the fishery and species involved. SG100 is met.			
<b>c</b>	<b>Management strategy implementation</b>			
<b>Guide post</b>		There is <b>some evidence</b> that the measures/partial strategy is being <b>implemented successfully</b> .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).	
<b>Met?</b>		Y	Y	
<b>Justification</b>	There are no main or minor secondary species in this fishery (see justifications in PI 2.2.1), thus there is no management strategy needed for the UoA and the SG100 is met for this scoring issue.			
<b>d</b>	<b>Shark finning</b>			
<b>Guide post</b>	It is <b>likely</b> that shark finning is not taking place.	It is <b>highly likely</b> that shark finning is not taking	There is a <b>high degree of certainty</b> that shark	

<b>PI 2.2.2</b>		<b>There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.</b>		
			place.	finning is not taking place.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	Although this is a tuna fishery, the use of troll gear makes capture of sharks highly unlikely. Enforcement reports from NOAA Fisheries (M.Killary pers. comm. 2017) indicate that there have been no shark finning violations recorded for this fleet in at least five years. Therefore there is a high degree of certainty that shark finning is not taking place.		
<b>e</b>	Review of alternative measures to minimise mortality of unwanted catch			
	<b>Justification</b>	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of <b>unwanted</b> catch of main secondary species.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of <b>unwanted</b> catch of main secondary species and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of <b>unwanted</b> catch of all secondary species, and they are implemented, as appropriate.
	<b>Met?</b>	Not relevant	Not relevant	Not relevant
	<b>Guide post</b>	There are no unwanted catches of secondary species in this fishery.		
	<b>References</b>	M.Killary pers. comm. 2017		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				

Evaluation Table for PI 2.2.3 – Secondary species information

<b>PI 2.2.3</b>	<b>Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.</b>		
<b>Scoring Issue</b>	SG 60	SG 80	SG 100
<b>a</b>	<b>Information adequacy for assessment of impacts on main secondary species</b>		
<b>Guide post</b>	Qualitative information is <b>adequate to estimate</b> the impact of the UoA on the main secondary species with respect to status.  OR <b>If RBF is used to score PI 2.2.1 for the UoA:</b>  Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is available and <b>adequate to assess</b> the impact of the UoA on main secondary species with respect to status.  OR <b>If RBF is used to score PI 2.2.1 for the UoA:</b>  Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	Quantitative information is available and <b>adequate to assess with a high degree of certainty</b> the impact of the UoA on main secondary species with respect to status.
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	There is no secondary species that exceeds 5% of the total albacore landings; therefore there are no main secondary species identified in this fishery, and the SG100 is met for this scoring issue.		
<b>b</b>	<b>Information adequacy for assessment of impacts on minor secondary species</b>		
<b>Guide post</b>			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
<b>Met?</b>			Y
<b>Justification</b>	The total proportion of non-target HMS species caught in this fishery is extremely low (zero reported in the past 5 years; see section 3.4.2), and therefore there is no single unmanaged species that is caught in significant enough quantities to even be considered as a minor secondary species. This assessment is supported by some quantitative information from the limited observer program and logbook analysis of the 1990s (PFMC 2016b). Hence, the SG100 is met.		
<b>c</b>	<b>Information adequacy for management strategy</b>		
<b>Guide post</b>	Information is adequate to support <b>measures</b> to manage <b>main</b> secondary species.	Information is adequate to support a <b>partial strategy</b> to manage <b>main</b> secondary species.	Information is adequate to support a <b>strategy</b> to manage <b>all</b> secondary species, and <b>evaluate</b> with a <b>high degree of certainty</b> whether the strategy is <b>achieving its objective</b> .
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	The total proportion of non-target HMS species caught in this fishery is extremely low (<0.01%; see section 3.4.2), and therefore there is no single unmanaged species that is caught in significant enough quantities to even be considered as a		

<b>PI 2.2.3</b>	<b>Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species.</b>	
	minor secondary species. Therefore no strategy is needed and thus no further information needed to evaluate the effectiveness of the strategy. SG100 is met.	
<b>References</b>	PFMC 2016b	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>		

Evaluation Table for PI 2.3.1 – ETP species outcome

<b>PI 2.3.1</b>		<b>The UoA meets national and international requirements for the protection of ETP species</b>		
		<b>The UoA does not hinder recovery of ETP species</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	Effects of the UoA on population/stock within national or international limits, where applicable			
	<b>Guide post</b>	Where national and/or international requirements set limits for ETP species, the effects of the UoA on the population/stock are known and <b>likely</b> to be within these limits.	Where national and/or international requirements set limits for ETP species, the <b>combined effects of the MSC UoAs</b> on the population/stock are known and <b>highly likely</b> to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a <b>high degree of certainty</b> that the <b>combined effects of the MSC UoAs</b> are within these limits.
	<b>Met?</b>	Not relevant	Not relevant	Not relevant
	<b>Justification</b>	Not scored; see scoring issue b.		
<b>b</b>	Direct effects			
	<b>Guide post</b>	Known direct effects of the UoA are likely to not <b>hinder recovery</b> of ETP species.	Known direct effects of the UoA are <b>highly likely</b> to not <b>hinder recovery</b> of ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	<p>ETP species of potential relevance to the AAFA and WFOA South Pacific albacore fishery include a variety of marine mammal, sea turtle and bird species, however the pole-and-line/troll and jig fishery is not thought to interact with any of these, except the remote possibility of turtle interactions. The Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA) are key pieces of US legislation, but the US is not a Party of the Convention on the Conservation of Migratory Species of Wild Animals.</p> <p>Various federal laws provide protection for special resources, including those for protected species under ESA, MMPA, and MBTA. Interactions of HMS fishing gears with protected species (in the North Pacific) are described in Appendix D of the HMS FMP (PFMC 2016b). This FMP authorizes the adoption of measures to minimize interactions of HMS gears with protected species and to implement recommendations contained in Biological Opinions (ESA), Take Reduction Plans (MMPA), Seabird Management Plans, or other relevant documents pertaining to HMS fisheries. The FMP also authorizes programs to collect information on interactions in any or all HMS fisheries. Fishery-specific measures affecting protected species are included in the initial management measures for drift gillnet and longline fisheries, but protected species interactions with the other gear types (including surface hook-and-line/troll fisheries) are not major issues, and no alternatives were considered for those gears.</p> <p>The FMP adopts a framework authorization for protected species conservation measures and implements initial conservation and management measures for drift gillnet and pelagic longline fisheries as described in section 6.2, Appendix D and the HMS FMP FEIS (PFMC 2006, sections 9.2.5.1-2). The FMP requires general provision for its proposed</p>		

<b>PI 2.3.1</b>		<b>The UoA meets national and international requirements for the protection of ETP species</b>	
		<b>The UoA does not hinder recovery of ETP species</b>	
		<p>protected species measures and also for future measures to reduce the takes of protected species and to minimize the risk of adverse impacts from those takes. The framework provisions of the FMP would be used to address new protected species concerns as they are identified. (PFMC 2016b)</p> <p>Interactions between ETP species and the AAFA troll fishery are highly unlikely, given that trolling is highly selective, and the jigs used should preclude the catching of any marine mammal, turtle or seabird species other than possibly through accidental snagging. However, this risk is minimal and the troll fisheries are not identified in any recovery or spotlight species action plan.</p> <p>In summary, the highly selective nature of the gear types, information provided in the various recovery and species action plans, the lack of any recommendations made regarding a need to collect more data on catches in the South Pacific albacore troll fishery in the U.S. National Bycatch Report (NMFS 2011) and the List of Fisheries assessment (NOAA Fisheries 2017), it is at least highly likely that there are no significant detrimental direct effects of the UoA on ETP species, but without more data it cannot be said that there is a “high degree of confidence” according to the MSC definition. Hence the SG80 is met but not the SG100.</p>	
<b>c</b>	Indirect effects		
<b>Guide post</b>		Indirect effects have been considered and are thought to be <b>highly likely</b> to not create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.
<b>Met?</b>		Y	Y
<b>Justification</b>	Studies (e.g. Baum and Worm 2009) have indicated that that large-scale removals of large pelagic species can have ecosystem effects such as causing long-term changes in ecosystem structure in the ocean environment. However, the AAFA and WFOA removals of albacore as compared to the total removal of large pelagic species from all fisheries across the South Pacific is extremely small. Albacore is not a key prey item for any species in the South Pacific, including ETP species (Kitchell et al. 1999), and the fishery appears very unlikely to significantly impact other higher trophic-level predators. Hence the SG100 is met.		
<b>References</b>	Baum and Worm 2009, Kitchell et al. 1999, NMFS, 2011, NOAA Fisheries 2017, PFMC 2016b		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>90</b>
<b>CONDITION NUMBER (if relevant):</b>			

Evaluation Table for PI 2.3.2 – ETP species management strategy

PI 2.3.2		<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> <li>• meet national and international requirements;</li> <li>• ensure the UoA does not hinder recovery of ETP species.</li> </ul> <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place (national and international requirements)			
	Guide post	There are <b>measures</b> in place that minimise the UoA-related mortality of ETP species, and are expected to be <b>highly likely to achieve</b> national and international requirements for the protection of ETP species.	There is a <b>strategy</b> in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be <b>highly likely to achieve</b> national and international requirements for the protection of ETP species.	There is a <b>comprehensive strategy</b> in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to <b>achieve above</b> national and international requirements for the protection of ETP species.
	Met?	Y	Y	Y
	Justification	<p>Various federal laws provide protection for special resources, including those for protected species under ESA, MMPA, and MBTA. Interactions of HMS fishing gears with protected species are described in Appendix D of the HMS FMP (PFMC 2016b). This FMP authorizes the adoption of measures to minimize interactions of HMS gears with protected species and to implement recommendations contained in Biological Opinions (ESA), Take Reduction Plans (MMPA), Seabird Management Plans, or other relevant documents pertaining to HMS fisheries. The FMP also authorizes programs to collect information on interactions in any or all HMS fisheries. Fishery-specific measures affecting protected species are included in the initial management measures for drift gillnet and longline fisheries, but protected species interactions with the other gear types (including troll fisheries) are not major issues, and no alternatives were considered for those gears.</p> <p>The FMP adopts a framework authorization for protected species conservation measures and implements initial conservation and management measures for drift gillnet and pelagic longline fisheries as described in section 6.2, Appendix D and the HMS FMP FEIS. :The FMP requires general provision for its proposed protected species measures and also for future measures to reduce the takes of protected species and to minimize the risk of adverse impacts from those takes. The framework provisions of the FMP would be used to address new protected species concerns as they are identified. (PFMC 2016b).</p> <p>Although it is highly unlikely that this UoA is contributing to any detrimental impacts to ETP species, insofar as this management strategy is comprehensive and responsive to the need to adopt and revise management measures for HMS fisheries with know impacts to ETP species, as well as to identify and address new concerns, it can be said that there is a comprehensive strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to achieve above national and international requirements for the protection of ETP species. Thus the SG100 is met.</p>		
b	Management strategy in place (alternative)			
	Guide post	There are <b>measures</b> in place that are expected to ensure the UoA does not hinder the recovery of	There is a <b>strategy</b> in place that is expected to ensure the UoA does not hinder the recovery of	There is a <b>comprehensive strategy</b> in place for managing ETP species, to ensure

PI 2.3.2	<p><b>The UoA has in place precautionary management strategies designed to:</b></p> <ul style="list-style-type: none"> <li>• meet national and international requirements;</li> <li>• ensure the UoA does not hinder recovery of ETP species.</li> </ul> <p><b>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</b></p>			
		ETP species.	ETP species.	the UoA does not hinder the recovery of ETP species
	<b>Met?</b>	Not relevant	Not relevant	Not relevant
	<b>Justification</b>	Not scored because this scoring issue is not relevant.		
c	Management strategy evaluation			
	<b>Guide post</b>	The measures are <b>considered likely</b> to work, based on <b>plausible argument</b> (e.g. general experience, theory or comparison with similar fisheries/species).	There is an <b>objective basis for confidence</b> that the measures/strategy will work, based on <b>information</b> directly about the fishery and/or the species involved.	The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a <b>quantitative analysis</b> supports <b>high confidence</b> that the strategy will work.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	All U.S. fisheries are required to abide by protected species regulations, including the MMPA and other relevant regulations. Although these are overarching policies, they do contain requirements for reporting all ETP species intractions, and careful handling in the case of encounters with fishing gear. This UoA is considered a Category II fishery since there are no documented mortalities or injuries of marine mammals in any gear type. The available data suggest that it is highly unlikely to have any significant interactions with other ETP species including turtles and seabirds. This comprises an objective basis for confidence that any measures/strategy to ensure this UoA does not hinder the recovery of ETP species would work, based on information directly about the fishery also the species involved. Because this fishery has negligible ETP species interactions, this confidence is mainly achieved through evidence of the rigorous application of the above-described policies and regulations in fisheries that have more potential to impact ETP species. As such, it is not possible to say that there has been the quantitative analysis of this UoA required in the SG100. Thus the SG80 is met but not the SG100.		
d	Management strategy implementation			
	<b>Guide post</b>		There is some <b>evidence</b> that the measures/strategy is being implemented successfully.	There is <b>clear evidence</b> that the strategy/comprehensive strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a) or (b).
	<b>Met?</b>		Y	Y
	<b>Justification</b>	As explained in PI 2.3.1, this fishery is at least highly unlikely to detrimentally impact ETP species. That said, there is clear evidence that the comprehensive strategy for managing fishery impacts to ETP species in general under the U.S. ESA, MMPA and other relevant regulations is being implemented successfully and achieving its objectives, and this fishery is part of that management framework.		

PI 2.3.2	<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> <li>• meet national and international requirements;</li> <li>• ensure the UoA does not hinder recovery of ETP species.</li> </ul> <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species.</p>		
	Therefore SG100 is met.		
e	Review of alternative measures to minimize mortality of ETP species		
	<b>Guide post</b>	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
	<b>Met?</b>	Y	Y
	<b>Justification</b>	All U.S. fisheries are required to abide by protected species regulations, including the MMPA and other relevant regulations. Although these are overarching policies, they do contain requirements for reporting all ETP species intractions, and careful handling in the case of encounters with fishing gear. This UoA is considered a Category II fishery since there are no documented mortalities or injuries of marine mammals in any gear type. The available data suggest that it is highly unlikely to have any significant interactions with other ETP species including turtles and seabirds. As such, a biennial review of measures specifically related to this UoA does not take place, but is also not necessary. There is an annual review of the MMPA List of Fisheries, and fisheries are reclassified into different Categories where data suggest it is necessary. In addition, the National Bycatch Report subject to limited updating with relevant changes as new information becomes available. This framework is therefore considered adequate to meet the SG100 for this scoring issue.	
<b>References</b>	PFMC 2016b		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>95</b>
<b>CONDITION NUMBER (if relevant):</b>			

Evaluation Table for PI 2.3.3 – ETP species information

<b>PI 2.3.3</b>		<b>Relevant information is collected to support the management of UoA impacts on ETP species, including:</b> <ul style="list-style-type: none"> <li>• <b>Information for the development of the management strategy;</b></li> <li>• <b>Information to assess the effectiveness of the management strategy;</b></li> <li>and</li> <li>• <b>Information to determine the outcome status of ETP species.</b></li> </ul>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	Information adequacy for assessment of impacts			
<b>Guide post</b>	<p>Qualitative information is <b>adequate to estimate</b> the UoA related mortality on ETP species.</p> <p>OR</p> <p>If RBF is used to score PI 2.3.1 for the UoA:</p> <p>Qualitative information is <b>adequate to estimate productivity and susceptibility</b> attributes for ETP species.</p>	<p>Some quantitative information is <b>adequate to assess</b> the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species.</p> <p>OR</p> <p>If RBF is used to score PI 2.3.1 for the UoA:</p> <p>Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.</p>	<p>Quantitative information is available to assess with a high degree of certainty the <b>magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status</b> of ETP species.</p>	
<b>Met?</b>	Y	Y	N	
<b>Justification</b>	<p>The 2017 List of Fisheries, which is a requirement of the Marine Mammal Protection Act (1972), classifies U.S. fisheries as being in Category I (“frequent incidental mortality and serious injuries of marine mammals”), Category II (“occasional incidental mortality and serious injuries of marine mammals”), or Category III (“a remote likelihood or no known incidental mortality and serious injuries of marine mammals”). NOAA Fisheries (2017) assessed the South Pacific albacore troll fisheries as Category II since there are no documented mortalities or injuries of marine mammals in any gear type. However, there is no observer program covering this high seas fishery. Therefore, the list of species/stocks killed/injured in all gear types in this fishery is indicated as “undetermined” on the List of Fisheries.</p> <p>Little data are available on marine mammal interactions in the AAFA and WFOA albacore fishery. What is available comes from logbooks, which show no interactions with marine mammals.</p> <p>The drift gillnet 2000 Biological Opinion (for the North Pacific) states that anecdotal information indicates there are rare occurrences of sea turtle take in the U.S. albacore fishery (NMFS 2011). However, it is not possible to determine if any turtles were killed or seriously injured based on available data. Because of the nature of the live-bait fishery, there should be no interactions with turtles when fishing. There is the possibility, however remote, of capturing a sea turtle alive while catching bait. If a sea turtle were taken while catching bait, it could be easily released.</p> <p>This HMS fishery is not observed. Incidental takes of 'albatrosses, unid.' are known to occur in the albacore troll fishery but appear to be infrequent (Cousins and Cooper 2000 citing Bartoo). The extent of seabird interactions is unknown because</p>			

