# P1 ASSESSMENT UPGRADE TO MSC FCR V2.0 FOR THE NORTH ATLANTIC ALBACORE ARTISANAL FISHERY

Illustration taken from: http://zallo.com/es/blog

## Public Certification Report

**DECEMBER 2019**

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|---|---|
| Conformity Assessment Body (CAB) | Bureau Veritas Certification Holding SAS |
| Assessment team | Carola Kirchner<br>Jose Ríos |
| Fishery client | OPEGUI, OPESCAYA, OPACAN |
| Assessment Type | Principle 1 v2.0 Assessment upgrade process |

# 1 Contents

# 2 Glossary

| | |
|---|---|
| **$B_{lim}$** | Limit reference point for stock biomass. |
| **$B_{MSY}$** | Biomass that enables a fish stock to deliver the Maximum Sustainable Yield |
| **BV** | Bureau Veritas |
| **CPCs** | Contracting Parties, Cooperating non-Contracting Parties, Entities or Fishing Entities |
| **EC** | European Commission |
| **EU** | European Union |
| **$F_{MSY}$** | Fishing Mortality at Maximum Sustainable Yield |
| **FCP** | (MSC) Fisheries Certification Process (V2.1) |
| **FCR** | (MSC) Fisheries Certification Requirements (V2.0) |
| **HCR** | Harvest Control Rules |
| **ICCAT** | The International Commission for the Conservation of Atlantic Tuna |
| **MSC** | Marine Stewardship Council |
| **MSY** | Maximum Sustainable Yield. The largest average catch or yield that can continuously be taken from a stock under existing environmental conditions |
| **OPACAN** | Producer's organization of coastal fisheries from Cantabria (Organización de productores artesanales de Cantabria) |
| **OPEGUI** | Producer's organization of coastal fisheries from Guipuzcoa (Organización de productores de pesca de bajura de Guipuzcoa) |
| **OPESCAYA** | Producer's organization of coastal fisheries from Bizkaia (Organización de Productores de pesca de bajura de Bizkaia) |
| **PCR** | (MSC) Public Certification Report |
| **SA** | (MSC) Surveillance Audit |
| **SCRS** | ICCAT Standing Committee on Research and Statistics |
| **SGAORP** | Spanish Sub-directorate for Fisheries Agreements and Regional Fisheries Management Organizations (Subdirección General de Acuerdos y Organizaciones Regionales de Pesca) |
| **SGCI** | Spanish Sub-directorate for Fisheries Control and Inspection (Subdirección General de Control e Inspección) |
| **SGP** | Spanish General Secretariat for Fisheries (Secretaría General de Pesca) |
| **SSB** | Spawning stock biomass. Total weight of all sexually mature fish in the stock |
| **$SSB_{MSY}$** | Spawning-stock Biomass at Maximum Sustainable Yield |
| **TAC** | Total Allowable Catch |
| **UoA** | Unit of Assessment |
| **UoC** | Unit of Certification |
| **VR** | Variation Request (addressed to MSC) |

# 3 Executive summary

This Public Certification Report (PCR) provides details to the client, peer reviewers, stakeholders and general public on the results of the P1 assessment upgrade for the North Atlantic albacore fishery. The assessment team has addressed the stakeholder comments and modified the PCDR accordingly in order to elaborate the current Final Draft Report (FR), which was published at the MSC website for a 15-day (UK working days) objection period. Since no objections were presented, the team modified the FR into the PCR for its publication at the MSC website.

This report was prepared by Bureau Veritas Iberia. The assessment team for this fishery was comprised of Carola Kirchner who was mainly responsible for assessing Principle 1 and José Ríos who was mainly responsible for acting as team leader and ensure compliance with the Fisheries Certification Process.

This fishery got the MSC certification on the 7th of June 2016. This fishery was assessed against version 1.3 of the MSC Certification Requirements and using version 1.3 of the MSC Full Assessment Reporting Template. The fishery has recently finished its third surveillance audit (click here[1] to download the 3rd surveillance report handed in August 2019).

[1] https://fisheries.msc.org/en/fisheries/north-atlantic-albacore-artisanal-fishery/@@assessments

In accordance with the combined tuna fishery variation request accepted by MSC on February 2019 (click **here** to download the VR and the MSC response), Bureau Veritas has undertaken a Principle 1 v2.0 assessment upgrade. The process followed for this assessment upgrade follows the requirements set out in Appendix B of the MSC's VR response. A remote visit was performed during the third week of August as part of the P1 assessment upgrade process and the regular surveillance audit (see **section 8.2.1** for more details on the meetings held).

In accordance with Appendix B, as part of the P1 assessment upgrade the CAB shall produce the following reports:

a) Client and Peer Review Draft Report
b) Public Comment Draft Report
c) Final Draft Report
d) Public Certification Report

The content of these reports shall be limited to:

- ✓ Sections 1 to 5 of the MSC Reporting Template, limited to P1
- ✓ Section 7.1 (limited to P1) and Section 7.2 of the MSC Reporting Template
- ✓ Section 8 of the MSC Reporting Template

A description of the harmonisation activities implemented as part of this P1 assessment upgrade are described in **section 8.8**.

Main findings from this surveillance audit are summarized below:

- The PRI is set to be at $B_{Lim}=0.4B_{MSY}$. The stock in 2015 was estimated to be 3.4 times that of $B_{Lim}$.
- The fishing mortality must be below $0.8F_{MSY}$ and it has been estimated (with 80% confidence intervals) to be 0.54(0.35-0.72),
- The stock is above the MSY; $B_{2015}/B_{MSY}=1.36$ (1.05-1.78).
- The stock is not overfished and overfishing is not happening. The probability of this stock to be in the red quadrant of the Kobe plot is 0%. Catches have been below the TAC and the MSY since 2016 therefore it is expected that the biomass level improved somewhat since the last assessment.
- In 2017, MSE results highlighted that the implementation of any of the tested HCRs would meet the objective to be in the green quadrant of the Kobe plot (with a probability higher than 60%),In 2017 harvest control rules have been implemented
- Data availability for the northern albacore is the best for all Atlantic tuna species, scoring 7/10; hence excellent.
- Several stock assessment model formulations (MFCL, SS3, VPA and ASPIC) with varying degrees of complexity with different hypothesis and a range of uncertainties were used to support the results obtained from the current assessment model (Biodyn).
- The assessment was reviewed internally and externally.