PI 2.3.3	<p><b>Relevant information is collected to support the management of UoA impacts on ETP species, including:</b></p> <ul style="list-style-type: none"> <li>• <b>Information for the development of the management strategy;</b></li> <li>• <b>Information to assess the effectiveness of the management strategy;</b></li> <li>and</li> <li>• <b>Information to determine the outcome status of ETP species.</b></li> </ul>		
	<p>of the lack of observers on vessels in the fishery. There are no records or observations or any evidence to suggest there would be any interactions between troll gear and endangered seabirds.</p> <p>It is clear that there is not sufficient observer coverage or logbook recording to determine that available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities, and injuries and the consequences for the status of ETP species. However, due to the nature of the fishery and the evidence that is available from evaluations of impacts or potential impacts, it is possible to determine that some quantitative information is adequate to assess the UoA-related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. Therefore the SG80 is met but not the SG100.</p>		
<b>b</b>	Information adequacy for management strategy		
<b>Guide post</b>	Information is adequate to support <b>measures</b> to manage the impacts on ETP species.	Information is adequate to measure trends and support a <b>strategy</b> to manage impacts on ETP species.	Information is adequate to support a <b>comprehensive strategy</b> to manage impacts, minimize mortality and injury of ETP species, and evaluate with a <b>high degree of certainty</b> whether a strategy is achieving its objectives.
<b>Met?</b>	Y	Y	N
<b>Justification</b>	<p>As explained in Sla, there is no systematic monitoring or reporting from this fishery related to ETP species interactions. The ESA and MMPA require reporting of listed species interactions when they do occur, which is thought to be infrequent. However, without a regular system for monitoring (e.g. through observer programs), it cannot be said that the information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives. However, information is adequate to measure trends and support a strategy to manage impacts on ETP species that is appropriate for this fishery. Hence the SG80 is met but not the SG100.</p>		
<b>References</b>	NMFS 2011, NOAA Fisheries 2017, PFMC 2016b		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>			

Evaluation Table for PI 2.4.1 – Habitats outcome

<b>PI 2.4.1</b>	<b>The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates.</b>		
<b>Scoring Issue</b>	SG 60	SG 80	SG 100
<b>a</b>	Commonly encountered habitat status		
<b>Guide post</b>	The UoA is <b>unlikely</b> to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is <b>highly unlikely</b> to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is <b>evidence</b> that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	The AAFA and WFOA troll fishery is highly selective and operates at the surface in deep, oceanic water around and within the STCZ; there is therefore no interaction with the seabed, while the gear comprises short lines with jigs attached, which at most can impact the surface pelagic habitat of the South Pacific in an imperceptible and highly transient manner. Therefore the only commonly encountered habitat is pelagic, and there is evidence that the UoA is highly unlikely to reduce the structure and function of this habitat to the point of serious or irreversible harm. SG100 is met.		
<b>b</b>	VME habitat status		
<b>Guide post</b>	The UoA is <b>unlikely</b> to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is <b>highly unlikely</b> to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is <b>evidence</b> that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
<b>Met?</b>	Not relevant	Not relevant	Not relevant
<b>Justification</b>	Not relevant as no VME habitats are encountered by this fishery.		
<b>c</b>	<b>Minor habitat status</b>		
<b>Guide post</b>			There is <b>evidence</b> that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
<b>Met?</b>			Y
<b>Justification</b>	There are no minor habitats encountered by this fishery; therefore SG100 is met.		
<b>References</b>	N/A		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>			

Evaluation Table for PI 2.4.2 – Habitats management strategy

<b>PI 2.4.2</b>	<b>There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.</b>		
<b>Scoring Issue</b>	SG 60	SG 80	SG 100
<b>a</b>	Management strategy in place		
<b>Guide post</b>	There are <b>measures</b> in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a <b>partial strategy</b> in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a <b>strategy</b> in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	The AAFA and WFOA troll fishery is highly selective and operates at the surface in deep, oceanic water around and within the STCZ; there is therefore no interaction with the seabed, while the gear comprises short lines with jigs attached, which at most can impact the surface pelagic habitat of the South Pacific in an imperceptible and highly transient manner. Therefore no strategy for managing the impact of the UoA on habitats is necessary and the SG100 is met.		
<b>b</b>	Management strategy evaluation		
<b>Guide post</b>	The measures are <b>considered likely</b> to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some <b>objective basis for confidence</b> that the measures/partial strategy will work, based on <b>information directly about the UoA and/or habitats</b> involved.	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/strategy will work, based on <b>information directly about the UoA and/or habitats</b> involved.
<b>Met?</b>	Y	Y	Y
<b>Justification</b>	The AAFA and WFOA troll fishery is highly selective and operates at the surface in deep, oceanic water around and within the STCZ; there is therefore no interaction with the seabed, while the gear comprises short lines with jigs attached, which at most can impact the surface pelagic habitat of the South Pacific in an imperceptible and highly transient manner. Therefore no strategy for managing the impact of the UoA on habitats is necessary and the SG100 is met.		
<b>c</b>	Management strategy implementation		
<b>Guide post</b>		There is <b>some quantitative evidence</b> that the measures/partial strategy is being implemented successfully.	There is <b>clear quantitative evidence</b> that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
<b>Met?</b>		Y	Y
<b>Justification</b>	The AAFA and WFOA troll fishery is highly selective and operates at the surface in deep, oceanic water around and within the STCZ; there is therefore no interaction with the seabed, while the gear comprises short lines with jigs attached, which at most can impact the surface pelagic habitat of the South Pacific in an imperceptible and highly transient manner. Therefore no strategy for managing the impact of the UoA on habitats is necessary and the SG100 is met.		
<b>d</b>	<b>Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs</b>		
<b>Guide post</b>	There is <b>qualitative evidence</b> that the UoA	There is <b>some quantitative evidence</b>	There is <b>clear quantitative evidence</b>

<b>PI 2.4.2</b>		<b>There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats.</b>		
		complies with its management requirements to protect VMEs.	that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	<b>Met?</b>	Not relevant	Not relevant	Not relevant
	<b>Justification</b>	Not relevant as this fishery does not encounter VME habitats.		
<b>References</b>		N/A		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				

Evaluation Table for PI 2.4.3 – Habitats information

<b>PI 2.4.3</b>		<b>Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	Information quality			
	<b>Guide post</b>	<p>The types and distribution of the main habitats are <b>broadly understood</b>.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Qualitative information is adequate to estimate the types and distribution of the main habitats.</p>	<p>The nature, distribution and <b>vulnerability</b> of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.</p> <p>OR</p> <p>If CSA is used to score PI 2.4.1 for the UoA:</p> <p>Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.</p>	<p>The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.</p>
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	<p>The AAFA and WFOA troll fishery is highly selective and operates at the surface in deep, oceanic water around and within the STCZ; there is therefore no interaction with the seabed, while the gear comprises short lines with jigs attached, which at most can impact the surface pelagic habitat of the South Pacific in an imperceptible and highly transient manner. The distribution of the pelagic habitat in which this fishery operates is fully known and thus the SG100 is met.</p>		
<b>b</b>	Information adequacy for assessment of impacts			
	<b>Guide post</b>	<p>Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.</p> <p>OR</p> <p><b>If CSA is used to score PI 2.4.1 for the UoA:</b></p> <p>Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.</p>	<p>Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.</p> <p>OR</p> <p><b>If CSA is used to score PI 2.4.1 for the UoA:</b></p> <p>Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.</p>	<p>The physical impacts of the gear on all habitats have been quantified fully.</p>

<b>PI 2.4.3</b>		<b>Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat.</b>		
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	The AAFA and WFOA troll fishery is highly selective and operates at the surface in deep, oceanic water around and within the STCZ; there is therefore no interaction with the seabed, while the gear comprises short lines with jigs attached, which at most can impact the surface pelagic habitat of the South Pacific in an imperceptible and highly transient manner. Thus there is not thought to be any "physical impact" of the gear on the pelagic habitat in which it is fished, and the SG100 is met.		
<b>c</b>	Monitoring			
	<b>Guide post</b>		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in habitat distributions over time are measured.
	<b>Met?</b>		Y	Y
	<b>Justification</b>	The AAFA and WFOA troll fishery is highly selective and operates at the surface in deep, oceanic water around and within the STCZ; there is therefore no interaction with the seabed, while the gear comprises short lines with jigs attached, which at most can impact the surface pelagic habitat of the South Pacific in an imperceptible and highly transient manner. There has not been any change to the distribution of the pelagic habitat in which this fishery operates, thus the SG100 is met.		
	<b>References</b>	N/A		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				

Evaluation Table for PI 2.5.1 – Ecosystem outcome

<b>PI 2.5.1</b>		<b>The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	Ecosystem status			
	<b>Guide post</b>	The UoA is <b>unlikely</b> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is <b>highly unlikely</b> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is <b>evidence</b> that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	<p>Although there have been studies (e.g. Baum and Worm 2009) indicating that large scale removals of large pelagic species can have ecosystem effects in the ocean environment, the albacore removals from the AAFA and WFOA fishery are negligible as compared with all fishery removals of large pelagics in the South Pacific Ocean.</p> <p>Oceanic pelagic species are commonly opportunistic carnivores with a wide dietary spectrum. Through co-occurrence and evidence of their response to baited longlines, species including skipjack tuna (<i>Katsuwonus pelamis</i>), yellowfin tuna (<i>Thunnus albacares</i>), bigeye tuna (<i>Thunnus obesus</i>), and pomfrets (e.g. <i>Eumegistus</i> spp., <i>Brama</i> spp., <i>Collybus</i> spp.) are likely to be competitors of albacore (Murray 1993). Argue et al. (1983) reported that juvenile albacore smaller than 12 cm were found in the stomachs of skipjack tuna and wahoo (<i>Acanthocybium solandri</i>). It seems likely that other tunas, tuna-like species, and billfish are also likely to prey on small or juvenile albacore, while apex predators such as mako (<i>Isurus oxyrinchus</i>) and blue sharks (<i>Prionace glauca</i>), billfish, and cetaceans (e.g. <i>Delphinus</i> spp.) may take larger individuals. Cookie cutter sharks (<i>Isistius brasiliensis</i>) are also known to prey on albacore, taking non-fatal bites from the fish (Hampton et al. 1991). Albacore was not, though, found to be a key prey item for any species in the central Pacific (Kitchell et al. 1999), and the fishery appears very unlikely to significantly impact other higher trophic-level predators.</p> <p>Evidence, in the form of AAFA/WFOA albacore removals as compared to total South Pacific large pelagic species removals, therefore exists to determine that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. SG100 is met.</p>		
<b>References</b>	Argue et al. 1983, Baum and Worm 2009, Glaser 2009, Hampton et al. 1991, Kitchell et al. 1999, Murray 1993			
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>				

Evaluation Table for PI 2.5.2 – Ecosystem management strategy

<b>PI 2.5.2</b>	<b>There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function.</b>			
<b>Scoring Issue</b>	SG 60	SG 80	SG 100	
<b>a</b>	<b>Management strategy in place</b>			
	<b>Guide post</b>	There are <b>measures</b> in place, if necessary which take into account the <b>potential impacts</b> of the fishery on key elements of the ecosystem.	There is a <b>partial strategy</b> in place, if necessary, which takes into account <b>available information and is expected to restrain impacts</b> of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a <b>strategy</b> that consists of a <b>plan</b> , in place which contains measures to <b>address all main impacts of the UoA</b> on the ecosystem, and at least some of these measures are in place.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	No strategy is necessary to address the main impacts of the UoA on the ecosystem because there is no perceptible impact (see PI2.5.1). Thus SG100 is met.		
<b>b</b>	<b>Management strategy evaluation</b>			
	<b>Guide post</b>	The <b>measures</b> are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).	There is <b>some objective basis for confidence</b> that the measures/partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/strategy will work, based on information directly about the UoA and/or ecosystem involved
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	No strategy is necessary to address the main impacts of the UoA on the ecosystem, because there is no perceptible impact (see PI2.5.1). Thus SG100 is met.		
<b>c</b>	<b>Management strategy implementation</b>			
	<b>Guide post</b>		There is <b>some evidence</b> that the measures/partial strategy is being <b>implemented successfully</b> .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	<b>Met?</b>		Y	Y
	<b>Justification</b>	No strategy is necessary to address the main impacts of the UoA on the ecosystem, because there is no perceptible impact (see PI2.5.1). Thus SG100 is met.		
<b>References</b>	N/A			
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>100</b>	
<b>CONDITION NUMBER (if relevant):</b>				

Evaluation Table for PI 2.5.3 – Ecosystem information

<b>PI 2.5.3</b>		<b>There is adequate knowledge of the impacts of the UoA on the ecosystem.</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	Information quality			
	<b>Guide post</b>	Information is adequate to <b>identify</b> the key elements of the ecosystem.	Information is adequate to <b>broadly understand</b> the key elements of the ecosystem.	
	<b>Met?</b>	Y	Y	
	<b>Justification</b>	The ecosystems in which the AAFA/WFOA albacore fishery operate (South Pacific Ocean) is well described and understood. The HMS SAFE document (PFMC 2016c) examines broader ecosystem impacts of all fisheries they include, as well a report on monitored key ecosystem dynamics. Hence the SG80 is met.		
<b>b</b>	Investigation of UoA impacts			
	<b>Guide post</b>	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but <b>have not been investigated</b> in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and <b>some have been investigated in detail.</b>	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and <b>have been investigated in detail.</b>
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	The HMS SAFE document (PFMC 2016c) examines broader ecosystem impacts of all fisheries it includes, as well a report on monitored key ecosystem dynamics. Oceanic pelagic species are commonly opportunistic carnivores with a wide dietary spectrum. Through co-occurrence and evidence of their response to baited longlines, species including skipjack tuna ( <i>Katsuwonus pelamis</i> ), yellowfin tuna ( <i>Thunnus albacares</i> ), bigeye tuna ( <i>Thunnus obesus</i> ), and pomfrets (e.g. <i>Eumegistus</i> spp., <i>Brama</i> spp., <i>Collybus</i> spp.) are likely to be competitors of albacore (Murray 1993). Argue et al. (1983) reported that juvenile albacore smaller than 12 cm were found in the stomachs of skipjack tuna and wahoo ( <i>Acanthocybium solandri</i> ). It seems likely that other tunas, tuna-like species, and billfish are also likely to prey on small or juvenile albacore, while apex predators such as mako ( <i>Isurus oxyrinchus</i> ) and blue sharks ( <i>Prionace glauca</i> ), billfish, and cetaceans (e.g. <i>Delphinus</i> spp.) may take larger individuals. Cookie cutter sharks ( <i>Isistius brasiliensis</i> ) are also known to prey on albacore, taking non-fatal bites from the fish (Hampton et al. 1991). Albacore was not, though, found to be a key prey item for any species in the central Pacific (Kitchell et al. 1999), and the fishery appears very unlikely to significantly impact other higher trophic-level predators. These are considered to be the main interactions between the UoA and ecosystem elements and these have been investigated in sufficient detail. Hence the SG100 is met.		
<b>c</b>	Understanding of component functions			
	<b>Guide post</b>		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are <b>known.</b>	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are <b>understood.</b>
	<b>Met?</b>		Y	Y