Since all Scoring Issues score meet SG60 level and the weighted average score for all PIs under P1 is above 80, the assessment team found that **the fishery complies with the MSC-Fisheries Requirements (FCR v2.0) for Principle 1**. **Thus, the determination of both the team and Bureau Veritas is for the MSC-fishery certificate to remain active. No conditions were set** (all SI meet SG80 level)**. No recommendations were set either. This is the final certification result.**

# 4 Report details

## 4.1 Authorship and peer review details

The BV assessment team comprised of:

**Dr. CAROLA KIRCHNER**. Dr Kirchner has been working in the field of fisheries for the last 24 years. Her highest qualification is a PhD. Her PhD focussed on the population dynamics and stock assessment of a linefish species. She also completed her MBA part-time through the University of Cape Town. Her research thesis focused on the Namibian hake fishery, where she not only indicated areas of resource rent loss, but also presented a new method of providing bio-economic advice to the fishing industry and

management. Included in the thesis was an evaluation of Namibia's post-independence fisheries policies. Dr Kirchner worked for the Ministry of Fisheries in Namibia for 18 years, where she was responsible for the stock assessment and management advice for most commercial species (eg. Hake, Horse mackerel and Sardine). These fisheries differ vastly, from long-lived species (Orange roughy) to the short-lived Sardine. Also, different gear types were used between these fisheries; bottom trawl, purse-seine and handline. Dr Kirchner has over the years built up international relationships, for example she was involved in the stock assessment and management of southern Atlantic Albacore tuna through ICCAT. Further, she worked for two years in the stock assessment and modelling section of the Secretariat of the Pacific Community (SPC). There, her main role was to support the Parties of the Nauru agreement (PNA) members to maintain the compliance to the MSC certification, by evaluating reference points and harvest control rules. In addition, she was working on a regional bio-economic model that aims to evaluate and optimize the various fishing activities and includes all four major tuna resources in the Pacific as in Skipjack, Yellowfin, Bigeye and Albacore tuna.

Her 18 years at the Ministry of Fisheries and Marine Resources of Namibia and her work at the Secretariat of the Pacific Community ensure that she meets the qualification and competency criteria established in PC3 on (i) fish stock assessment, (ii) fish stock biology and (iii) fishing impacts on aquatic ecosystem. Furthermore, her experience in Namibian fisheries administration supports the qualification and competency criteria established in PC3 for (iv) fishery management and operations.

**For this P1 assessment upgrade her main responsibilities will be assessing Principle 1. She has not a conflict of interest for this fishery**.

**JOSE RIOS**, holds a degree in Sea Sciences from the University of Vigo and an MSc in Fisheries and Aquaculture from the University of Wales-Bangor. He has more than 15 years of experience working in fisheries from different angles and places around the world. In 1999 he worked at the ICM-CSIC on trophic ecology of demersal fish species and participated in different research cruises on board the r/v Garcia del Cid. In 2001/02 he was hired by the University of Azores as observer and fisheries inspector assessing an experimental fishing license for Orange roughy. Between 2003 and 2010 he was responsible for designing and monitoring fisheries management plans for several marine resources (clams, cockles and barnacles) for the Regional Fisheries Authority of Galicia (Spain). In 2008-09 he developed and implemented a scientific monitoring scheme for an experimental octopus fishery in the waters of Namibia (IIM-CSIC). Between 2008 and 2012, as part of different projects funded by the Spanish International Cooperation Agency (AECID), he supported local fisheries and aquaculture management bodies to strengthen organizational and managing capacities of the fishing and rural aquaculture sector in Namibia, Cape Verde, Colombia and Mozambique. Since 2013, as part of the fisheries team of WWF Spain, he promoted different initiatives to improve fisheries management in coastal Spanish fisheries. As the WWF representative in fisheries co-management committees, he took part in the daily management of the following coastal fisheries in the Spanish Mediterranean: Catalan sandeel, Balearic boat seines, and Palamós red shrimp. Since April 2016 he is a full-time employee at Bureau Veritas Fisheries Department and he has participated in several MSC fisheries assessments and surveillance audits.

His 7 years in charge of designing and monitoring fisheries management plans for the exploitation different marine resources in Galicia, together with his experience on trophic ecology of demersal fish species in the Mediterranean (ICM-CSIC), his work with the University of Azores assessing an experimental fishing license for Orange roughy in the Azores islands, and his experience designing and monitoring an experimental fishing license for octopus in Namibia (IIM-CSIC) ensure he meets qualification and competency criteria established in PC3 for (i) Fishing impacts on aquatic ecosystems. Also, his 3 years of experience as a practicing fishery manager as a WWF representative in 3 Mediterranean fisheries, together with his 7 years of experience participating in the implementation of fisheries management plans in Galicia and his experiences assessing experimental fishing licenses in the Azores and Namibia ensure he meets qualification and competency criteria established in PC3 for (ii) Fishery management and operations.

**For this P1 assessment upgrade his main responsibility will be acting as team leader and ensure compliance with FCP. He has not a conflict of interest for this fishery**.

The MSC's Peer Review College compiled a shortlist of potential peer reviewers to undertake the peer review for this fishery. The shortlisted reviewers can be consulted at the MSC website (click **here** to download the list).

## 4.2 Version details

Details on the version of the fisheries program documents used for this assessment are presented in **Table 4-1**, as required in the 'MSC Surveillance Reporting Template v2.01'.
The process requirements to be followed by CABs to upgrade Principle 1 assessments of tuna fisheries currently assessed against v1.3 of MSC Fisheries Standard are detailed in Appendix B of the MSC response to the combined tuna fishery variation request (available here). This process is only applicable to the combined tuna fishery variation request, submitted 11 December 2018. This process is adapted from FCP v.2.1 7.27 and Annex PE (scope extensions).

**Table 4-1.** Details on the versions of the fisheries program documents used for this assessment

| Document | Version number, date of publication (and date effective) |
|---|---|
| MSC Fisheries Certification Process | Version 2.1, 31 August 2018 (28 February 2019)[2]. |
| MSC Fisheries Standard | Version 2.0, 1st October 2014 (1st April 2015) |
| MSC General Certification Requirements | Version 2.3, 31 August 2018 (28 February 2019) |
| MSC Surveillance Reporting Template | Version 2.01, 28th March 2019 (28th March 2019) |

# 5 Unit(s) of Assessment and Certification and results overview

## 5.1 Unit(s) of Assessment and Unit(s) of Certification

### 5.1.1 Unit(s) of Assessment

During the initial assessment BV found that the fishery was within the scope of the MSC Fisheries Standard (Garcia et al, 2016). Also, the UoAs and UoCs identified during the initial assessment are still valid for this P1 assessment upgrade. The only modification compared to the initial assessment is the inclusion in the client group of fleets from Cantabria and Asturias. Gap analyses were performed at different stages during the first certification period in order to include these fleets. A separated list of vessels is regularly updated and published at the MSC website. The latest update of the list (August 2019) amounts to 164 vessels (113 trollers and 51 bait boats). **Table 5-1** presents the details of the two UoAs.

**Table 5-1.** Units of Assessment (UoAs)

| UoA 1 | Description |
|---|---|
| Species | Albacore (*Thunnus alalunga*) |
| Stock | North Atlantic albacore |
| Geographical area | Bay of Biscay and adjacent North Atlantic waters (approximately up to 42º N and 20ºW). Occasionally reaching international waters. FAO 27 |
| Harvest method / gear | Trolling |
| Client group | The client group is encompassed by the fishermen producer organizations from the Basque country (OPEGUI and OPESCAYA) and Cantabria (OPACAN) and the trade company ruling the fish auction in Aviles, Asturias (NUEVA RULA DE AVILES). The vessel list being regularly updated (August 2019) includes a total of 113 trollers . The vessel list is available at the MSC website (click here to download the vessel list). |
| Other eligible fishers | No other eligible fishers |
| UoA 2 | Description |

[2] Process described in Appendix B of the MSC response to the combined tuna fishery variation request is adapted from FCP v.2.1

| | |
|---|---|
| Species | Albacore (*Thunnus alalunga*) |
| Stock | North Atlantic albacore |
| Geographical area | Bay of Biscay and adjacent North Atlantic waters (approximately up to 42º N and 20ºW). Occasionally reaching international waters. FAO 27 |
| Harvest method / gear | Pole and line |
| Client group | The client group is encompassed by the fishermen producer organizations from the Basque country (OPEGUI and OPESCAYA) and Cantabria (OPACAN) and the trade company ruling the fish auction in Aviles, Asturias (NUEVA RULA DE AVILES). The vessel list being regularly updated (August 2019) includes a total of 51 bait boats. The vessel list is available at the MSC website (click here to download the vessel list). |
| Other eligible fishers | No other eligible fishers |

### 5.1.2 Unit(s) of Certification

The unit of assessment (UoA) defines the full scope of what is being assessed and is therefore equal to or larger than the UoC. If it is larger this means it will include “other eligible fishers”. As in this case there are no other eligible fishers (see above), the UoCs are equal to the UoAs presented above. **Table 5-2** presents the two UoCs for this fishery.

**Table 5-2.** Units of Certification (UoCs)

| UoC 1 | Description |
|---|---|
| Species | Albacore (*Thunnus alalunga*) |
| Stock | North Atlantic albacore |
| Geographical area | Bay of Biscay and adjacent North Atlantic waters (approximately up to 42º N and 20ºW). Occasionally reaching international waters. FAO 27 |
| Harvest method / gear | Trolling |
| Client group | The client group is encompassed by the fishermen producer organizations from the Basque country (OPEGUI and OPESCAYA) and Cantabria (OPACAN) and the trade company ruling the fish auction in Aviles, Asturias (NUEVA RULA DE AVILES). The vessel list being regularly updated (August 2019) includes a total of 113 trollers . The vessel list is available at the MSC website (click here to download the vessel list). |
| **UoC 2** | **Description** |
| Species | Albacore (*Thunnus alalunga*) |
| Stock | North Atlantic albacore |
| Geographical area | Bay of Biscay and adjacent North Atlantic waters (approximately up to 42º N and 20ºW). Occasionally reaching international waters. FAO 27 |
| Harvest method / gear | Pole and line |
| Client group | The client group is encompassed by the fishermen producer organizations from the Basque country (OPEGUI and OPESCAYA) and Cantabria (OPACAN) and the trade company ruling the fish auction in Aviles, Asturias (NUEVA RULA DE AVILES). The vessel list being regularly updated (August 2019) includes a total of 51 bait boats. The vessel list is available at the MSC website (click here to download the vessel list). |

## 5.2 Assessment results overview

### 5.2.1 Determination, formal conclusion and agreement

Since all Scoring Issues score meet SG60 level and the weighted average score for all PIs under P1 is above 80, the assessment team found that **the fishery complies with the MSC requirements (FCR v2.0) for Principle 1**. **Thus, the determination of both the team and Bureau Veritas is for the MSC-fishery certificate to remain active. No conditions were set** (all SI meet SG80 level)**. No recommendations were set either. This is the final certification result**

### 5.2.2 Principle 1 score

**Table 5-3** shows overall P1 scores for each UoC after current P1 assessment upgrade, together with previous scores at the initial assessment and after surveillance audit carried out in 2018.

**Table 5-3.** Average scores for each MSC Principle as published in the PCR, after SA carried out in 2018 and after current P1 assessment upgrade.

| Principle | UoC 1 (Troll) | | | UoC 2 (Pole & line) | | |
|---|---|---|---|---|---|---|
| | PCR | 2SA | P1 upgrade | PCR | 2SA | P1 upgrade |
| **Principle 1** | 85 | 89,4 | **90,8** | 85 | 89,4 | **90,8** |

### 5.2.3 Summary of conditions

No conditions were raised as a result of current P1 assessment upgrade.

### 5.2.4 Recommendations

No recommendations were raised as a result of current P1 assessment upgrade.

# 6 Traceability and eligibility

No applicable for P1 assessment upgrade process, according to Appendix B of the MSC response to the combined tuna fishery variation request, as explained in **Section 3**.

# 7 Scoring

## 7.1 Summary of Performance Indicator level scores

**Table 5-3** shows P1 performance indicatore level scores after current process.

**Table 7-1.** PIs scores of the certified fishery after current P1 assessment upgrade

| | Component | PI No. | Performance Indicator (PI) | UC1 (Troll) | UC2 (Pole & Line) |
|---|---|---|---|---|---|
| P1 | Outcome | 1.1.1 | Stock status | 95 | 95 |
| | | 1.1.2 | Stock rebuilding | N/A | N/A |
| | Management | 1.2.1 | Harvest strategy | 100 | 100 |
| | | 1.2.2 | Harvest control rules & tools | 80 | 80 |
| | | 1.2.3 | Information & monitoring | 80 | 80 |
| | | 1.2.4 | Assessment of stock status | 95 | 95 |

## 7.2 Principle 1

### 7.2.1 BACKGROUND: P1

#### 7.2.1.1 Biology (ICCAT, 2018)

Albacore is a temperate tuna widely distributed throughout the Atlantic Ocean and Mediterranean Sea. On the basis of the biological information available for assessment purposes, the existence of three stocks is assumed: northern and southern Atlantic stocks (separated at 5ºN) and a Mediterranean stock. However, some studies support the hypothesis that various sub populations of albacore exist in the North Atlantic and Mediterranean. Likewise, there is likely intermingling of Indian Ocean and South Atlantic immature albacore which needs further research.