<b>PI 2.5.3</b>		<b>There is adequate knowledge of the impacts of the UoA on the ecosystem.</b>	
	<b>Justification</b>	<p>The HMS SAFE document (PFMC 2016c) examines broader ecosystem impacts of all fisheries it includes, as well a report on monitored key ecosystem dynamics.</p> <p>Oceanic pelagic species are commonly opportunistic carnivores with a wide dietary spectrum. Through co-occurrence and evidence of their response to baited longlines, species including skipjack tuna (<i>Katsuwonus pelamis</i>), yellowfin tuna (<i>Thunnus albacares</i>), bigeye tuna (<i>Thunnus obesus</i>), and pomfrets (e.g. <i>Eumegistus</i> spp., <i>Brama</i> spp., <i>Collybus</i> spp.) are likely to be competitors of albacore (Murray 1993). Argue et al. (1983) reported that juvenile albacore smaller than 12 cm were found in the stomachs of skipjack tuna and wahoo (<i>Acanthocybium solandri</i>). It seems likely that other tunas, tuna-like species, and billfish are also likely to prey on small or juvenile albacore, while apex predators such as mako (<i>Isurus oxyrinchus</i>) and blue sharks (<i>Prionace glauca</i>), billfish, and cetaceans (e.g. <i>Delphinus</i> spp.) may take larger individuals. Cookie cutter sharks (<i>Isistius brasiliensis</i>) are also known to prey on albacore, taking non-fatal bites from the fish (Hampton et al. 1991).</p> <p>Albacore was not, though, found to be a key prey item for any species in the central Pacific (Kitchell et al. 1999), and the fishery appears very unlikely to significantly impact other higher trophic-level predators. The impacts of the UoA on albacore and the P2 components have been identified and are understood. Hence the SG100 is met.</p>	
<b>d</b>	Information relevance		
	<b>Guide post</b>	Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components <b>and elements</b> to allow the main consequences for the ecosystem to be inferred.
	<b>Met?</b>	Y	Y
	<b>Justification</b>	<p>Both the HMS and CPS SAFE documents (PFMC 2016c; PFMC 2016d) examine broader ecosystem impacts of all fisheries they include, as well a report on monitored key ecosystem dynamics.</p> <p>Oceanic pelagic species are commonly opportunistic carnivores with a wide dietary spectrum. Through co-occurrence and evidence of their response to baited longlines, species including skipjack tuna (<i>Katsuwonus pelamis</i>), yellowfin tuna (<i>Thunnus albacares</i>), bigeye tuna (<i>Thunnus obesus</i>), and pomfrets (e.g. <i>Eumegistus</i> spp., <i>Brama</i> spp., <i>Collybus</i> spp.) are likely to be competitors of albacore (Murray 1993). Argue et al. (1983) reported that juvenile albacore smaller than 12 cm were found in the stomachs of skipjack tuna and wahoo (<i>Acanthocybium solandri</i>). It seems likely that other tunas, tuna-like species, and billfish are also likely to prey on small or juvenile albacore, while apex predators such as mako (<i>Isurus oxyrinchus</i>) and blue sharks (<i>Prionace glauca</i>), billfish, and cetaceans (e.g. <i>Delphinus</i> spp.) may take larger individuals. Cookie cutter sharks (<i>Isistius brasiliensis</i>) are also known to prey on albacore, taking non-fatal bites from the fish (Hampton et al. 1991).</p> <p>Albacore was not, though, found to be a key prey item for any species in the central Pacific (Kitchell et al. 1999), and the fishery appears very unlikely to significantly impact other higher trophic-level predators. Adequate information is available on the UoA's impacts on the components and elements so the main consequences can be inferred. Hence the SG100 is met.</p>	
<b>e</b>	Monitoring		
	<b>Guide post</b>	Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage

<b>PI 2.5.3</b>		<b>There is adequate knowledge of the impacts of the UoA on the ecosystem.</b>	
			ecosystem impacts.
	<b>Met?</b>	Y	Y
	<b>Justification</b>	The likelihood of ecosystem impacts from this fishery are extremely low (see earlier justifications). However, both the HMS and CPS SAFE documents (PFMC 2016c; PFMC 2016d) examine broader ecosystem impacts of all fisheries they include, as well a report on monitored key ecosystem dynamics. Therefore information does exist and is updated with regularity such that potential ecosystem impacts of this fishery could be identified if they emerged. Hence the SG100 is met.	
	<b>References</b>	Argue et al. 1983, Baum and Worm 2009, Glaser 2009, Hampton et al. 1991, Kitchell et al. 1999, Murray 1993, PFMC 2016c, PFMC 2016d	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>			

Evaluation Table for PI 3.1.1 – Legal and/or customary framework

<p><b>PI 3.1.1</b></p>	<p><b>The management system exists within an appropriate legal and/or customary framework which ensures that it:</b></p> <ul style="list-style-type: none"> <li>• <b>Is capable of delivering sustainability in the UoA(s); and</b></li> <li>• <b>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</b></li> <li>• <b>Incorporates an appropriate dispute resolution framework.</b></li> </ul>		
<p><b>Scoring Issue</b></p>	<p>SG 60</p>	<p>SG 80</p>	<p>SG 100</p>
<p><b>a</b></p>	<p>Compatibility of laws or standards with effective management</p>		
<p><b>Guide post</b></p>	<p>There is an effective national legal system <b>and a framework for cooperation</b> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2</p>	<p>There is an effective national legal system and <b>organised and effective cooperation</b> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.</p>	<p>There is an effective national legal system and <b>binding procedures governing cooperation with other parties</b> which delivers management outcomes consistent with MSC Principles 1 and 2.</p>
<p><b>Met?</b></p>	<p>Y</p>	<p>Y</p>	<p>Y</p>
<p><b>Justification</b></p>	<p>Article 64 of the United Nations Law of the Sea Convention mandates States to cooperate directly, or through appropriate international organizations, to ensure the conservation of tunas, both within and beyond the EEZ. The WCPFC and the IATTC are responsible for the management and conservation of fisheries for tunas taken by tuna-fishing vessels both outside and within areas of national jurisdiction, however the WCPFC assesses the South Pacific stock.</p> <p>The WCPFC Convention, Article 5, states that measures should be adopted that are designed to restore stocks at levels capable of producing maximum sustainable yield, assess the impacts of fishing, other human activities and environmental factors on target stocks, non-target species, and species belonging to the same ecosystem associated with the HMS stocks. It also states that biodiversity should be protected in the marine environment, and measures should be taken to eliminate over-fishing, reduce waste, discards, pollution from fishing vessels, and catch of non-target species.</p> <p>In Sec. 102 of the the Reauthorized MSA 2007, it states that “the United States shall cooperate directly or through appropriate international organizations with those nations involved in fisheries for highly migratory species with a view to ensuring conservation and shall promote the achievement of optimum yield of such species throughout their range, both within and beyond the EEZ.” The MSA also states that conservation and management refers to all the regulations that are required to rebuild, restore, or maintain any fishery resource and the marine environment, and assure that irreversible or long-term adverse effects on fishery resources and the marine environment are avoided. NOAA/NMFS is the US government agency responsible for all aspects of the conservation and management of US fisheries. NOAA/NMFS is responsible for carrying out the US policies to manage and conserve marine protected resources. Section 302 of the 1976 Magnuson-Stevens Fishery Conservation and Management Act created eight Regional Fishery Management Councils. The Councils develop fishery management plans and management measures for the US fisheries operating within their adjacent EEZs and for US-flagged fisheries operating on the high seas outside the EEZ. NOAA/NMFS approves and implements these plans and measures in accordance with MSC Principles 1 and 2.</p> <p>The fishery meets the SG 100 level for this scoring issue.</p>		
<p><b>b</b></p>	<p>Resolution of disputes</p>		

PI 3.1.1	<p><b>The management system exists within an appropriate legal and/or customary framework which ensures that it:</b></p> <ul style="list-style-type: none"> <li>• <b>Is capable of delivering sustainability in the UoA(s); and</b></li> <li>• <b>Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</b></li> <li>• <b>Incorporates an appropriate dispute resolution framework.</b></li> </ul>		
	<p><b>Guide post</b></p> <p>The management system incorporates or is subject by law to a <b>mechanism</b> for the resolution of legal disputes arising within the system.</p>	<p>The management system incorporates or is subject by law to a <b>transparent mechanism</b> for the resolution of legal disputes which is <b>considered to be effective</b> in dealing with most issues and that is appropriate to the context of the UoA.</p>	<p>The management system incorporates or is subject by law to a <b>transparent mechanism</b> for the resolution of legal disputes that is appropriate to the context of the fishery and has been <b>tested and proven to be effective</b>.</p>
	Met?	Y	N
	<p><b>Justification</b></p> <p>The WCPFC promotes the peaceful settlement of disputes through the Commission, but may seek additional dispute resolution mechanisms (legal arbitration) when necessary. Article XXI of the WCPFC Convention states that “the Commission shall promote transparency in its decision-making process and other activities.” WCPFC <i>Convention Annex II</i> establishes the authority to set up a Review Panel to review decisions made by the Commission to settle disputes among members of the Commission.</p> <p>At the domestic level, NOAA has an extensive Dispute Resolution Process, defined by the Administrative Dispute Resolution Act of 1996, Pub. L. No. 104-320. They have an Alternative Dispute Resolution (ADR) process that consists of several approaches used to resolve conflict other than litigation if possible. The ADR process uses mediation, consultation and facilitated problem solving to resolve disputes in a confidential manner (<a href="http://www.wfm.noaa.gov/adr/">www.wfm.noaa.gov/adr/</a>).</p> <p>The domestic and international level management have a transparent mechanism for dispute resolution and decision making processes. At the domestic level, this has proven to be tested and effective in other fisheries. At the international level, it is unclear whether this management mechanism has been tested and proven to be effective, therefore the SG 100 level is not met for this scoring issue.</p>		
c	Respect for rights		
	<p><b>Guide post</b></p> <p>The management system has a mechanism to <b>generally respect</b> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>	<p>The management system has a mechanism to <b>observe</b> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>	<p>The management system has a mechanism to <b>formally commit</b> to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</p>
	Met?	Y	N
	<p><b>Justification</b></p> <p>The MSA states that “Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks) take into account the importance of fishery resources to fishing communities by utilizing economic and social data to provide for the sustained participation of such communities and to the extent</p>		

PI 3.1.1	<p>The management system exists within an appropriate legal and/or customary framework which ensures that it:</p> <ul style="list-style-type: none"> <li>• Is capable of delivering sustainability in the UoA(s); and</li> <li>• Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li> <li>• Incorporates an appropriate dispute resolution framework.</li> </ul>	
	<p>practicable, minimize adverse economic impacts on such communities.”</p> <p>WCPFC <i>Convention Article V takes into account the interests of artisanal and subsistence fishers</i>, <i>Article X</i> specifies the needs of small developing States, territories, etc. whose economies, food supplies, and livelihoods are dependent of the exploitation of marine resources must be taken in to account, <i>inter alia</i>, in developing criteria for allocation of TACs or total level of fishing effort or other management actions; <i>Article XXX</i> recognises the special requirements of developing states.</p> <p>There is little evidence that suggests that the management system has a mechanism to <b>formally commit</b> to the legal rights created explicitly or established by custom on people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2. The IATTC and WCPFC have not yet adopted a formal procedure to allocate fishing opportunities to all its Members (IOTC 2011). This scoring issue is met at the 80 level, but not met at the 100 level.</p>	
References	MSA 2007, Blyth-Skyrme <i>et al.</i> 2012; UNCLOS 1982; WCPFC 2004; ; <a href="http://www.nmfs.noaa.gov/pr/pdfs/laws/apa.pdf">http://www.nmfs.noaa.gov/pr/pdfs/laws/apa.pdf</a> ; IOTC 2011.	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>N/A</b>

Evaluation Table for PI 3.1.2 – Consultation, roles and responsibilities

<b>PI 3.1.2</b>		<p><b>The management system has effective consultation processes that are open to interested and affected parties.</b></p> <p><b>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</b></p>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	Roles and responsibilities			
	<b>Guide post</b>	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <b>generally understood</b> .	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <b>explicitly defined and well understood for key areas</b> of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <b>explicitly defined and well understood for all areas</b> of responsibility and interaction.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	<p>The WCPFC formulate overarching resolutions based on recommendations from scientific committees or staff. Member states negotiate agreements on management mechanisms and, once agreed upon, the actual implementation is left to the individual member and cooperating countries. <i>Articles IX-XVI and XXIII-XXIV</i> of the WCPFC <i>Convention</i> clearly identify individuals involved in the management process and their respective functions. The subsidiary committees formed in the WCPFC <i>Convention</i> also have roles and responsibilities explicitly defined. After further review, there have been some minor issues with the different flag states and how they enforce the different control measures for their vessels. This seems to be related to lack of understanding of the requirements, and therefore the areas of responsibility and interaction are well understood for some, but not all parts of the management system.</p> <p>The MSA and amendments to the MSA, in addition to other relevant Acts, mandate that the functions, roles and responsibilities are well understood and explicitly defined for key areas of responsibility and interaction. As a member of the Commission, the U.S. is responsible for ensuring that management measures applied within U.S. waters are compatible with those of the WCPFC, and that fishing by US-flagged vessels is carried out in accordance with any measures put in place by WCPFC.</p> <p>The roles of the management process are defined at the domestic and international level of management, however it is difficult to state that the functions, roles and responsibilities are explicitly defined and well understood <b>for all areas</b> of responsibility and interaction. Therefore this fishery meets the SG80 level, but not the SG 100 level.</p>		
<b>b</b>	Consultation processes			
	<b>Guide post</b>	The management system includes consultation processes that <b>obtain relevant information</b> from the main affected parties, including local knowledge, to inform the	The management system includes consultation processes that <b>regularly seek and accept</b> relevant information, including local knowledge. The management system demonstrates	The management system includes consultation processes that <b>regularly seek and accept</b> relevant information, including local knowledge. The management system demonstrates

<b>PI 3.1.2</b>		<p><b>The management system has effective consultation processes that are open to interested and affected parties.</b></p> <p><b>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</b></p>		
		management system.	consideration of the information obtained.	consideration of the information and <b>explains how it is used or not used.</b>
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	<p>The WCPFC Convention <i>Article XXII</i> states that the Commission will consult, cooperate and collaborate with other relevant organizations, particularly those with related objectives and which can contribute to the attainment of the objectives of the Convention. The WCPFC has annual meetings that includes consultation processes with its subsidiary committees and CCMs that regularly seek and accept information.</p> <p>NOAA has several councils within their organization that regularly seek and accept relevant information, including local knowledge. NOAA Fisheries partners with federal agencies and federally-recognized tribes to advise and collaborate on activities that might impact endangered and threatened species, marine mammals, and important marine habitats. NMFS has also developed a Public Consultation Tracking System (PCTS), which is an information management system covering National Marine Fisheries Service (NOAA Fisheries) consultations under the Endangered Species Act (ESA) and under the Magnuson-Stevens Fishery Conservation and Management Act sections 305(b)(2) &amp; 305(b)(4) Essential Fish Habitat (EFH). Information is publicly available that explains how information and management decisions are made, consultations with the various agencies and inter-agency sectors, council representation, etc.</p> <p>This fishery meets the SG100 level for this scoring issue.</p>		
<b>c</b>	<b>Participation</b>			
	<b>Guide post</b>		The consultation process <b>provides opportunity</b> for all interested and affected parties to be involved.	The consultation process provides <b>opportunity and encouragement</b> for all interested and affected parties to be involved, and <b>facilitates</b> their effective engagement.
	<b>Met?</b>		Y	N
	<b>Justification</b>	<p><i>Article XXI</i> of the WCPFC Convention states that The Commission shall promote transparency in the implementation of this Convention in its decision making process and other activities through facilitating consultations with, and the effective participation of NGOs and IGOs, and shall be afforded the opportunity to participate in the meeting of the Commission and its subsidiary bodies as observers or otherwise appropriate. It also states that such NGOs and IGOs shall have access to pertinent information subject to Commission rules and procedures; and, are permitted to give oral presentations and distribute papers through the Secretariat. Agendas for all meetings related to consultative processes are published in advance on the WCPFC website and other media (Blythe-Skyrme et al. 2012)</p> <p>At the domestic level, the MSA mandates that a transparent process for vetting domestic regulations and related actions be followed that includes all interested stakeholders.</p>		

PI 3.1.2	<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties</p>	
	<p>The WCPFC and NMFS websites have past and future meetings listed, downloadable agendas, meeting minutes, etc., however it remains unclear how these management agencies encourage participation for all interested parties. Therefore this fishery does not meet the SG100 level for this scoring issue.</p>	
<b>References</b>	<p>Blythe-Skyrme <i>et al.</i> 2012; WCPFC 2004; MSA 2007; <a href="http://www.fisheries.noaa.gov">www.fisheries.noaa.gov</a></p>	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>85</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>N/A</b>

Evaluation Table for PI 3.1.3 – Long term objectives

<b>PI 3.1.3</b>		<b>The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.</b>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	<b>Objectives</b>			
	<b>Guide post</b>	Long-term objectives to guide decision-making, consistent with the MSC fisheries standard and the precautionary approach, are <b>implicit</b> within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach are <b>explicit</b> within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are <b>explicit</b> within <b>and required by</b> management policy.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	<p>The WCPFC Convention Article II states that “the objective of this Convention is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 Convention and the Agreement.” The WCPFC Convention provides the regulatory framework that governs the Commission with a legal framework in accordance with UNCLOS, Agenda 21 and Rio Declaration, the FAO Compliance Agreement, the Code of Conduct and the UNFSA. Article V of the Convention specifies principles and measures for conservation and management of HMS stocks including: the concepts of the precautionary approach, use of best scientific evidence available in developing management measures, following the ecosystems approach, protection of biodiversity in the marine environment, adoption of measures to minimize waste, discards, pollution, catch of non-target species, etc. Also, IUU fishing is actively monitored and combated.</p> <p>The Convention also states that effective management and conservation require the application of the precautionary approach and the best scientific information available. The <i>WCPFC Convention, Article 20</i> outlines the established decision making policies for this area. The general rule for decision making in the Commission shall be by consensus. If all efforts to reach a decision by consensus have been exhausted, the decisions by voting on questions of procedure shall be taken by a majority of those present and voting.</p> <p>The OFP also has clear objectives outlined which includes: high-quality scientific information and advice for regional and national fisheries management on the status of, and fishery impacts on, stocks targeted or impacted by regional oceanic fisheries; accurate and comprehensive scientific data and improved understanding of pelagic ecosystems in the western and central Pacific Ocean.</p> <p>On a domestic level, the MSA, National Standards and other legislation include explicit, well-defined short and long term objectives for sustainable fishing and conservation. NMFS incorporated precautionary concepts to ensure compliance with the Sustainable Fisheries Act 1996 that includes National Standards for conservation and management of fisheries in the US (Blythe-Skyrme <i>et al.</i> 2012).</p> <p>The SG 100 level is met for this scoring issue.</p>		
<b>References</b>		Blythe-Skyrme <i>et al.</i> 2012; WCPFC 2004; UNCLOS 1982; MSA 2007; <a href="http://www.spc.int/oceanfish/en/about-ofp">http://www.spc.int/oceanfish/en/about-ofp</a> .		