Scientific studies on albacore stocks, in the North Atlantic, North Pacific and the Mediterranean, suggest that environmental variability may have a serious potential impact on albacore stocks, affecting fisheries by changing the fishing grounds, as well as productivity levels and potential MSY of the stocks. Those yet sufficiently unexplored aspects might explain recently observed changes in fisheries, such as the lack of availability of the resource in the Bay of Biscay in some years, or the apparent decline in the estimated recruitment which are demanding focussed research.

The expected life-span for albacore is around 15 years. While albacore is a temperate species, spawning in the Atlantic occurs in tropical waters. Present available knowledge on habitat, distribution, spawning areas and maturity of Atlantic albacore is based on limited studies, mostly from past decades. Biological parameters and conversion factors for the North Atlantic albacore stock used within the stock assessment are presented in **Table7-1**.

**Table 7-1**. Biological parameters and conversion factors for the North Atlantic albacore stock used within the stock assessment (ICCAT, 2016a)

| *North Stock* | *Parameters* | *Source* |
|---|---|---|
| Growth | $L\infty = 122.198$cm; $k = 0.21$; $t_0 = -1.338$ | Santiago and Arrizabalaga, 2005 |
| | $L\infty = 124.74$cm; $k = 0.23$; $t_0 = -0.9892$ | Bard, 1981 |
| Length-weight relationship | $a=1.339 \times 10^{-5}$ $b=3.1066$ | Santiago, 1993 |
| Maturity | 50% of mature fish at 90 cm (age 5) | Bard, 1981 |
| Natural mortality | $M = 0.3$ per year | |
| M at age (1 to 15) | 0.63; 0.46; 0.38; 0.34; 0.31; 0.29; 0.31; 0.34; 0.38; 0.44; 0.55; 0.55; 0.55; 0.55; 0.55 | Anon., 2010 |

### 7.2.1.2 Description of fisheries or fishery indicators (ICCAT, 2018)

The northern stock is exploited by surface fisheries targeting mainly immature and sub-adult fish (50 cm to 90 cm FL) and longline fisheries targeting immature and adult albacore (60 cm to 130 cm FL). The main surface fisheries are carried out by EU fleets (Ireland, France, Portugal and Spain) in the Bay of Biscay, in the adjacent waters of the northeast Atlantic and in the vicinity of the Canary and Azores Islands in summer and autumn. The main longline fleet is the Chinese Taipei fleet which operates in the central and western North Atlantic year round. However, Chinese Taipei fishing effort decreased in the late 1980s due to a shift towards targeting on tropical tuna, and then continued at this lower level to the present. Over time, the relative contribution of different fleets to the total catch of North Atlantic albacore has changed, which resulted in differential effects on the age structure of the stock. Since the 1980s, a reduction of the area fished for albacore was observed for both longline and surface fisheries.

Total reported landings, steadily increased since 1930 to peak above 60,000 t in the early 1960s, declining afterwards, largely due to a reduction of fishing effort by the traditional surface (troll and baitboat) and longline fisheries (**Figure 7-1**). Some stabilization was observed in the 1990s, mainly due to increased effort and catch by new surface fisheries (driftnet and mid-water pair pelagic trawl), with a maximum catch in 2006 of 36,989 t and, since then, a generally decreasing trend of catch is observed in the North Atlantic.

The preliminary total reported catch in 2017 was 28,310 t (above the TAC of 28,000 t), and the catch in the last five years has remained about 27,000 t, above the historical minimum of around 15,000 t recorded in 2009. During the last years, the surface fisheries contributed to approximately 80% of the total catch. The reported catch for 2016, when compared with the average of the last five years, was similar for EU-Spain, EU-Ireland and EU-France

Longline catch contributed to approximately 20% of the total catch during the last five years. During the last decades, both Chinese Taipei and Japan have reduced their fishing effort directed to albacore. In the case of Japan, albacore was taken mainly as by-catch. The catch reported in 2016 for Japan was below the last 5-year average, while for Chinese Taipei it was similar. The trend in mean weight for northern albacore remained stable between 1975 and 2014, ranging between 7 and 11 kg. The mean weight for surface fleets (baitboat and troll) showed a stable trend with an average of 7 kg (range of 4 to 10 kg), and for longline fleets it showed no clear trend with an average of 19 kg, but some important fluctuations between 15 and 26 kg since the 1990.

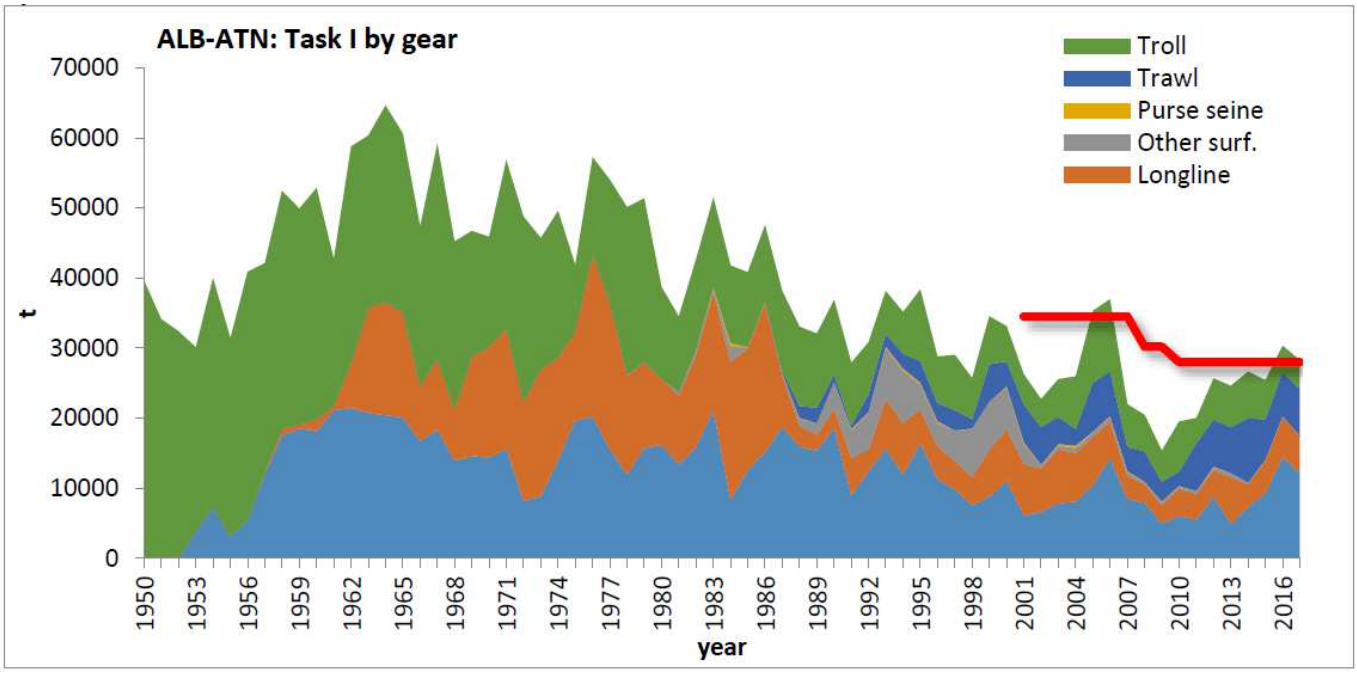


**Figure 7-1.** Total albacore catches reported to ICCAT (Task I) by gear for the northern Atlantic stock including TAC's (red line). (ICCAT, 2018)