PI 3.1.3	The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard, and incorporates the precautionary approach.	
OVERALL PERFORMANCE INDICATOR SCORE:		100
CONDITION NUMBER (if relevant):		N/A

Evaluation Table for PI 3.2.1 Fishery-specific objectives

PI 3.2.1	The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.		
Scoring Issue	SG 60	SG 80	SG 100
a	Objectives		
Guide post	Objectives, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <b>implicit</b> within the fishery-specific management system.	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <b>explicit</b> within the fishery-specific management system.	Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.
Met?	Y	Y	Y
Justification	<p>WCPFC CMM -2015-02 states that CCMs shall cooperate to ensure the long-term sustainability and economic viability of the fishery for South Pacific albacore, including cooperation and collaboration on research to reduce uncertainty with regard to stock status. The <i>WCPFC Convention, Article 5</i>, states that the objective is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks, (including south Pacific albacore) in the western and central Pacific Ocean in accordance with the 1995 UN Fish Stocks Agreement and the 1982 United Nations Convention on the Law of the Sea. The WCPFC exercise management control into the high seas zones outside national EEZs.</p> <p>The OFP also has clear objectives outlined with regard to south Pacific albacore which include: high-quality scientific information and advice for regional and national fisheries management on the the status of, and fishery impacts on, stocks targeted or impacted by regional oceanic fisheries; accurate and comprehensive scientific data and improved understanding of pelagic ecosystems in the western and central Pacific Ocean.</p> <p>Section 102 of the MSA (2007) states that "the US shall cooperate directly or through appropriate international organizations with those nations involved in fisheries for highly migratory species (which include south Pacific albacore) with a view to ensuring conservation and shall promote the achievement of optimum yield of such species throughout their range, both within and beyond the exclusive economic zone." The MSA also states that conservation and management refers to all the regulations that are required to rebuild, restore, or maintain any fishery resource and the marine environment, and assure that irreversible or long-term adverse effects on fishery resources and the marine environment are avoided.</p> <p>The well defined objectives at the national and international levels, which delivers management outcomes consistent with MSC Principles 1 and 2, warrant a score at the SG 100 level.</p>		

PI 3.2.1	<b>The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2.</b>		
References	Blythe-Skyrme <i>et al.</i> 2012; WCPFC 2004; UNCLOS 1982; MSA 2007; WCPFC 2015; <a href="http://www.spc.int/oceanfish/en/about-ofp">http://www.spc.int/oceanfish/en/about-ofp</a>		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>100</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>N/A</b>

**Evaluation Table for PI 3.2.2 – Decision-making processes**

PI 3.2.2	<b>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.</b>		
Scoring Issue	SG 60	SG 80	SG 100
<b>a</b>	Decision-making processes		
<b>Guide post</b>	There are some decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are <b>established</b> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
<b>Met?</b>	Y	Y	
<b>Justification</b>	<p>The WCPFC <i>Convention Article XX</i> mandates that decision-making to be by consensus, which are well-defined and explained. WCPFC CMM 2015-02 states that all CCMs shall cooperate and collaborate on research, and report annually to the Commission. The subsidiary bodies of the Commission provide advice, recommendations and reports, and use the best available science for decision making for species caught in the high seas, including south Pacific albacore. The WCPFC membership also includes all 26 Secretariat of the Pacific Community (SPC) members. The Oceanic Fisheries Programme (OFP) is part of the Fisheries, Aquaculture and Marine Ecosystems Division of the SPC and is the regional division for tuna research, monitoring, stock assessment and biological and ecological management.</p> <p>At the domestic level, the MSA, ammendments and other Acts have established clear decision-making processes for highly migratory species, or fish caught in the high seas (including south Pacific albacore) that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>This fishery meets the SG 80 level for this scoring issue.</p>		
<b>b</b>	Responsiveness of decision-making processes		
<b>Guide post</b>	Decision-making processes respond to <b>serious issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to <b>serious and other important issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to <b>all issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
<b>Met?</b>	Y	N	N

<p>PI 3.2.2</p>	<p><b>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.</b></p>		
<p><b>Justification</b></p>	<p>At the domestic level, the MSA mandates that U.S. marine fisheries are monitored, regionally managed and legally enforced by several requirements, including ten national standards. There are clear policies in place that respond to serious issues identified in research, monitoring and consultation. US vessels operating in the US albacore fishery also take necessary measures in order to comply with the WCPFC regulations.</p> <p>The WCPFC Convention has outlined transparent decision-making processes, that with the addition of the advice and research received from the committees, (specifically the Scientific Committee and the Technical Committee), identify and/or respond to serious issues. Stock assessments conducted by the SPC help identify serious issues, including overfishing and decline in stock abundance for south Pacific albacore.</p> <p>The SPC stated at the Thirteenth Regular Session of the WCPFC, December 2016 meeting that although South Pacific albacore stocks were not overfished or currently experiencing overfishing, there was a decline in CPUE and consideration should be given for the implementation of alternative management measures. This has been recognized mostly due to the longline fleet for South Pacific albacore, whereas the effort from the pole and line and troll fleets has been stable or declining, and comprises a very small portion of the overall effort on this stock. The declining catch rates fall under 'other important issues', not yet serious because the stock is above MSY reference points.</p> <p>Although the decision-making processes are in place that respond to serious issues at both the national and international level, it is not clear that these processes respond to ALL issues for South Pacific albacore, nor is it evident that ALL these issues receive a response in a timely and adaptive manner. Actions have been proposed, but not yet adopted. Due to the overall lack of response from the WCPFC on the declining CPUE for SP albacore, decision-making processes fail to respond to <b>serious and other important issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner.</p> <p>The fishery meets the SG 60 level, but the SG80 level and the SG100 were not met.</p>		
<p><b>c</b></p>	<p>Use of precautionary approach</p>		
<p><b>Guide post</b></p>		<p>Decision-making processes use the precautionary approach and are based on best available information.</p>	
<p><b>Met?</b></p>		<p>Y</p>	
<p><b>Justification</b></p>	<p>The <i>WCPFC Convention</i> states that the objective is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks, including South Pacific albacore, in the western and central Pacific Ocean in accordance with the 1995 UN Fish Stocks Agreement and the 1982 United Nations Convention on the Law of the Sea. The <i>Convention Articles V and VI</i> also state that effective management and conservation require the application of the precautionary approach and the best scientific information available.</p>		

<b>PI 3.2.2</b>	<b>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.</b>		
	<p>On a domestic level, the MSA, National Standards and other legislation include explicit, well-defined short and long term objectives for sustainable fishing and conservation. NMFS incorporated precautionary concepts to ensure compliance with the Sustainable Fisheries Act 1996 that includes National Standards for conservation and management of fisheries in the US (Blythe-Skyrme <i>et al.</i> 2012).</p> <p>The fishery meets the SG 80 level for this scoring issue.</p>		
<b>d</b>	<b>Accountability and transparency of management system and decision-making process</b>		
<b>Guide post</b>	Some information on the fishery's performance and management action is generally available on request to stakeholders.	<b>Information on the fishery's performance and management action is available on request,</b> and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders <b>provides comprehensive information on the fishery's performance and management actions</b> and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
<b>Met?</b>	Y	Y	N
<b>Justification</b>	<p>The WCPFC <i>Convention, Article XXI</i> states that the Commission shall promote transparency in its decision-making process and other activities. Representatives from IGOs and NGOs concerned with matters relevant to the Convention shall be offered the opportunity to participate in the meetings of the Commission and its subsidiary bodies as observers or otherwise appropriate. Conservation measures for South Pacific albacore, including future meeting agendas, the "Bridging Measure" and a "Roadmap" was released in 2017 as part of the ongoing consultative process for the conservation and management of the stock.</p> <p>Formal reporting to interested stakeholders is available at the international and the domestic level. The WCPFC and NMFS maintain publicly accessible websites where reports, scientific papers and meeting minutes are posted and freely available for download. The WCPFC also has a published IUU list and a record of eligible fishing vessels. Interested stakeholders are able to access information in a number of ways on the management actions and the overall performance of the fishery.</p> <p>Even though meeting minutes, reports and agendas are available, there is no formal explanation that ensures that all parts of the decision making process have been disclosed, nor is there evidence that the management decisions represent all the information presented.</p> <p>The fishery meets the SG 80 level for this scoring issue, but not the SG 100 level.</p>		
<b>e</b>	<b>Approach to disputes</b>		
<b>Guide post</b>	Although the management authority or fishery may be subject to continuing court	The management system or fishery is attempting to comply in a timely fashion with judicial decisions	The management system or fishery acts proactively to avoid legal disputes or rapidly implements

<b>PI 3.2.2</b>		<b>The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery.</b>		
		challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	arising from any legal challenges.	judicial decisions arising from legal challenges.
	<b>Met?</b>	Y	Y	Y
	<b>Justification</b>	<p>At the domestic level, NOAA has an extensive Dispute Resolution Process, defined by the Administrative Dispute Resolution Act of 1996, Pub. L. No. 104-320. They have an Alternative Dispute Resolution (ADR) process that consists of several approaches used to resolve conflict other than litigation if possible. The ADR process uses mediation, consultation and facilitated problem solving to resolve disputes in a confidential manner (<a href="http://www.wfm.noaa.gov/adr/">www.wfm.noaa.gov/adr/</a>).</p> <p>The WCPFC operates under a charter specifying voting rules and procedures. However, decisions are usually made by consensus of the member states. There also are dispute resolution mechanisms. Additionally dispute resolution through litigation and the courts is available. Any such disputes are to be well documented and readily available to appropriate parties. The management system at the international level incorporates transparent mechanisms in decision making processes and other activities. WCPFC <i>Convention Annex II</i> establishes the authority to set up a Review Panel to review decisions made by the Commission to settle disputes among members of the Commission (Blythe-Skyrme <i>et al.</i> 2012).</p> <p>It should be noted that, to the assessment team's knowledge, no current legal disputes are occurring in the South Pacific albacore fishery troll and/or pole and line fleet, nor is there evidence of non-compliance that threatens the conservation and sustainability objectives.</p> <p>Based upon the above information, the SG 100 is met.</p>		
	<b>References</b>	Blythe-Skyrme <i>et al.</i> 2012; WCPFC 2004; UNCLOS 1982; MSA 2007; WCPFC 2015; <a href="http://www.wfm.noaa.gov/adr/">www.wfm.noaa.gov/adr/</a> ; WCPFC 2016b.; Gascoigne <i>et al.</i> 2017.; Brouwer <i>et al.</i> 2015; Acoura Marine 1 <sup>st</sup> Surveillance Report New Zealand Tuna Troll Fishery, February 2018.		
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>				<b>75</b>
<b>CONDITION NUMBER (if relevant):</b>				<b>N/A</b>

Evaluation Table for PI 3.2.3 – Compliance and enforcement

<b>PI 3.2.3</b>	<b>Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</b>		
<b>Scoring Issue</b>	SG 60	SG 80	SG 100
<b>a</b>	MCS implementation		
<b>Guide post</b>	Monitoring, control and surveillance <b>mechanisms</b> exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance <b>system</b> has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A <b>comprehensive</b> monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
<b>Met?</b>	Y	Y	N
<b>Justification</b>	<p>At the domestic level, all U.S. vessels fishing for HMS, which include South Pacific albacore, are required to have a HMS permit and are required to fill out logbooks and return them to the Southwest Fisheries Science Center within 30 days if landed in the United States. The High Seas Fishing Compliance Act, adopted in March 1996, requires that all U.S. commercial fishing vessels that fish on the high seas (outside the U.S EEZ, or 200nm) have a High Seas Fishing Compliance Act Permit (HSFCA) (PFMC 2016a) HMS vessels that have this permit for fishing beyond 200 nm of the U.S. are required to have VMS tracking. Observers are not required for South Pacific albacore.</p> <p>The WCPFC requires that any U.S. fishing vessel used for commercial fishing for HMS on the high seas have a WCPFC Endorsement. In order to obtain this endorsement, a HSFCA permit must have been issued or applied for. The WCPFC also requires owners/operators of any U.S. vessel fishing for HMS in the Convention Area be required to submit NOAA Fisheries information about the vessel, its owner and operators, and any fishing authorizations issued by such other nations. Video Monitoring systems (VMS) are required on all vessels fishing in the high seas within the Convention Area (WCPFC 2014c). The Commission evaluates member's compliance annually with respect to spatial and temporal closures, observer and VMS coverage and provision of scientific data, and catch and effort limits and reporting for target species.</p> <p>The area of management for South Pacific albacore is quite large and therefore difficult to ensure that proper measures of monitoring, control and surveillance mechanisms are enforced. VMS systems are required on vessels fishing on the high seas, and operating procedures are clearly outlined on the WCPFC website. Several updates have been made to the VMS and overall monitoring scheme in 2015-2017. However, there is very little evidence of how this VMS information is used and reviewed, which makes it difficult in assessing how comprehensive and effective this fishery's monitoring and surveillance system is. This fishery meets the SG 80 level, but it does not meet the SG 100 level.</p>		
<b>b</b>	Sanctions		
<b>Guide post</b>	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, <b>are consistently applied</b> and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and <b>demonstrably</b> provide effective deterrence.
<b>Met?</b>	Y	Y	N
<b>Justifi</b>	At the domestic level, sanctions for non-compliance exist, that are defined by law.		

<b>PI 3.2.3</b>		<b>Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</b>	
	<b>caution</b>	<p>Sanctions include written warnings, verbal warnings, summary settlements, and compliance assistance. The degree of the sanction depends on the degree of the crime, the number of offenses, etc.</p> <p>At the international level, sanctions are in place for non-compliance, including refusal, suspension or withdrawal of the authorization to fish and IUU vessel listing (WCPFC Convention).</p> <p>There are sanctions in place both at the national and international level that are thought to be consistently applied and provide effective deterrence, which meet the SG 80 level for this scoring issue. However, because of the large area of responsibility and the lack of information available on enforcement effort and detected violations, the fishery does not meet this SG 100 level of performance.</p>	
<b>c</b>	Compliance		
	<b>Guide post</b>	Fishers are <b>generally thought</b> to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	<p><b>Some evidence exists</b> to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.</p> <p>There is a <b>high degree of confidence</b> that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.</p>
	<b>Met?</b>	Y	N
	<b>Justification</b>	<p>Evidence exists to demonstrate that the South Pacific albacore fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery. There is ample evidence that US albacore troll and jig fishers comply with the management system, including fishers providing information of importance to the effective management of the fishery, e.g., daily logbook records, participation in conventional and electronic tagging programs, participation in collection of various data projects. Compliance reports are routinely prepared by the NOAA Fisheries Enforcement and NOAA General Council Offices and US Coast Guard.</p> <p>The WCPFC Compliance Monitoring Scheme is used to ensure that CCMS implement and comply with obligations arising under the Convention and CMMs, and the TCC, which is responsible for enforcement, annually reviews members' commitment to the decisions made by the Commission and monitors individual countries' implementation of conservation measures.</p> <p>There is evidence that South Pacific albacore fishers comply with the management system by providing information for the effective management of the fishery, therefore meeting the SG 60 and SG80 level for this scoring issue. It is difficult to say that "there is a high degree of confidence" at the international level that fisheries comply with the management system, therefore this fishery does not meet the SG 100 level.</p>	
<b>d</b>	Systematic non-compliance		
	<b>Guide post</b>		There is no evidence of systematic non-compliance.