### 7.2.1.3 State of stocks (ICCAT, 2018)

In the 2013 stock assessment, several model formulations (Multifan-CL, Stock Synthesis, VPA and ASPIC) with varying degrees of complexity were used. This allowed the modelling of different scenarios that represented different hypotheses, and the characterization of the uncertainty around the stock status. The results showed that although the range of estimated management benchmarks was relatively wide, most models were in agreement that the stock was overfished, and no model indicated that the stock was undergoing overfishing. These models from all the various platforms showed a general drop in stock biomass from 1930 to about 1990 and an increasing trend in biomass starting in around 2000. Likewise, most models within all configurations showed a peak in fishing mortality in around 1990 with a decreasing trend thereafter. The analyses conducted in 2013 involved a large amount of data preparation and scrutiny, and the Committee suggested that future assessment updates could be conducted using simpler models (e.g. production models).

Thus, in 2016 a production model was used to assess the stock status. A thorough revision of North Atlantic Task I data was conducted and catch rate analyses were improved and updated with new information for the northern albacore fisheries. Decisions on the final specifications of the base case model were guided by first principles (e.g. knowledge of the fisheries) and data exploration (e.g. correlation between indices). The results of these efforts are reflected in the following summaries of stock status that analysed data through 2014.

Four longline and one bait boat CPUE indices were selected to be used in a production model framework. It was assumed that different CPUE series reflected local abundance available to different fleets operating in different areas, and that overall they represented the global population trend. On this basis, the 5 CPUEs were equally weighted and used jointly in the base case scenario. Despite their variable pattern, these indices showed an overall increasing trend towards the end of the time series (**Figure 7-2**), which could be reflecting the increasing trend of the stock during this period of relatively low catch. The Chinese Taipei longline index showed the steepest increase during the last years of the series.

The biomass dynamic model results for the base case suggest a biomass drop between 1930 and the 1990s and a recovery since then, while fishing mortality decreases. Relative to MSY benchmarks, the base case scenario estimates that the stock remained slightly overfished with B below $B_{MSY}$ during the 1980s and 1990s, but now has recovered to levels well above $B_{MSY}$ (**Figure 7-3**). Peak relative fishing mortality levels in the order of 1.4 were observed in the early 1980s but overfishing stopped in the 1990s, current $F_{2014}/F_{MSY}$ ratio being 0.54. The uncertainty around the current stock status has a clear shape determined by the strong correlation between parameters estimated by the production model.

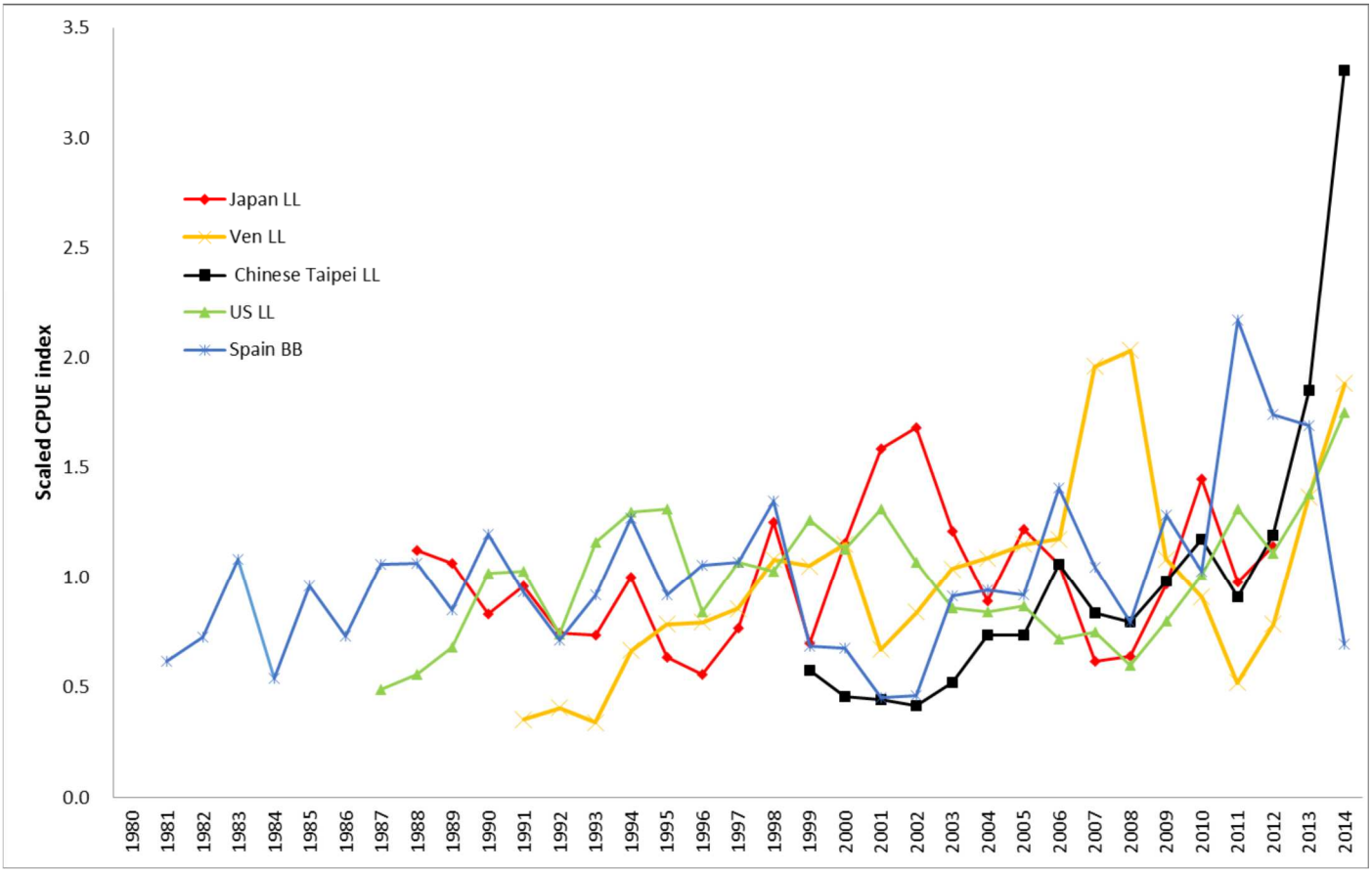


**Figure 7-2**. North Atlantic albacore. Standardized catch rate indices used in the 2016 stock assessment from the surface fisheries, which take mostly juvenile fish, and from the longline fisheries, which take mostly adult fish, (ICCAT, 2018).

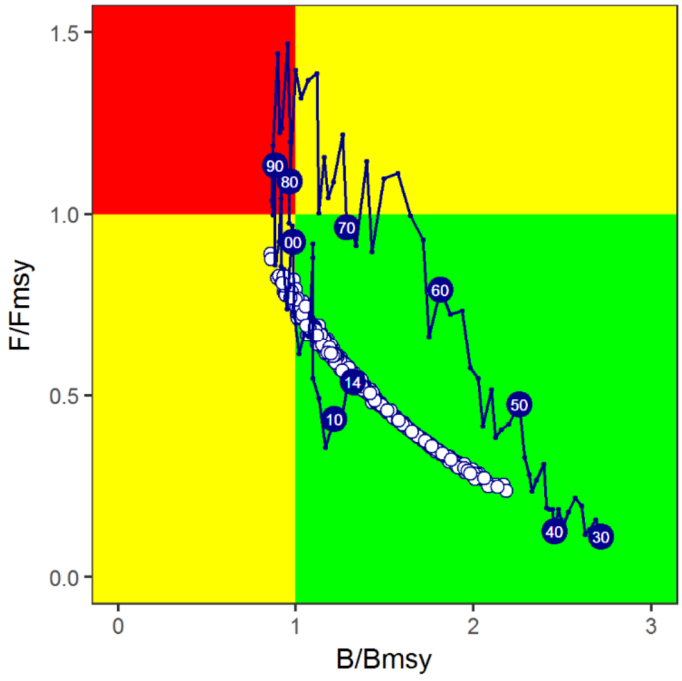


**Figure 7-3**. North Atlantic albacore. Joint trajectories of $B/B_{MSY}$ and $F/F_{MSY}$ over time (1930-2014) and current stock status according to the Base Case biomass dynamic model. Dots represent the uncertainty on the estimated 2014 stock status, (ICCAT, 2018).

The probability of the stock currently being in the green area of the Kobe plot (not overfished and not undergoing overfishing, $F<F_{MSY}$ and $B>B_{MSY}$) is 96.8% while the probability of being in the yellow area (overfished, $B<B_{MSY}$) is 3.2%. The probability of being in the red area (overfished and undergoing overfishing, $F>F_{MSY}$ and $B<B_{MSY}$) is 0%.

Sensitivity analyses revealed that recent stock status indicators are sensitive to different modelling assumptions as well as the choice of the CPUE series. When a logistic function was assumed in the biomass dynamic model lower values of $B/B_{MSY}$ were predicted over the whole time series, while excluding the Chinese-Taipei longline CPUE resulted in much larger values of $B/B_{MSY}$ in the recent period. Other sensitivity analyses did not show strong deviations from the base case. However, although the recent status varied across scenarios, all predicted the stock to be in the green quadrant. Finally, the Committee noted that the $B/B_{MSY}$ trajectory showed a strong retrospective pattern that might imply that the current stock status is overestimated, although all the retrospective trajectories showed an improvement in stock status in the most recent period. In summary, the available information indicates that the stock has improved and is most likely in the green area of the Kobe plot, although the exact condition of the stock is not well determined.

#### 7.2.1.4 Outlook (ICCAT, 2018)

In 2016, the estimated population was projected under both alternative TACs and HCRs, as combinations of target fishing mortality ($F_{TAR}$), threshold biomass ($B_{THRESH}$) and an interim biomass limit reference point ($B_{LIM}$) of 0.4 $B_{MSY}$. The projections assuming catch levels similar to those observed during the last five years (between 25,000 t and 30,000 t) or the current TAC (28,000 t) suggest that biomass would continue to increase and are likely sustainable. The new projections suggested higher sustainable catch levels compared to most of the previous assessments. However, the absolute biomass estimate might be questionable and the projections did not fully account for many other sources of uncertainty (i.e. model structure and assumptions) that need further evaluation. Thus, not much confidence can be given to the projections and the Kobe 2 Strategy Matrix therefore these analyses are not used for advice.

During 2017, the testing of candidate reference points (e.g., $SSB_{THRESHOLD}$, $SS_{BLIM}$ and $F_{TARGET}$) and associated harvest control rules (HCRs) that would support the management objective were refined, a set of alternative HCRs were tested by projecting a wide range of simulated albacore populations in a management strategy evaluation (MSE) framework. The MSE used was tailored specifically to support the process to discuss and eventually adopt an HCR for North Atlantic albacore in 2017 but not to provide TAC recommendation. As such, the simulated management procedure was consistent with the 2016 assessment approach, and thus it would be appropriate to apply it to the outcome of the 2016 stock assessment to set the TAC for the next three years.

Although a larger set of HCRs were tested, a reduced number of eight HCRs was finally considered. Eight HCRs are all the combinations of the following elements: two alternative target fishing mortalities (0.8 and 1 x $F_{MSY}$); two threshold biomasses (0.8 and 1 x $B_{MSY}$); and 2 stability clauses. The 2 stability clauses were: (SC1) maximum change in TAC of 20% always applied from one 3-year management period to the next while also always imposing a 15,000-50,000 t min-max TAC; and (SC2) same as (SC1) but not restricting TAC reductions and not imposing a minimum TAC when $B<B_{THR}$.

**Table 7-2** show the performance of 8 HCRs. The combination of the target fishing mortality ($F_{TARGET}$), Biomass threshold ($B_{THRESHOLD}$) and the type of stability clause defines the HCR. Two stability clauses were considered: (SC1) and (SC2).