<b>PI 3.2.3</b>		<b>Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</b>	
	<b>Met?</b>		Y
	<b>Justification</b>	To the assessment team's knowledge, there is no evidence of systematic non-compliance by the US South Pacific albacore troll and jig fishery. This fishery meets the SG 80 level for this scoring issue.	
<b>References</b>		Bythe-Skyrme et al. 2012; WCPFC 2014c; PFMC 2016a; WCPFC 2017f	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>			<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>			<b>N/A</b>

Evaluation Table for PI 3.2.4 – Monitoring and management performance evaluation

<b>PI 3.2.4</b>		<p><b>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</b></p> <p><b>There is effective and timely review of the fishery-specific management system.</b></p>		
<b>Scoring Issue</b>		SG 60	SG 80	SG 100
<b>a</b>	Evaluation coverage			
	<b>Guide post</b>	There are mechanisms in place to evaluate <b>some</b> parts of the fishery-specific management system.	There are mechanisms in place to evaluate <b>key</b> parts of the fishery-specific management system	There are mechanisms in place to evaluate <b>all</b> parts of the fishery-specific management system.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	<p>At the domestic level, the scientific system supporting is subject to internal and external reviews including, but not limited to: 1) NMFS oversight; and 2) ultimately, external oversight by the Secretary of Commerce (Blythe-Skyrme <i>et al.</i> 2012).</p> <p>The WCPFC Commission supports three subsidiary bodies where evaluation occurs: 1) Scientific Committee, 2) the Technical and Compliance Committee, and 3) Northern Committee, which each meet annually. Stakeholder input and external scientific experts are also a part of the evaluation process. The Commission, specifically the Technical Compliance Committee (TCC) has the role of reviewing and monitoring compliance of the the Commission’s conservation measures. Evaluations of a member’s compliance are done annually with respect to spatial and temporal closures, observer and VMS coverage and provision of scientific data, and catch and effort limits and reporting for target species. The SPC also conducts stock assessments that are peer reviewed and used to evaluate management policies.</p> <p>The South Pacific albacore fishery does not have mechanisms in place to evaluate all parts of the management system, namely harvest control rules. Several proposals have been recommended, they have yet to be fully adopted by the RFMOs. This fishery does not meet the SG 100 level of performance for this scoring issue.</p>		
<b>b</b>	Internal and/or external review			
	<b>Guide post</b>	The fishery-specific management system is subject to <b>occasional internal</b> review.	The fishery-specific management system is subject to <b>regular internal</b> and <b>occasional external</b> review.	The fishery-specific management system is subject to <b>regular internal</b> and <b>external</b> review.
	<b>Met?</b>	Y	Y	N
	<b>Justification</b>	<p>At the domestic level, the scientific supporting system is subject ot internal and external reviews including: 1) peer review by outside experts of specific management actions and particularly controversial issues; 2) NMFS oversight; and 3) external oversight by the Secretary of Commerce (Blythe-Skyrme <i>et al.</i> 2012).</p> <p>For the WCPFC, management is subject to numerous internal and external reviews including: 1) those by the Scientific Committee established by WPCFC Convention <i>Article XII</i>, the IATTC, and frequently other scientific experts to review stock assessments, status of target, non-target and associated stocks, and scientific information and advice that may be provided by the Commission; 2) the Technical</p>		

PI 3.2.4	<p><b>There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives.</b></p> <p><b>There is effective and timely review of the fishery-specific management system.</b></p>	
		<p>and Compliance Committee provides the Commission with information, technical advice, and recommendations related to the implementation and compliance with CMMs; 3) Convention Article XIII provides for the Commission to engage external scientific experts to carry out periodic peer reviews of scientific information and advice provided by the Commission; 4) Members transmit to the Commission an annual statement of compliance measures, including imposition of sanctions it has taken for any violations; 5) the business and meetings of the WCPFC are transparent and conducted annually and as a consequence, the status of conservation and management objectives are the subject of review of public opinion and subsequent political ramifications.</p> <p>The fishery-specific management system is subject to regular internal review, however only occasional external review occurs at the international level. This does not meet the SG 100 Level.</p>
<b>References</b>	Blythe-skyrme <i>et al.</i> 2012; WCPFC 2004; UNCLOS 1982;	
<b>OVERALL PERFORMANCE INDICATOR SCORE:</b>		<b>80</b>
<b>CONDITION NUMBER (if relevant):</b>		<b>N/A</b>

## Appendix 1.2 Conditions

Table 13. Condition 1

Performance Indicator	<b>1.2.1 Sia: The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.</b>
Score	70
Rationale	<p>MSC defines Harvest Strategy as the combination of monitoring, stock assessment, harvest control rules and management actions, which may include a Management Procedure (MP) or an MP (implicit) and be tested by MSE (MSC CR v2.0). The intention is that these elements (monitoring, stock assessment, harvest control rules and management actions) should work together effectively to ensure overall performance, measured in terms of achieving outcomes (i.e. meeting objectives).</p> <p>The harvest strategy currently in operation is not formalised but consists of the elements considered at PIs 1.2.2 (Harvest Control Rule), 1.2.3 (Monitoring), and 1.2.4 (Stock Assessment). Each PI is considered below in its own right. PI 1.2.1 is intended to consider how they work together to achieve objectives.</p> <p>First, as per PI 1.2.2 (see below) generally understood HCRs are available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached. Although not scored at the SG80 level at PI 1.2.2a, b and c, implicitly, LRPs exist for biomass (<math>WCPFC\ 20\%SB_{current,F=0}</math>) and fishing mortality rate (WCPFC). An implicit MSY- related biomass TRP similarly and arguably exists (WCPFC).</p> <p>While formal decision rules (harvest control rules) are being developed, and TRP and LRPs further defined, (WCPFC 2014a), management of South Pacific albacore has operated informally to meet the objectives. The information base is extensive from a wide range of biological studies and from a diverse range of fisheries. The information is sufficient to support the MULTIFAN-CL state-of-the-art stock assessment that provides probabilistic estimates of key parameters and their relationship to the implicit reference points. Advice from the stock assessment is provided by the WCPFC Scientific Committee (e.g., WCPFC 2015a) and additional work is carried out by the scientific provider, SPC, to the WCPFC. Annual decision-making, articulated through WCPFC CMMs, are supported by good scientific decision-support materials. The Commission also receives advice from technical and compliance committee (TCC).</p> <p>The most current management action is through WCPFC CMM 2015-02 (replacing CMM 2010-05), which specifies that: <i>“Commission Members, Cooperating Non-Members, and participating Territories (CCMs) shall not increase the number of their fishing vessels actively fishing for South Pacific albacore in the Convention Area south of 20°S above 2005 levels or recent historical (2000-2004) levels”</i>. WCPFC is monitoring the implementation of CMM 2015-02 by gathering data and reporting to the Commission (e.g., WCPFC14-2017-13).</p> <p>For several years, SC has noted that any increases in catch or effort in sub-tropical longline fisheries are likely to lead to declines in catch rates in some regions (10°S-30°S), especially for longline catches of adult albacore, with associated impacts on vessel profitability. WCPFC13 noted that the biomass available to the longline fishery has been depleted to the point where profitable fishing operations are threatened. Stakeholders at WCPFC13 noted that for a variety of reasons, the South Pacific albacore measure has not been able to control or limit the effects of increased fishing capacity on this stock.</p>

	<p>Despite the fact that the stock is not overfished and overfishing is not occurring, SC11 reiterated the advice of SC10 recommending that longline fishing mortality and longline catch be reduced to avoid further decline in the vulnerable biomass so that economically viable catch rates can be maintained.</p> <p>A number of the South Pacific Island states have grouped together under the auspices of FFA to develop the 'Tokelau Arrangement' to implement limits on catch of albacore.</p> <p>It is clear that progress is being made in developing a harvest strategy. Concerns are raised over the effectiveness of the current measure (CMM 2015-02) to reduce longline fishing mortality. There is also a lack of progress to define a TRP and the risk of breaching the LRP.</p> <p>The current stock status and the developments underway in designing the harvest strategy indicates that the harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1. The requirements for SG60 are met.</p> <p>The assessment team concluded that at this time the harvest strategy is not sufficiently responsive to the state of the stock, and the elements of the harvest strategy are not working together towards achieving stock management objectives reflected in PI 1.1.1. The requirements of SG80 are not met.</p> <p>The harvest strategy is not yet designed but aims to achieve stock management objectives, though WCPFC CMM 2014-06. The SG100 requirements are not currently met.</p> <p>The 60 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p> <p>This condition is a carry over from the previous assessment (condition 3) where this condition was first raised in 2016 to be consistent with the harmonized outcomes from the Hong Kong meeting.</p>
<b>Condition</b>	<p>Within five years (of 2016), there will be evidence that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1</p>
<b>Milestones</b>	<p>At subsequent surveillance audits, the client will provide evidence that it is actively working to ensure that the harvest strategy for South Pacific albacore tuna is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in the target and limit reference points. This evidence will include a summary of the actions taken by the client and other relevant parties to achieve this outcome in alignment with the WCPFC 2015 agreed work plan.</p> <p>By 2021, the client will provide evidence that the harvest strategy is responsive to the state of the stock and that the elements of the harvest strategy work together towards achieving the management objectives reflected in PI 1.1.1 SG 80.</p>
<b>Client action plan</b>	<p>Action plan:</p> <ul style="list-style-type: none"> <li>• In the first year (2016/2017), and thereafter as necessary, AAFA and WFOA will work actively through the FMCs and the US RFMO delegations to prioritize harvest strategy elements for South Pacific albacore fisheries as prescribed by CMM2014-06.</li> <li>• In the second year (2017/2018) and thereafter as necessary, AAFA and WFOA will work actively through the FMCs and the US RFMO delegations to prioritize harvest strategy elements for South Pacific albacore fisheries as</li> </ul>

	<p>prescribed by CMM2014-06.</p> <ul style="list-style-type: none"> <li>• In the third year (2018/2019) and thereafter as necessary, AAFA and WFOA will work actively through the FMCs and the US RFMO delegations to prioritize harvest strategy elements for South Pacific albacore fisheries as prescribed by CMM2014-06.</li> <li>• In the fourth year (2019/2020) and thereafter as necessary; AAFA and WFOA will work actively through the FMCs and the US RFMO delegations to prioritize harvest strategy elements for South Pacific albacore fisheries as prescribed by CMM2014-06.</li> <li>• Evidence of the work will be provided in the form of AAFA and WFOA letters to the relevant US regional managers and RFMO Delegations, and then evidence of the outcome of the RFMOs considering an appropriate harvest strategy will be provided in the form of RFMO meeting papers and minutes.</li> <li>• In the fifth year (2020/2021) the client will provide evidence that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG 80</li> </ul> <p>In accordance with these actions, AAFA and WFOA will report on efforts to explore appropriate opportunities with other tuna fisheries, associations, or organizations with complimentary objectives.</p>
<b>Consultation on condition</b>	[include details of any consultations required to meet requirements in FCR 7.11.3]

**Table 14. Condition 2**

<b>Performance Indicator</b>	<p><b>1.2.2S1a:</b> Well defined <b>HCRs</b> are in place that ensure that the exploitation rate is reduced as the <b>PRI</b> is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) <b>MSY</b>.</p> <p><b>S1b.</b> The <b>HCRs</b> are likely to be robust to the main uncertainties.</p> <p><b>S1c.</b> Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the <b>HCRs</b></p>
<b>Score</b>	60
<b>Rationale</b>	<p>MSC CR v2.0 lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level.</p> <p>First, CR v2.0 SA2.5.2a provides for HCR being recognized as available "...if stock biomass has not previously been reduced below <math>B_{MSY}</math> or has been maintained at that level for a recent period of time".</p> <p>As noted at PI 1.1.1(c), The MULTIFAN-CL assessment provides probabilistic estimates of parameters of interest, and has been extensively explored through sensitivity tests (Harley <i>et al.</i> 2015). The stock assessment estimates spawning stock biomass, <math>SB_{latest}/SB_{MSY}</math> to be 2.86 with no overlap in confidence intervals. The stock is estimated never to have reduced to <math>SB_{MSY}</math> and has hence been above <math>SB_{MSY}</math> in all years.</p> <p>The CR v2.0 SA2.5.2a condition is therefore met.</p> <p>Second, CR v2.0 SA2.5.3b provides for HCR being recognized as available if "...there is an agreement or framework in place that requires the management body (WCPFC) to adopt HCRs before the stock declines below <math>B_{MSY}</math>".</p> <p>WCPFC CMM 2014-06 sets 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, will be part of the implemented harvest strategies. The Commission agreed to adopt a work plan at the 2015 Commission meeting, with revision in 2016 (WCPFC 2017d), with application to skipjack, bigeye, yellowfin, Pacific Bluefin, and South and North</p>

	<p>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 (Pilling <i>et al.</i> 2015).</p> <p>During the fourth Harvest Strategy Workshop (MOW4) an update on revised TRPs was presented (Cartwright 2015). The revised TRPs were based on an updated 2015 stock assessment (Harley <i>et al.</i>, 2015), which featured new spatial structure and new input parameters, and the associated bio-economic analysis. Target levels examined included MSY and a range of financial targets (Cartwright 2015).</p> <p>Forum Fisheries Agency (FFA) presented a proposal to set the TRP for South Pacific albacore of 45% of the unfished biomass for south Pacific albacore (WCPFC, 2015d). The proposal also suggested the acceptable risk of breaching the adopted LRP of <math>20\%SB_{F=0}</math> should be 5% or less (WCPFC 2015d).</p> <p>At MOW4 Graham Pilling (SPC) provided a preliminary proof-of-concept that HCRs can be based upon catch or effort, based on 2015 south Pacific albacore assessment. The outcomes of this preliminary work provide a basis for future discussions of albacore HCRs for the catch-based control of fishing/harvest (Cartwright 2015).</p> <p>Projections at constant fishing mortality and average historical recruitment indicate the stock will remain relatively stable over the short- and long-term, suggesting also the stock will remain above <math>SB_{MSY}</math>.</p> <p>The CR v2.0 SA2.5.3b condition is therefore met.</p> <p>The 60 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p> <p>This condition is a carry over from the previous assessment where this condition was first raised in 2016 to be consistent with the harmonized outcomes from the Hong Kong meeting.</p> <p>Two MSC CR v2.0 conditions need to be addressed.</p> <p>First, CR v2.0 SA2.5.6 requires that as part of the evidence that tools are working, “...<i>teams should include current levels of exploitation in the UoA, as measured by fishing mortality rate where available</i>”. The best available information on the exploitation rate is in Harley <i>et al.</i> (2015); the MULTIFAN-CL base case assessment estimates <math>F_{current}/F_{MSY}</math> as 0.39, and F is estimated to never have reached <math>F_{MSY}</math>. CR v2.0. GSA2.5.2-7 as relates to SA2.5.6, notes that current F being “<i>equal to or less than <math>F_{MSY}</math> should be taken as evidence that the HCR is effective.</i>”</p> <p>Second, MSC CR v2.0 SA2.5.5b, related to when HCRs are recognized as being available at Sla at the SG60 level (see above), requires “...<i>a description of a formal or legal agreement to trigger the development of HCR</i>”.</p> <p>CMM 2014-06 sets 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, will be part of the implemented harvest strategies. The WCPFC agreed adopted a work plan at the 2015 Commission meeting (which has been revised in 2016) with application to skipjack, bigeye, yellowfin, Pacific Bluefin, and South and North Pacific albacore tunas. In fact, work towards establishing reference points and</p>
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	<p>harvest control rules is already well underway through the Management Objectives Workshop (MOW) process.</p> <p>The WCPFC CMM adoption of an approach has already triggered continuation of HCR development of <i>inter alia</i> South Pacific albacore.</p> <p>A score of SG60 is awarded, using CR v2.0 provisions for SG60 scoring.</p> <p>The 60 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).</p> <p>This condition is a mix of conditions 1 and 2 carried over from the previous assessments. The score for PI 1.2.2 remains at 60, however carry-over of this condition into reassessment is permitted by the MSC because the assessment uses FCR v2.0 and interpretation from MSC regarding “available” harvest control rules applies in this case.</p>
<b>Condition</b>	<p><b>1.2.1 By the end of the certification period</b></p> <ul style="list-style-type: none"> <li>• Well defined HCRs will be in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.</li> <li>• The HCRs will likely to be robust to the main uncertainties.</li> <li>• Available evidence will indicate that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs</li> </ul>
<b>Milestones</b>	<ol style="list-style-type: none"> <li>1. By the first annual surveillance audit the certifier will be presented with information on those consultations which have occurred with the responsible parties.</li> <li>2. By the second surveillance audit the certifier will be presented with information on progress which has been made in establishing a scientifically based target reference point and harvest control rules.</li> <li>3. By the third annual surveillance the certifier will be presented with information on how those harvest control rules, assuming they have been agreed to by the RFMOs, might be implemented.</li> <li>4. By the end of the certification period, the SG80 will be reached for this PI.</li> </ol>
<b>Client action plan</b>	<ol style="list-style-type: none"> <li>1. AAFA and WFOA will continue, through their participation in the US delegations to the annual meetings of the two relevant tuna RFMOs, the IATTC<sup>1</sup> and WCPFC, to promote the development of a scientifically based target reference point and harvest control rules that apply to all of the fishing mortality of the south Pacific albacore stock. This work is being primarily conducted by the Science Committee of the WCPFC and its science provider, the SPC. Because of the extremely expensive travel costs associated with these meetings, the clients will continue to actively participate in the US delegation conference calls concerning these SC meetings, and stay in close and regular touch with the Pacific Islands Regional Office (“PIRO”) and the Hawaiian Laboratory. As they have in the past, both WFOA and AAFA will support positions taken by the US delegations to the IATTC and WCPFC annual meetings to develop and implement a scientifically based target reference point and harvest control rules.</li> <li>2. AAFA and WFOA will continue to work with, and will report on, ongoing efforts to explore opportunities to cooperate with and support the work of other tuna fisheries organizations to develop a scientifically based target reference point and harvest control rules.</li> </ol>

<sup>1</sup> IATTC is included here because recent information indicates that there is increased fishing for South Pacific albacore in the “overlap” area between the WCPFC and the IATTC in the south Pacific.