**Table 7-2.** Performance of 8 HCRs, according to the performance statistics defined by Panel 2 (only one performance indicator per block is shown, which represents median values across 132 operating models). Each HCR has a unique identification number. pGR% = probability of being in the green quadrant of the Kobe plot; pBint% = probability of BTHRESHOLD>B>BLIM; LongY (kt) = mean yield for the period 2030-2045 in thousands of tons; MAP = mean absolute proportional change in catch. (ICCAT, 2018)

| HCR | | | | Stock Status | Safety | Catch | Stability |
|---|---|---|---|---|---|---|---|
| Number | Ftar | Bthresh | Stability clause | pGr% | pBint% | LongY (kt) | MAP (%) |
| 1 | 0,80 | 0,80 | SC2 | 85,5 | 9,0 | 26,5 | 8,3 |
| 2 | 1,00 | 0,80 | SC2 | 78,9 | 13,0 | 29,0 | 8,8 |
| 3 | 0,80 | 1,00 | SC2 | 88,6 | 8,3 | 26,9 | 8,3 |
| 4 | 1,00 | 1,00 | SC2 | 84,5 | 9,2 | 26,9 | 8,9 |
| 1 | 0,80 | 0,80 | SC1 | 85,8 | 9,3 | 32,1 | 5,6 |
| 2 | 1,00 | 0,80 | SC1 | 74,7 | 15,8 | 34,1 | 6,2 |
| 3 | 0,80 | 1,00 | SC1 | 86,0 | 10,4 | 32,2 | 6,0 |
| 4 | 1,00 | 1,00 | SC1 | 77,9 | 14,3 | 35,0 | 6,3 |

All HCRs tested met the objective to be in the green quadrant of the Kobe plot with a probability higher than 60% (**Table 7-2**). 96% of the OMs showed biomass above $B_{MSY}$ with 60% probability between 2020-2045. HCRs with higher target fishing mortalities ($F_{MSY}$) were associated with lower probabilities of being in the Kobe green quadrant, higher probabilities of the stock being between $B_{LIM}$ and $B_{THRESHOLD}$, and slightly higher long term yields. The different stability clauses had important effects on long term yield and stability. In SC1 (maximum change in TAC of 20% always allowed), higher stability and higher long term yields were achieved, compared to SC2 (**Table7-2**).

Whichever HCR was selected in 2017, its application will result in a short-term TAC of 33,600 t which results from the maximum 20% increase from the current level; this conforms to the positive stock status estimated in the 2016 assessment.

In 2018, the HCR adopted in Rec 17-04 was tested together with variants accounting for i) the carry over, ii) the effect of setting a lower TAC limit of 15,000t, iii) the effect of applying the 20% stability clause also when $B_{CUR}>B_{LIM}$ and $B_{CUR}<B_{THR}$, and iv) the effect of 20% maximum TAC reduction and 25% maximum TAC increase when $B_{CUR}>B_{LIM}$ and $B_{CUR}<B_{THR}$. Results indicate that the HCR adopted in 17-04 and its new variants achieve ICCAT's management objective of maintaining stocks in the green quadrant of the Kobe plot with at least 60% probability. Compared to a perfect implementation of the TAC, the carry over scenario (i) produced lower yield and stability, but better stock condition and safety. The carry over effect was tested assuming that historical differences between catch and TAC (Figure 1) would remain in the future. The three other scenarios (ii, iii, iv) led to more stability together with comparable yield and stock condition (**Figure 7-4**).

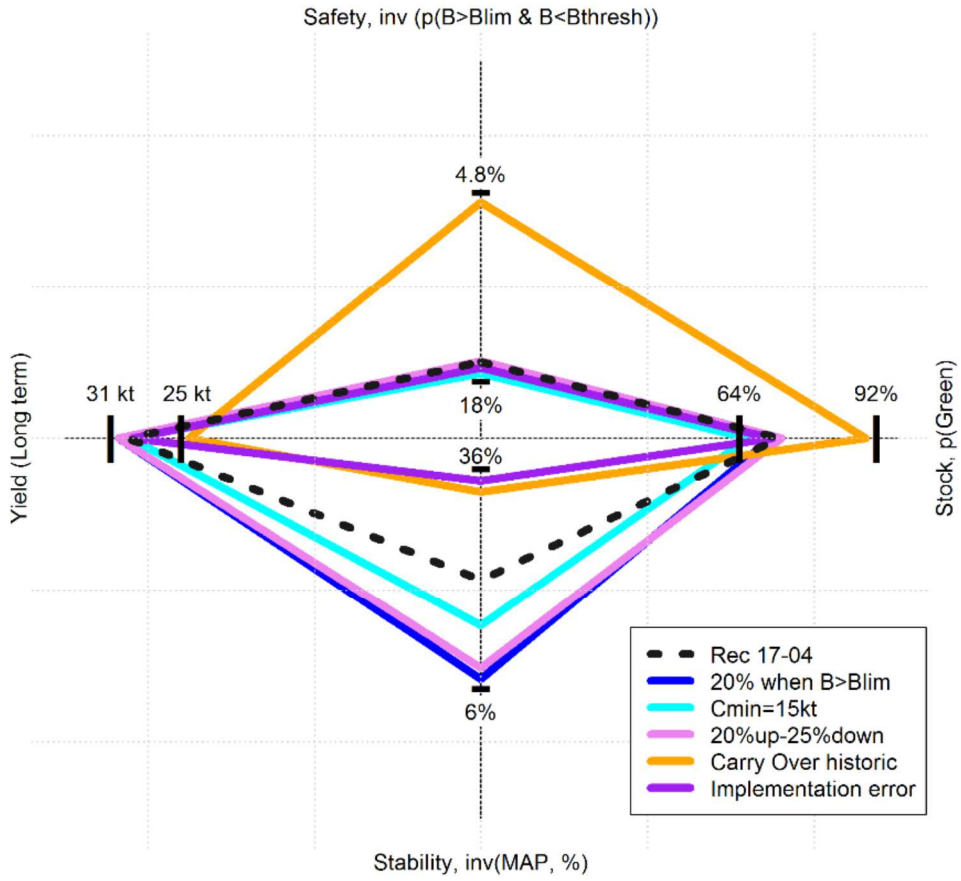


**Figure 7-4.** Spider plots representing the relative performance of the HCR adopted in Rec 17-04, as well as different variants, namely the effect of the carry over (orange), the effect of setting a lower TAC limit of 15,000t (light blue), the effect of applying the 20% stability clause also when $B_{CUR}>B_{LIM}$ and $B_{CUR}<B_{THR}$ (dark blue), and the effect of 25% maximum TAC reduction and 20% maximum TAC increase when $B_{CUR}>B_{LIM}$ and $B_{CUR}<B_{THR}$ (pink). The purple scenario represents an extreme scenario of imperfect implementation of the TAC. Source: ICCAT, 2018.

#### 7.2.1.5 Effect of current regulations (ICCAT, 2018a)

In 2017, the Commission adopted the interim HCR described in **Figure 7-5**, with a maximum TAC of 50,000 t and a maximum change of 20% when $B_{CUR}>B_{THR}$. Its application established a TAC of 33,600 t for 2018-2020 (ICCAT, 2017, Rec. 17-04) and the possibility to carry over some unused portions of the quotas to be caught later in time (ICCAT, 2016b, Rec. 16-06) remained. Since the establishment of the TAC in the year 2001, catch remained substantially below the TAC in all but four years (**Figure 7-1**), which might have accelerated rebuilding over the last decade. The bulk of the catch is caught by traditional surface fisheries operating in the Bay of Biscay and surrounding waters. Thus, it is likely that the fluctuations in catches reflect the fluctuations in the availability of the resource to those local regional fisheries, and the carry over allows to compensate the fleets for the years where the stock was less available.