	<p>3. WFOA's science advisor will also continue to work with the Albacore Working Group of the International Scientific Committee as it proceeds with its Management Strategy Evaluation process to pursue the establishment of a scientifically based target reference point and harvest control rules. It is hoped that the WCPFC-SC and the WCPFC will utilize some of the MSE work and conclusions for north Pacific albacore in their considerations of south Pacific albacore.</p> <p><u>Responsible parties:</u></p> <p>1. AAFA and WFOA will support the West Coast Region of the National Marine Fisheries Service and their scientific staffs, the Pacific Islands Regional Office of the National Marine Fisheries Service, which usually heads delegations to the WCPFC Science Committee and the annual WCPFC meetings, to develop a scientifically based target reference point and harvest control rules. Both organizations will also support the efforts of the U.S. Department of State to negotiate the acceptance of a scientifically based target reference point and harvest control rules.</p>
<b>Consultation on condition</b>	See above regarding responsible parties and client engagement.

**Table 14. Condition 3**

<b>Performance Indicator</b>	<b>3.2.2 Decision-making processes respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</b>
<b>Score</b>	75
<b>Rationale</b>	<p>The SPC stated at the Thirteenth Regular Session of the WCPFC, December 2016 meeting that although South Pacific albacore stocks were not overfished or currently experiencing overfishing, there was a decline in CPUE and consideration should be given for the implementation of alternative management measures. The declining catch rates fall under 'other important issues', not yet serious because the stock is above MSY reference points.</p> <p>Due to the overall lack of response from the WCPFC on the declining CPUE for SP albacore, decision-making processes fail to respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner.</p>
<b>Condition</b>	Scoring Issue (b). By the fourth surveillance audit, demonstrate that WCPFC decision-making processes have responded to the albacore declining CPUE issue by putting in place appropriate management measures, e.g. harvest strategy (Score 75)
<b>Milestones</b>	<p>By the 1<sup>st</sup> surveillance audit: Provide evidence that the WCPFC is responding to the issue of South Pacific albacore catch rates.</p> <p>By the 2<sup>nd</sup> surveillance audit: same as above</p> <p>By the 3<sup>rd</sup> surveillance audit: same as above</p> <p>By the 4<sup>th</sup> surveillance audit: Decision-making processes have responded to the albacore declining catch rate by putting into place an appropriate harvest strategy or other appropriate management measures.</p>
<b>Client action plan</b>	WFOA and AAFA will continue to advocate for harvest control rules and scientifically based Target Reference Points with other countries that have troll fisheries for South Pacific albacore through a revised and strengthened WCPFC

	<p>CMM.</p> <p>Even though ongoing discussions have not come to fruition over the past few years, WFOA and AAFA have advocated with the United States Government to have stronger enforcement and better reporting under the existing CMMs which the two organizations were instrumental in getting passed in the first place and which they have continued to support.</p> <p>In order to demonstrate that the WCPFC decision-making processes have responded to the albacore long line catch rate issue by putting in place a scientifically based harvest control strategy or some other suitable scientifically based management system, the client will:</p> <p>Year 1 (Dec 2018) Engage with the United States delegation to WCPFC meetings and sub-commission meetings to ensure that delegations to meetings of the Commission:</p> <ul style="list-style-type: none"> <li>· Deliver the message that development by the Commission of a scientifically based harvest strategy for SP albacore, after first setting a scientifically based target reference point, and as contemplated by CMM 2014-06, should incorporate agreed biological, ecological, economic and/or social objectives.</li> </ul> <p>Year 2 (Dec 2019) Work with the United States Departments of State and Commerce to ensure that delegations:</p> <ul style="list-style-type: none"> <li>Work in concert with other delegations to encourage the WCPFC to agree on and adopt a scientifically based harvest strategy for the SP albacore stock that includes agreed economic objectives.</li> </ul> <p>Year 3 (Dec 2020) Work with the United States Departments of State and Commerce to ensure that delegations to meetings: Work in concert with other WCPFC delegates from other major countries using the longline method of fishing the stock, in advance of the annual WCPFC meeting, to seek support for the adoption of a scientifically based harvest strategy for SP albacore as contemplated by CMM 2014-06.</p> <p>Year 4 (Dec 2021) Provide evidence that WCPFC decision-making processes have responded to the longline albacore catch rate issue by putting in place a harvest strategy or some other suitable means for scientifically managing the resource.</p>
<b>Consultation on condition</b>	See above regarding responsible parties and client engagement.

## Appendix 2 Peer Review Reports

### Peer Reviewer 1:

#### Summary of Peer Reviewer Opinion

<b>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</b>	Yes	<b>CAB Response</b>
<u>Justification:</u> All evidence has been taken into account to arrive at the scores given.		<u>No response required.</u>

<b>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCR 7.11.1 and sub-clauses]</b>	No/Yes	<b>CAB Response</b>
<u>Justification:</u> <b>Conditions 1.2.1 and 1.2.2 Have been carried over from the previous certificate and is in harmony with other Sth pacific albacore certified fisheries.</b> <b>For Condition 1 PI 1.2.1. The years need to be changed eg 1<sup>st</sup> year should now be 2017/18. 2<sup>nd</sup> year 2018/19. 3<sup>rd</sup> year 2019/20 and 4<sup>th</sup> year 2020/21. No year 5.</b>  <b>For Condition 2. There are no milestones</b>  <b>An additional condition for 3.2.2 decision making is suggested to harmonise with other certified South pacific albacore</b>		<u>Thank you for these comments. The conditions content has been updated.</u> <u>Note we have decided to add a condition on 3.2.2. See specific rationale below.</u>

If included:

<b>Do you think the client action plan is sufficient to close the conditions raised? [Reference FCR 7.11.2-7.11.3 and sub-clauses]</b>	/No	<b>CAB Response</b>
<u>Justification:</u> <b>The CAP for condition2 PI 1.2.2. as written, may not meet the SG 80 to close the condition. It needs to</b> <b>(a) Demonstrate that well defined HCRs are in place that ensure the exploitation rate is reduced as the PRI is approached, and that are expected to keep the stock fluctuating around a target level consistent with (or above) MSY.</b> <b>(b) Provide evidence that the HCRs are likely to be robust to the main uncertainties.</b> <b>(c) Demonstrate that available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.</b>  <b>If agreed there will need to be a CAP for PI 3.2.2</b>		As the peer reviewer is aware, this situation is not uncommon for tuna fisheries managed by RFMOs wherein the client fisheries can only act through attempts to influence regulation via representation. MSC has provided guidance for these situations which allow for milestones to be related to the activities that clients can actually do, which in this case means supporting and encouraging the RFMO to continue prioritizing research, development and implementation of HCRs.

<b>Performance Indicator</b>	<b>Has all available relevant information been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
1.1.1	Y	Y	NA	The information provided supports the conclusions and scoring and is in harmony with other certified Sth Pacific fisheries	No response required.
1.1.2	NA	NA	NA		
1.2.1	Y/N	Y	Y	In the summary score Table Section 6.2 of report PI 1.2.1 score is given as 80. It should be 70 and P1 score of 85 (should be 84.2)  Sla. Fishing effort on albacore has increased considerably over the last few years, particularly above 20°S, where there is no CMM in place. ALB catch, however, appears to have stabilised since 2010 (when the first CMM for SPA was put in place), albeit at a relatively high level compared to historical catches. On this basis, it is reasonable to argue that the WCPFC harvest strategy has not been 100 % successful in stabilising the fishing impact on the stock, but it has most likely had some effect in slowing the increase in fishing mortality. It is also worth noting that	The errors in the summary table and resulting P1 score have been corrected. Note however that the new score for P1 following response to stakeholder comments is 82.5  The assessment team does not see any disagreement between the reviewer and the assessment. The extra details may strengthen the argument, but does not change the

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
				the longline fishery targets albacore above the size at maturity, so is impacting potential recruitment, even at high exploitation rates, less than, say, the purse seine bigeye fishery (this is the reason why estimates of $SB_{MSY}$ are low relative to $SB_{F=0}$ ). In addition, the Tokelau Arrangement, once implemented, will provide a more clearly defined harvest strategy, at least within participating EEZs. The score does not change	score as per the reviewer's comment..
1.2.2	Y	Y	Y	The information provided supports the conclusions and scoring and is in harmony with other certified Sth Pacific fisheries	No response required.
1.2.3	Y/N	Y	NA	SI a The information used by SPC to inform the stock assessment, projections etc. (and hence support the harvest strategy) is extensive. There are some gaps in the data however; for example, for the latest stock assessment Japan (the key fleet for the early part of the time series) refused to provide operational data; there is also uncertainty around growth rates, and conflict in the assessment	Eventhough thre are some information gaps, as per the justifications for PI 1.2.3 there is sufficient relevant information related to stock structure, stock productivity, fleet composition and other

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
				between the troll length-frequency data and the CPUE data Harley et al. (2015) note the key uncertainties in the assessment to be: <input type="checkbox"/> _lack of operational data from Japan (the key fleet for the early part of the time series)  <input type="checkbox"/> regional weighting of CPUE  <input type="checkbox"/> _weighting applied to the length-frequency data, which conflicted with the CPUE data  <input type="checkbox"/> uncertainty in growth patterns. The score does not change	data is available to support the harvest strategy. The requirements of the SG80 are met , and. the 80 score is in agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016).
1.2.4	Y	Y	Y	The information provided supports the conclusions and scoring and is in harmony with other certified Sth Pacific fisheries	No response required.
2.1.1	Y	Y	Y	No main primary species so all scores and minor promary species <5% so scores of 100 are appropriate for 2.1	
2.1.2	Y	Y	Y	As above	

<b>Performance Indicator</b>	<b>Has all available relevant information been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
2.1.3	Y	Y	Y	As above	
2.2.1	Y	Y	Y	There is no secondary species that exceeds 5% of the total albacore landings. The information provided supports the conclusions and scoring	
2.2.2	Y	Y	Y	As above	
2.2.3	Y	Y	Y	As above	
2.3.1	Y	Y	Y	The highly selective nature of the gear types would mean that ETP interactions are highly unlikely. The information provided supports the conclusions and scoring	
2.3.2	Y	Y	Y	As above	
2.3.3	Y	Y	Y	Little data are available on marine mammal interactions in the AAFA and WFOA albacore fishery. What is available comes from logbooks, which show no interactions with marine mammals. This supports the scoring and conclusions	

<b>Performance Indicator</b>	<b>Has all available relevant information been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
2.4.1	Y	Y	Y	The AAFA and WFOA troll fishery is highly selective and operates at the surface in deep, oceanic water ; there is therefore no interaction with the seabed, The information provided supports the conclusions and scoring	
2.4.2	Y	Y	Y	As above	
2.4.3	Y	Y	Y	As above	
2.5.1	Y	Y	Y	The likelihood of ecosystem impacts from this fishery are extremely low The information provided supports the conclusions and scoring	
2.5.2	Y	Y	Y	As above	
2.5.3	Y	Y	Y	As above	
3.1.1	Y	Y	Y	The information provided supports the conclusions and scoring	
3.1.2	Y	Y	Y	The information provided supports the conclusions and scoring	

<b>Performance Indicator</b>	<b>Has all available relevant information been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
3.1.3	Y	Y	Y	The information provided supports the conclusions and scoring	
3.2.1	Y	Y	Y	The information provided supports the conclusions and scoring	
3.2.2	N	N	A condition is required	Slb Commission decision-making processes are based heavily on Scientific Committee reports on the status of target and non-target species and respond to serious issues, such as overfishing, and suspected overfished (e.g. status of bigeye). However, at the Thirteenth Regular Session of the WCPFC, December 2016, the Ocean Fisheries Programme of SPC reported that although the South Pacific Albacore stocks were not overfished, the decline in CPUE since 1992 has raised concerns over the economic viability of the fishery. The SPC projections suggest that current catch and effort is not sustainable and the SPC bio-economic analysis suggests that consideration should be given for the implementation of alternative management measures as the CMM for South Pacific Albacore (CMM 2010-5) appears to not be effective in constraining effort. So far, the decision-making process has not responded effectively. The issue was	Regarding the biological sustainability of the stock, the SPC stated at the 13 <sup>th</sup> Regular Session of the WCPFC that the stock is not overfished and overfishing is not occurring. While they may have warnings about economic viability, this is not a concern of the MSC standard because it is focused on a science-based environmental standard for sustainability. While it may be true that the current CMM 2015-02, which replaced CMM

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
				discussed via email with the other CABs involved in WCPFC tuna assessments and it was agreed that this is an "important" but not (as yet) "serious" issue It was agreed that a condition was appropriate for this PI with a score of 75.Refer MSC reports French Polynesia 2018 Fiji longline 2018 and American Samoa 2017.	2010-05, is not effective in controlling effort at the stock level, this is not a serious management issue for the pole and line and troll fleets. The effort from the pole and line and troll fleets has been stable or declining and comprises a very small portion of the overall effort on south Pacific albacore (Brouwer <i>et al.</i> 2015). The issue of the current lack of effective means of controlling effort at stock level is addressed in the Conditions for Principle 1. The MSC assessments for French Polynesia, Fiji longline and American Samoa are all longline

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
					<p>fisheries. Therefore we have determined that it is not necessary to harmonize this PI with the SP albacore longline fisheries and the score and rationale for this PI remain unchanged.</p> <p>Updated following PCDR comments: Although the decision-making processes are in place that respond to serious issues at both the national and international level, it is not clear that these processes respond to ALL issues for South Pacific albacore, nor is it evident that ALL these issues receive a response in a timely and adaptive manner. Actions have been</p>

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
					proposed, but not yet adopted. Due to the overall lack of response from the WCPFC on the declining CPUE for SP albacore, decision-making processes fail to respond to <b>serious and other important issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner.  The suggested harmonization of scores mentioned for 3.2.2 by the Peer Reviewer has now been agreed upon by the assessment team and the overall score was reduced to 75, with a required condition.

<b>Performance Indicator</b>	<b>Has all available relevant information been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
3.2.3	Y	Y	NA	The information provided supports the conclusions and scoring	
3.2.4	Y	Y	NA	The information provided supports the conclusions and scoring	

**Peer Reviewer 2:**  
**Summary of Peer Reviewer Opinion**

<p><b>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</b></p>	<p><b>Yes/No</b> Yes</p>	<p><b>CAB Response</b></p>
<p><u>Justification:</u>  See review of P1 1.2.2 scoring. The report should make sure that that scoring is justified. The overall certification hinges on that.</p>		<p>MSC CR v2.0 lays out <b>two</b> conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level. Both of these conditions are met (see justification for PI 1.2.2a).</p>

<p><b>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCR 7.11.1 and sub-clauses]</b></p>	<p><b>Yes/No</b> Yes</p>	<p><b>CAB Response</b></p>
<p><u>Justification:</u>  The two conditions imposed relate to harvest strategies and HCRs. The conditions are appropriate.</p>		

If included:

<p><b>Do you think the client action plan is sufficient to close the conditions raised? [Reference FCR 7.11.2-7.11.3 and sub-clauses]</b></p>	<p><b>Yes/No</b> Yes</p>	<p><b>CAB Response</b></p>
<p><u>Justification:</u>  The action plan is to essentially keep up the pressure on the RFMOs to complete their work on HCR development, It should be completed within the certification period.</p>		

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.1.1	Yes	Yes	NA	<i>Assessment indicates SBcurr/SBmsy=2.86 SBcurr/20%SB0(LRP)=2. I concur with score</i>	No response required.
1.1.2	NA	Na	NA	<i>Stack has not been overfished</i>	
1.2.1	Yes	Yes	Yes	<i>1.2.1.a-f) I concur with scores and the need for a condition for Harvest Strategies 1.2.1.f): bycatch is not really relevant to this UofA. But it is relevant to other fisheries targetting this stock. This is the one issue in P1 where the definition of the UofA enters into the evaluation..</i>	No reponse required.
1.2.2	Yes	Yes	Yes	<i>The key issue for an HCR in 1.2.2.a is whether an HCR is "available" and "expected" to respond to the stock status. Clearly, considerable progress on an HCR has been made (I think that progress is being reported on at the same time that this review is taking place, i.e. Aug 2018). Additionally, the Condition associated with 1.2.2 appropriately responds to the need for an HCR. However, the spawning biomass has exhibited a steady declining trend and the</i>	MSC CR v2.0 lays out <b>two</b> conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level.  First, CR v2.0 SA2.5.2a provides for HCR being recognized as available "...if stock biomass has not previously been reduced below B <sub>MSY</sub> or has been maintained at that level for a recent period of time". As per the stock

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
				<p><i>RFMO has yet to demonstrate it can respond if catch reductions are needed for SPac ALB. This is a critical point! If 1.2.2.a does not achieve 60, then P1 fails.</i></p> <p><i>The UofA's targeting this stock have been certified for many years,</i></p> <p><i>I can concur with the 1.2.2 score of 60, but it is a marginal call. It is important to see the progress the RFMOs have made toward this HCR.</i></p>	<p>assessment (Harley et al., 2015) the CR v2.0 SA2.5.2a condition has been met.</p> <p>Second, CR v2.0 SA2.5.3b provides for HCR being recognized as available if "...there is an agreement or framework in place that requires the management body (WCPFC) to adopt HCRs before the stock declines below <math>B_{MSY}</math>". The framework: WCPFC CMM 2014-06 sets out definitions of harvest strategies to be developed and implemented. The definitions include TRPs and LRPs and decision rules or ("harvest control rules"), with a clear intention that harvest control rules, tested using simulation approaches, will be part of the implemented harvest strategies. The Commission adopted a work plan (WCPFC 2017d), with application to skipjack, bigeye, yellowfin, Pacific Bluefin, and South and North Pacific albacore tunas. Therefore the score and rationale remain unchanged.</p>

<b>Performance Indicator</b>	<b>Has all available relevant information been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
1.2.3	Yes	No	NA	<i>The score concurs with the recent harmonization process, But I would have scored 1.2.3.a as having met SG100. The justification doesn't really address why SG100 was not met.</i>	Given the information gaps identified in the stock assessment (Harley et al., 2015) the assessment team concluded that only sufficient relevant information rather than a comprehensive range of information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.
1.2.4	Yes	Yes	NA	<i>Assessment methods, appropriate status estimates, uncertainty evaluation, robust to sensitivity, and peer review have been scored appropriately. I concur</i>	Although the peer reviewer agreed with our original scores, upon investigation of the concerns raised by ISSF (see stakeholder comments below) we decided to lower the score to 85 on the basis that the catches of SP albacore from the Eastern Pacific Ocean are not included in the stock assessment.
2.1.1	Yes	Yes	NA	<i>I concur</i>	
2.1.2	Yes	Yes	NA	<i>I concur</i>	
2.1.3	Yes	Yes	NA	<i>I concur</i>	

<b>Performance Indicator</b>	<b>Has all available relevant information been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
2.2.1	Yes	Yes	NA	<i>I concur</i>	
2.2.2	Yes	Yes	NA	<i>I concur</i>	
2.2.3	Yes	Yes	NA	<i>I concur</i>	
2.3.1					
2.3.2	Yes	Yes	NA	<i>I concur</i>	
2.3.3	Yes	Yes	NA	<i>I concur</i>	
2.4.1	Yes	Yes	NA	<i>I concur</i>	
2.4.2	Yes	Yes	NA	<i>I concur</i>	
2.4.3	Yes	Yes	NA	<i>I concur</i>	
2.5.1	Yes	Yes	NA	<i>I concur</i>	
2.5.2	Yes	Yes	NA	<i>I concur</i>	

<b>Performance Indicator</b>	<b>Has all available relevant information been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
2.5.3	Yes	Yes	NA	<i>I concur</i>	
3.1.1	Yes	Yes	NA	<i>I concur</i>	
3.1.2	Yes	Yes	NA	<i>I concur</i>	
3.1.3	Yes	Yes	NA	<i>I concur</i>	
3.2.1	Yes	Yes	NA		

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
3.2.2	Yes	No	NA	<p><i>3,2,2,b scored a Yes for SG 80 on responding to management issues in an appropriate and timely manner. Similarly 3,2,2,b scored a yes for SG80 (use of precautionary approach). While the WCPFC Convention specifies that the precautionary approach be used, I am not convinced that it has been adhered to. The justification under 3.2.2.b mentions that it might not really be timely. Needs more justification.</i></p>	<p>I have revised the justification for 3.2.2(b). While it may be true that the WCPFC doesn't fully adhere to the precautionary approach, it is required by WCPFC Convention Article 5(c) to apply the precautionary approach in decision-making and Article 6 requires the application of the precautionary approach and use of a Scientific Committee to ensure that the Commission obtains the best scientific information available for its consideration and decision-making. Because the the effort from the pole and line and troll fleets has been stable or declining and comprises a very small portion of the overall effort on south Pacific albacore (Brouwer <i>et al.</i> 2015), this does not appear to be a serious management issue for this fishery. Please also see the response to Peer Reviewer 1 under this Performance Indicator.</p>
3.2.3	Yes	Yes	NA		

<b>Performance Indicator</b>	<b>Has all available relevant information been used to score this Indicator? (Yes/No)</b>	<b>Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)</b>	<b>Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)</b>	<b>Justification</b> Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.  Note: Justification to support your answers is only required where answers given are 'No'.	<b>CAB Response</b>
3.2.4	Yes	Yes	NA		

**Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary) can be added below and on additional pages**

Editorial:

Under 3.5.4 on Page 33 the text refers to Total Reference Points. It should be Target Reference Points. [Thank you, this has been corrected.](#)

Table 4 Page 39: the discussion on the harmonization under v1.3: the last row of the table is

V2.0	1.1.1	1.1.2		1.2.1	1.2.2
AAFA/WFOA (present assessment)	100	70	60	80	95

It is unclear whether the scores are referring to harmonization or the present assessment. If it is the latter, then the scores don't match with later in the document. Needs to be explained. [Thank you, this has been corrected.](#)

Table 9 page 50 lists the P1 score as 84.2. Table 10 Page 51 lists P1 as 85.0. The 85 score is consistent with the combined individual scores in the beginning of Table 10, so presumably the Table 9 entry needs to be corrected. [Thank you, this has been corrected.](#) [Note the new aggregate P1 score is 82.5, following response to stakeholder comments.](#)

In the scoring table under 1.2.2.a SG 100 should have an "N" under it. [Thank you, this has been corrected.](#)

## **Appendix 3 Stakeholder submissions**

We received comments from ISSF during our additional information gathering stage, July 19 – August 19, 2018. Responses by the assessment team are included in the stakeholder comment template below.

Assessment Stage	Fishery	Date	Name of Individual/Organisation Providing Comments
<input checked="" type="checkbox"/> Information gathering and stakeholder meetings* Opportunity to engage with and provide information to the CAB about the specific details and impacts of the fishery.	AAFA and WFOA South Pacific albacore tuna	July 2018	ISSF

Nature of Comment (select all that apply)	Additional Information/Detail Please attach additional pages if necessary.	Cab Response
<input type="checkbox"/> I wish to request an in-person meeting with the site team during their assessment visit (meetings without the fishery client present may be requested at this phase of the process if desired).	<p>ISSF is concerned that information on stock status for South Pacific albacore is outdated in regards to the IATTC region. SPC-OFP, which carries out the assessments, last included fishery data from the IATTC region in the 2012 assessment (using data up to 2011). At its Ninth Scientific Advisory Committee meeting, the IATTC SAC Recommended to the IATTC Commission:</p> <p><i>"2. <u>South Pacific albacore</u>. Recent assessments of south Pacific albacore, which are conducted by SPC, have not considered the fisheries data in all of the EPO, and there are no plans to include these data in the upcoming 2018 assessment. Thus, the eastern part of the stock will remain effectively un- assessed. The SAC recommends that the IATTC staff work with SPC to ensure that the entire South Pacific be included in future assessments."</i> (Source: <a href="https://www.iattc.org/Meetings/Meetings2018/IATTC-93/PDFs/Docs/English/IATTC-93-03-EN_%20Recommendations-of-the-9th-meeting-of-the-Scientific-Advisory-Committee.pdf">https://www.iattc.org/Meetings/Meetings2018/IATTC-93/PDFs/Docs/English/IATTC-93-03-EN_%20Recommendations-of-the-9th-meeting-of-the-Scientific-Advisory-Committee.pdf</a>)</p> <p>ISSF believes that in order for the fishery to meet the MSC standard, particularly in reference to Performance Indicators 1.1.1 and 1.2.4, it is crucial that the Eastern component of the South Pacific albacore stock is included in the stock assessment. Given that the UoA covers the whole South Pacific albacore stock, ensuring the Eastern component of the stock is also assessed would be the only possible approach to</p>	<p>The team has investigated the issue raised by ISSF and agrees that not incorporating the EPO catches in the stock assessment is a concern. Therefore the score for PI 1.2.4 (assessment of stock status) has been lowered and the following text added: However one 'major feature' relevant to the biology of the species and the nature of the UoA that is not taken into account in the present stock assessment is the fishery removals from this stock in the Eastern Pacific Ocean (EPO). While these are small relative to the catches in the WCPO, the IATTC has indicated that the assessment would benefit from their inclusion. Therefore the SG100 is not met and we have raised a recommendation associated with this concern. The IATTC is planning to do a</p>
<input checked="" type="checkbox"/> I wish to submit written information about the fishery and its performance against the default tree and/or RBF to the assessment team (please provide documents or references).		
<input type="checkbox"/> Other (please specify)		

		<p>avoid uncertainty about stock status. The stock assessment as is currently being conducted by SPC would not qualify as an ‘adequate assessment of stock status’.</p>	<p>collaborative benchmark assessment with SPC in 2022 wherein the EPO catches will be included (IATTC 2018).</p> <p>An associated recommendation has also been added to the PI.</p>
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We received additional comments from ISSF and MSC during the public comment draft report phase. These are provided below, together with the assessment team responses.

**Table 15. ISSF stakeholder comments and CAB responses.**

Comment	Team response
<p><b><i>PI 1.2.2. Harvest Control Rules</i></b></p> <p>The independent report by <a href="#">Medley and Gascoigne (2017)</a> indicates that the fishery would not meet SG60 for SI 1.2.2.a and that, as a result, the overall PI score would be less than 60 (“Fail”). While the report has not yet been updated to include the results of the 2018 South Pacific albacore stock assessment, part of its rationale for this SI still applies:</p> <p><b><i>1.2.2. a: “At SG60, MSC allows a harvest control rule to be ‘available’ rather than ‘in place’ if the requirements summarised below are met (for full list see SA2.5.2, 2.5.3):</i></b></p> <ul style="list-style-type: none"> <li><i>Stock biomass has not previously been reduced below the MSY level, or has been maintained at that level for a recent period of time ... and is not predicted to be reduced below <math>B_{MSY}</math> within the next 5 years;</i></li> </ul>	<p>MSC CR v2.0 lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level.</p> <p>First, CR v2.0 SA2.5.2a provides for HCR being recognized as available “...if stock biomass has not previously been reduced below <math>B_{MSY}</math> or has been maintained at that level for a recent period of time”.</p> <p>As noted at PI 1.1.1(c), The MULTIFAN-CL assessment provides probabilistic estimates of parameters of interest, and has been extensively explored through sensitivity tests (Harley <i>et al.</i> 2015). The stock assessment estimates spawning stock biomass, <math>SB_{latest}/SB_{MSY}</math> to be 2.86 with no overlap in confidence intervals. The stock is estimated never to have reduced to <math>SB_{MSY}</math> and has hence been above <math>SB_{MSY}</math> in all years.</p> <p>The CR v2.0 SA2.5.2a condition is therefore met.</p> <p>Second, CR v2.0 SA2.5.3b provides for HCR being recognized as available if “...there is an agreement or framework in place that requires the management body (WCPFC) to adopt HCRs before the stock declines below <math>B_{MSY}</math>”.</p> <p>WCPFC CMM 2014-06 sets 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, will be part of the implemented</p>

<ul style="list-style-type: none"> <li>• <i>HCRs are effectively used in other stocks by the same management body or an agreement or framework is in place requiring the management body to adopt HCRs before the stock declines below BMSY.</i></li> </ul> <p><i>The second of MSC's requirements for scoring an 'available' HCR is met by CMM 2014-06. (...) [However] the case of bigeye also raises the question as to what actions WCPFC could be relied on to take, should the next stock assessment for SP albacore give a different perception of the stock status (as happened for bigeye in 2017). Despite bigeye being considered overfished from 2011-2017, the management actions put in place by WCPFC have shown no evidence so far of being able to reduce fishing mortality on bigeye, as shown by the most recent stock assessment. On this basis, there is no particular evidence that any 'available' HCR is able to reduce the exploitation rate as the PRI is approached. On this basis, SG60 is not met.</i></p> <p><i>For improvement in this scoring, some demonstrable progress is required towards a formal harvest strategy and HCR (as per CMM 2014-06) such that a more convincing argument can be made that effective action will be taken if required."</i></p> <p><b>1.2.2.b: (...) Not met.</b>  <b>1.2.2.c: (...) SG60 is met.</b></p> <p><b>6.7 Only 1 out of 2 SG60 were met. PI 1.2.2 score: "Fail"</b></p>	<p>harvest strategies. The Commission agreed to adopt a work plan at the 2015 Commission meeting, with revision in 2016 (WCPFC 2017d), 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 (Pilling <i>et al.</i> 2015).</p> <p>Both MSC conditions (CR v2.0 SA2.5.2 a and CR v2.0 SA2.5.3b) are met and therefore <b>Generally understood</b> HCRs are in place <b>or available</b> that are <b>expected</b> to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached. The PI 1.2.2a SG 60 is met and no change to the score has been made.</p>
<p><b>PI 1.2.4. Assessment of the stock status</b></p> <p>6.6.1 ISSF thanks the CAB for addressing its concern that catches made in the EPO are not considered in the assessment. However, we believe that a score of 85 for PI 1.2.4 is too generous for the reasons that follow:  Scoring SI(a) at 80 requires that <i>"The assessment is appropriate for the stock and for the harvest control rule."</i>  ISSF does not find that this is the case given that catches in the EPO are not included in the assessment and a harvest</p>	<p>MRAG Americas reached out to the authors of the 2015 SP Albacore stock assessment at SPC and received the following additional information concerning the decision to conduct a WCPO-only assessment (G. Pilling pers. Comm)</p> <p><i>Some background: we moved to a WCPO-only assessment in 2015 for a few reasons, including:</i></p> <ul style="list-style-type: none"> <li>- <i>The assessment then provides information directly relevant to the harvest strategy and management discussions for SP albacore within the WCPO</i></li> <li>- <i>Unlike other tuna we do not have large amounts of tagging data to inform</i></li> </ul>

control rule for South Pacific albacore is not even on the radar for IATTC. Nor is the WCPFC work to develop HCRs for the stock considering this component of the fishery as far as we know.

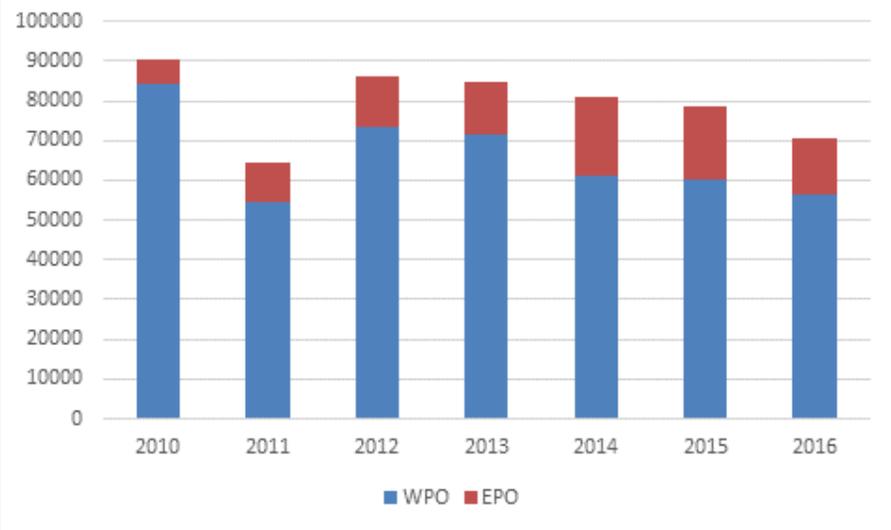
Scoring SI(c) at 100 requires that *"The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way."* ISSF believes that this is not justified because there are not even sensitivity analyses to evaluate how the assessment results would differ if the EPO catches were included.

ISSF understands that setting a score lower than 95 for this PI would be out of agreement with the outcomes of the 2016 MSC Harmonization meeting in Hong Kong, however, the CAB must bear in mind that participants in the 2016 harmonization exercise were probably not aware that EPO catches were not included in the latest (then 2015) assessment.

- on movement of SPA – in particular east to west
- *Gathering EPO data (e.g. size data, information to standardise CPUE indices) can significantly extend the time needed for the assessment. In the SP-wide assessment of 2012 these fleets were included as 'Other LL' in the two eastern regions (east of 110W) where catches were historically low. Standardised CPUE series were – I think – developed from data we hold and only applied to Regions 1-4, which extended east to 110W (i.e. slightly into the EPO).*

*Nevertheless the issue of the EPO catches was raised at SC14 by ISSF, noting they have increased since the last assessment as you indicate.*

*We do need to be careful about what we call 'EPO' and 'WPO'. Our current assessment includes the overlap area between the two, where there is a fair amount of SPA catch, and I think this is being included within some of the 'EPO' sums. The graph below is a quick extract from the data we have where 'WPO' is 0-50S and 140E to 130W (so includes the close-to-the-equator part of the overlap area that is actually outside the WCPFC-CA) and 'EPO' here is everything east of that to 80W. 'EPO' catches peaked in 2014 at just under 20,000mt. Still a significant amount but not as high as some numbers that have been indicated.*



Whether including the remaining catches from the EPO would make a difference in the assessment depends on the fleet selectivity in the east, sizes caught, whether the CPUE trends are different in the west and east (which the previous SP-wide assessment assumed they were not), etc. According to Graham Pilling (pers comm) it would be expected that absolute MSY would go up (there's more catch from a 'larger' stock) but what it means for F/Fmsy or SB/SBmsy or SB/SBF=0 ratios is unknown.

Regarding IATTC and whether they have SP Albacore on their radar, IATTC indicated (C. Minte-Vera, 2018) that they are considering an IATTC-only SP Albacore stock assessment in 2020, and as mentioned previously, a benchmark of the entire IATTC-WCPFC SP Albacore stock is in the IATTC strategic plan for 2022. Regarding HCRs for SP albacore in the IATTC area, these do fall explicitly under the default Harvest Guidelines for IATTC.

On the basis of this additional information, we believe the situation at present is sufficient to justify the score given, including that the assessment is conducted in a probabilistic way. There has been no change to the score given in the PCDR

	and the recommendation that was added following ISSF's previous comments on this issue remains in place.
<p><b>PI 2.3.3. ETP species information</b></p> <p>According to the PCDR, the two sources of information used to identify and categorize species under Principle 2 were (i) Landings from the US South Pacific albacore troll fishery and retained catch data for the period 2012 – 2016 and (ii) Observer trips undertaken in the 1990 – 1991 and 1991 – 1992 seasons.</p> <p>Although due to the nature of the fishing gear interactions with ETP species may be low, ISSF is concerned that information on ETP species may not be comprehensive enough and considers that updated observer data should be collected, either by human observers or using Electronic Monitoring Systems. ISSF suggest a recommendation is added on this PI, similar to the one set for the New Zealand Troll fishery:</p> <p><i>“Despite low levels of ETP interactions seen in historic data, there should be an ongoing level of observer coverage that will provide information on potential interactions.”</i></p>	A recommendation has been added equivalent to that in place for the NZ albacore troll fishery. No change to the score has been made.
<p><b>PI 3.1.3. Long-term objectives</b></p> <p>According to the independent report, this PI would not meet SG100 at the regional level.</p> <p><b>IATTC</b> – (...) <i>Although the precautionary approach is in the Convention, it is less clear that it is applied in all policy.</i> Reference points for bigeye do not appear to be particularly precautionary when taking into account significant uncertainties (although there may be evidence to support the values used), and precautionary action has not been taken to prevent the bigeye stock declining to current levels. In practice, there is no clear link between the convention and practical implementation of policy in all fisheries.</p>	<p>The stakeholder comments for this PI appear to be concerned specifically with how, in practice, the precautionary approach is applied/implemented, rather than how it is codified within management policy. 3.1.3 SG100 guidepost states that “Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are explicit within and required by management policy.”</p> <p>WCPFC Convention state these objectives in their overall management framework, while also stating that “effective management and conservation require the application of the precautionary approach and the best scientific information available. The OFP also has clear objectives outlined which includes: high-quality scientific information and advice for regional and national fisheries</p>

<p><i>Overall, clear explicit objectives incorporating the precautionary approach and ecosystem-based management in the policy meet the MSC Principles and Criteria, and therefore SG80. It is not clear that the precautionary approach is a requirement across all areas of policy, so <b>SG100 is not met</b></i></p> <p><b>WCPFC</b> – (...) <i>While it appears to be a requirement, in practice it is less clear that the precautionary approach is applied in practice across all policy. Stock assessments in 2010, 2011 and 2014 indicate that bigeye fishing mortality exceeded levels consistent with MSY. While precautionary reference points have been set, there has not been a corresponding precautionary action that has reduced exploitation levels.</i></p> <p><i>Overall, clear explicit objectives incorporating the precautionary approach and ecosystem-based management in the policy meet the MSC Principles and Criteria, and defined, meeting SG80. However, it is not yet clear that the precautionary approach is applied in practice across all policy for all stocks, so <b>SG100 is not met.</b></i></p> <p>All SG60 and SG80 were met, and 0 out of 1 SG100 were met. PI 3.1.3 score: 80 (Both IATTC and WCPFC)</p>	<p>management on the the status of, and fishery impacts on, stocks targeted or impacted by regional oceanic fisheries; accurate and comprehensive scientific data and improved understanding of pelagic ecosystems in the western and central Pacific Ocean.</p> <p>The MSC guidance pertaining to this performance indicator (GSA4.5) for PI 3.1.3 “This PI forms an important part of the overall understanding of the use or otherwise of a precautionary approach in the UoA but is not concerned with the operational implementation of the precautionary approach within the ‘day –to-day’ management of the UoA itself.”</p> <p>In part the reason for the focus on the existence of appropriate regulations and objectives rather than the implementation of them for this and PI 3.2.1 is to avoid scoring the same thing in more than one place within the assessment, with effectiveness of management implementation being scored in P1 and P2 for the respective components within those Principles.</p> <p>The SG100 is therefore met for this PI.</p>
<p>PI 3.2.1. Fishery-specific objectives</p> <p>According to the independent report, this PI would not meet SG100 as regards IATTC and WCPFC regional management.</p> <p><b>IATTC</b> – (...) <i>However, although broadly measurable, [conservation measures] are not necessarily well-defined, particularly in relation to achieving MSC P&amp;C. Stock assessments are not available for all species (e.g. skipjack), and proxies for MSY have not been determined. Therefore, objectives may be somewhat vague with respect to determining precise status using reference points, for example. Certain resolutions and conservation measures might be</i></p>	<p>SG 100 for PI 3.2.1 states that “Well defined and measurable short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are explicit with the fishery-specific management system.”</p> <p>WCPFC CMM -2015-02 states that CCMs shall cooperate to ensure the long-term sustainability and economic viability of the fishery for South Pacific albacore, including cooperation and collaboration on research to reduce uncertainty with regard to stock status. The <i>WCPFC Convention, Article 5</i>, states that the objective is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks, (including south</p>

presumed to achieve MSC objectives, but it is not certain. This would need to be evaluated for each specific fishery when undergoing MSC assessment.

*The scientific advice is based on MSC Principles 1 and 2, because these objectives are implicit in the management of each stock, meeting SG60. In addition, explicit objectives are provided through the resolutions and recommendations, which determine the aim and intention of the conservation measures. In most cases, this meets SG80. However, these objectives are not stock specific and often cannot be determined to be entirely consistent with the requirements of MSC Principles 1 and 2, since they are related to the conservation measure rather than the stocks or species. Therefore **SG100 is not met**.*

**WCPFC** – (...) *Because the conservation measures contain reasonably explicit and specific intentions and objectives, and also allow for evaluation of the performance against these objectives, the fisheries meet SG80.*

*However, although broadly measurable, they are not necessarily well-defined particularly in relation to achieving MSC P&C. For skipjack there is now an explicit target set out in 15-06. For bigeye and yellowfin it is also relatively clear, for albacore less so. But for most fisheries, 100 wouldn't be met because there is not a full suite of well-defined and measurable objectives for P2 (...).*

*Objectives may be somewhat vague with respect to determining precise status using reference points, for example, and allowing for unspecified qualifications. Certain resolutions and conservation measures might be presumed to achieve MSC objectives, but it is not certain. A higher score might be possible should WCPFC develop reference points directly linked to proscribed management action, as would be applied through a harvest control rule, for example. This would need to be evaluated for each specific fishery when undergoing MSC assessment.*

*The scientific advice is based on MSC Principles 1 and 2, because these objectives are implicit in the management of each stock, meeting SG60. In addition, effectively explicit objectives are provided through*

Pacific albacore) in the western and central Pacific Ocean in accordance with the 1995 UN Fish Stocks Agreement and the 1982 United Nations Convention on the Law of the Sea. The WCPFC exercise management control into the high seas zones outside national EEZs.

The OFP also has clear objectives outlined with regard to south Pacific albacore which include: high-quality scientific information and advice for regional and national fisheries management on the status of, and fishery impacts on, stocks targeted or impacted by regional oceanic fisheries; accurate and comprehensive scientific data and improved understanding of pelagic ecosystems in the western and central Pacific Ocean.

The The MSC guidance pertaining to this performance indicator (GSA4.7.1.1) for PI 3.2.1 states “the objective shall be assessed under this PI and the strategies that implement the objectives shall be assessed under P1 and P2.

These short and long-term objectives are explicit within the management system for South Pacific albacore, and therefore the SG 100 level has been met. As with the response to 3.1.3, it is important to make sure that scoring in P3 does not duplicate scoring in P1 and 2. Therefore the specific implementation of measures resulting from existence of short and long-term objectives is not scored here—rather it is scored within the management PIs in P1 and P2.

Therefore the score has been left at 100.

<p>the conservation and management measures. In most cases, this should meet SG80. However, with the qualifications, it may not be possible to determine whether these are consistent with the requirements of MSC Principles 1 and 2, since they are related to the conservation measure itself rather than the stocks, species or ecosystem. Therefore, <b>SG100 cannot be met.</b> (...)</p> <p>All SG60 and SG80 were met, and 0 out of 1 SG100 were met. PI 3.2.1 score: 80 (Both IATTC and WCPFC)</p>	
<p>PI 3.2.2. Decision making processes ISSF agrees with Peer Reviewer 1's suggestion to add a condition on this PI, as has been done for other similar fisheries like those referenced by PR1. Furthermore, the CAB for the <a href="#">New Zealand South Pacific Albacore fishery</a> (a troll fishery) revised the score for PI 3.2.2 from 85 to 75 and set a condition for this PI at its <a href="#">1<sup>st</sup> Surveillance audit</a> in February 2018. The audit report states that "WCPFC's lack of responsiveness to declining albacore catches is considered an 'important' issue, and the SG 80 is not met. The issue was discussed with all CABs involved in WCPFC MSC fisheries, and it was agreed that a condition was appropriate</p>	<p>Although the decision-making processes are in place that respond to serious issues at both the national and international level, it is not clear that these processes respond to ALL issues for South Pacific albacore, nor is it evident that ALL these issues receive a response in a timely and adaptive manner. Actions have been proposed, but not yet adopted. Due to the overall lack of response from the WCPFC on the declining CPUE for SP albacore, decision-making processes fail to respond to <b>serious and other important issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner.</p> <p>The score was reduced to 75 with a required condition. This is in line with the recent determination for the New Zealand South Pacific albacore troll fishery.</p>
<p>Client Action Plan ISSF believes that the Conditions set for PIs 1.2.1 and 1.2.2 are adequate. However, we are concerned that the Client's Action Plan relies on actions to be performed by various national organizations (e.g. the West Coast Region of the National Marine Fisheries Service (NMFS), the Pacific Islands Regional Office of the NMFS, the Western Pacific Regional Fisheries Management Council (WPFMC)), but the PCDR contains no clear commitment from these organizations themselves. ISSF is concerned that, without such a letter, there is no clear expectation that the Client Action Plan will achieve its objectives. For your reference, please consult formal letters included in PCDRs or Final Reports for other tuna fisheries that have obtained MSC certification</p>	<p>The assessment team and CAB recognize a lack of formal commitment by parties required to take action within a client action plan can and at times has been, an impediment to realizing the implementation of the plan. However, in the current case, the agencies implicated have demonstrated through the past certifications their commitment to undertaking the actions assigned to them in relation to the conditions of this fishery. Therefore the assessment team was confident that the action plan is achievable and thus approved it. Note also it was subject to peer review and neither peer reviewer raised this concern in this particular instance. We will, of course, closely monitor progress against this condition through surveillance audits and in the event that milestones fall behind target, appropriate action will be taken per MSC requirements.</p>

<p>in recent years. These are formal letters from the corresponding national fisheries agency or ministry of fisheries, in which they state their conformity and commitment to the milestones and actions described in the Client's Action Plan (see for example the <a href="#">PCDR of the Fiji Albacore and Yellowfin Tuna Longline Fishery (Appendix 1.4, p.213)</a>, or the <a href="#">Final Report of the re-assessment of the Pole and Line Skipjack Fishery in the Maldives (Appendix 1.3.1, p.173)</a>).</p>	
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**Table 16. MSC Technical Oversight comments and CAB responses**

Page	Grade	RequirementVersion	OversightDescription	CABComment
47	Guidance	FCR_7.12.1.4 v2.0	Section 5.2 mentions transshipment may be permitted, however it is then stated in Table 4 it is not a risk. Please clarify why, and if useful, also describe measures to track transshipment when it does occur. In addition, 'non-AAFA & non-WFOA members' were identified but it is unclear if there is a risk of mixing between certified and non-certified product. For example, the possibility of vessels outside the UoA landing non-MSC albacore at the same port as AAFA & WFOA members? It is important to evaluate every risk and clearly describe the mitigation measures to prevent product substitution.	The risk table has been updated to explicitly note that transshipment very rarely occurs (if ever) and if it does there is a requirement for full catch documentation to accompany the product, therefore the traceability risk is very low (but not non-existent).
47	Minor	FCR_7.12.1.5.b v2.0	Please identify the point of intended change of ownership of eligible product	A sentence has been added at the end of section 5.3 indicating the usual means through which eligible product changes ownership. The eligibility statement has been amended as well to read: Fishery product are covered by the fishery certificate "up to the point of landing or sale, whichever comes first" (highlighted section indicates the change). This should remove the need to be more specific about

				where sale occurs relative to landing in every situation.
46	Guidance	FCR_7.12.1.1 v2.0	Please describe the system to track and trace product sold as MSC back to the UoC. Table 4 states there are various coding, recording, monitoring, tracking and tracing systems in place to prevent mixing, what exactly is being tracked and how? Is it VMS, log book, labelling? Useful to describe so risk mitigation is better understood.	A more thorough description of the tracking and tracing systems back to the UoC has been added to the third paragraph before Table 4 (now Table 9) on page 46.

## Appendix 4 Surveillance Frequency

**Table 4.1 : Surveillance level rationale**

Year	Surveillance activity	Number of auditors	Rationale
1	On-site audit (TBD)	TBD	It is unknown at this point the extent to which information can be verified remotely or whether it would be useful to hold surveillance audits commensurately with RFMO or other meetings at which the fishery representatives and other stakeholders may be present.
2	On-site audit (TBD)	TBD	It is unknown at this point the extent to which information can be verified remotely or whether it would be useful to hold surveillance audits commensurately with RFMO or other meetings at which the fishery representatives and other stakeholders may be present.
3	On-site audit (TBD)	TBD	It is unknown at this point the extent to which information can be verified remotely or whether it would be useful to hold surveillance audits commensurately with RFMO or other meetings at which the fishery representatives and other stakeholders may be present.
4	On-site audit with reassessment site visit	3	

**Table 4.2: Timing of surveillance audit**

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
1	TBD	1 <sup>st</sup> Anniversary or timed together with NP Albacore surveillance	The NP and SP Albacore certifications are held by the same clients though the timing of the reassessments has become unsynchronized. It is planned that annual audits will still be held together for efficiency.
2		2 <sup>nd</sup> Anniversary or timed together with NP Albacore surveillance	The NP and SP Albacore certifications are held by the same clients though the timing of the reassessments has become unsynchronized. It is planned that annual audits will still be held together for efficiency.
3		3 <sup>rd</sup> Anniversary or timed together with NP Albacore surveillance	The NP and SP Albacore certifications are held by the same clients though the timing of the reassessments has become unsynchronized. It is planned that annual audits will still be held together for efficiency.
4		4 <sup>th</sup> Anniversary or timed together with NP Albacore surveillance	The NP and SP Albacore certifications are held by the same clients though the timing of the reassessments has become unsynchronized. It is planned that annual audits will still be held together for efficiency.

**Table 4.3: Fishery Surveillance Program**

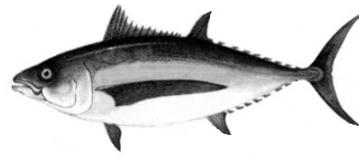
Surveillance Level	Year 1	Year 2	Year 3	Year 4

Level 5	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit	On-site surveillance audit & re-certification site visit
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## **Appendix 5 Objections Process**

No objections were received.

# **WESTERN FISHBOAT OWNERS ASSOCIATION**



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November 8, 2018

Amanda Stearns - Pirlot  
Director Fisheries Certification  
MRAG America's - Seattle  
1631 15<sup>th</sup> Ave W. Suite 201  
Seattle, WA 98119

Re: South Pacific Albacore PCR Acceptance

Dear Amanda,

WFOA received the Public Certification Report (PCR) for the U.S. South Pacific Albacore Fishery. On behalf of WFOA which is a client for the Marine Stewardship Council's (MSC) certification of US South Pacific Albacore fishery I have reviewed the PCR and accepted it as evidence that the fishery has met the MSC standards as a well managed and sustainable fishery.

WFOA also wishes to thank the staff of MRAG for completing this lengthy and somewhat frustrating process and look forward to moving ahead in the next few years under this re-certification. The certification is important to many of our fishermen and processors who have developing markets for MSC albacore tuna from the US.

Sincerely,

A handwritten signature in blue ink that reads "Wayne Heikkila". The signature is written in a cursive, flowing style.

Wayne Heikkila  
Executive Director