Furthermore, a general decrease of fishing mortality on this stock is observed since the implementation in 1998 of ICCAT Rec 98-08 limiting fishing capacity to the average of 1993-1995.

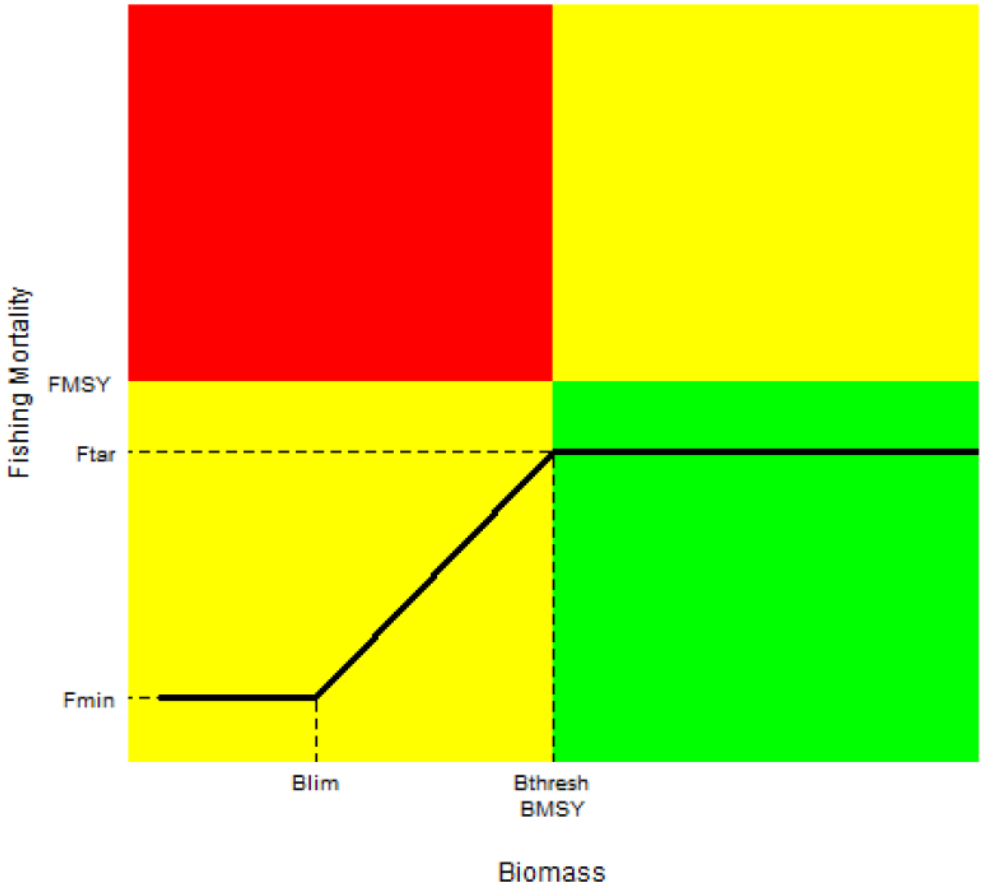


**Figure 7-5.** Graphic form of the HCR adopted in Rec 17-04. $B_{LIM}$ (set at $0.4B_{MSY}$) is the limit biomass reference point, $B_{THRESH}$ (set at BMSY) is the point below which fishing mortality decreases linearly, $F_{TAR}$ (set at $0.8F_{MSY}$) is the target fishing mortality rate to be applied to achieve the management objectives, and $F_{MIN}$ (set at $0.1F_{MSY}$) is the fishing mortality to be applied when $B<B_{LIM}$ (ICCAT, 2018).

#### 7.2.1.6 Management recommendations (ICCAT, 2018)

Estimated management quantities (median with 80% confidence intervals) are presented in **Table 7-3**. ICCAT, 2016, recommendation 16-06 sets the objective of maintaining the stock in the green area of the Kobe plot with a 60% probability while maximizing long-term yield, and, if $B<B_{MSY}$, to recover it as soon as possible, while maximizing average catch and minimizing inter-annual fluctuations in TAC levels.

In 2016, the relative abundance of north Atlantic albacore had continued to increase over the last decades and was likely somewhere in the green area of the Kobe plot. However, without additional information, the magnitude of the recovery was not well determined and remained sensitive to many different assumptions. This undermined the ability to reliably quantify the effects of future TAC or HCR scenarios on the status of the stock, until more sources of uncertainty and the robustness of the advice were evaluated in the future through MSE and/or benchmark stock assessment after accumulating sufficient new information. The projections assuming catch or TAC levels similar to those observed during the last five years (between 25,000 t and 30,000 t) suggested that biomass would continue to increase and are likely sustainable. However, the ability to monitor changes in stock abundance is currently limited due to incomplete fishery dependent information. Thus, it is desirable to pursue alternative fishery independent tools to provide improved bases for monitoring stock condition.

In 2017, MSE results highlighted that the implementation of any of the tested HCRs would meet the objective to be in the green quadrant of the Kobe plot (with a probability higher than 60%) (**Table 7-2**). In HCRs where maximum change in TAC of 20% is always applied (SC1), higher stability and higher long term yields were achieved, compared to HCRs where the 20% restriction for decrease is not used when $B<B_{THRESHOLD}$ (SC2). Not restricting TAC reductions improves safety and might allow quicker recoveries if the stock is really overexploited, but can also cause large unnecessary TAC reductions, or even fishery closures, when the stock is healthy but it is wrongly perceived to be overexploited.

In 2018, an external peer review was conducted and it confirmed that, overall, the MSE framework appears to be scientifically sound and robust to uncertainty, thus, the interim HCR in 2017 that led to a TAC of 33,600

t had a robust scientific basis. Likewise, the additional analyses conducted by the working group in 2018 are based on the same MSE framework and suggest that the Commission could adopt any of the variants (a, b or c) mentioned in Paragraph 16 of Rec 17-04, which would provide additional stability to the fisheries while meeting management objectives. However, the Committee noted that imposing the minimum TAC of 15,000 t would override the application of Paragraph 7.c of Rec. 17-04 (with current estimates of $B_{MSY}$, $F_{MSY}$ and MSY). Results also showed that this scenario scored lowest in stock status indicators. Finally, it should be noted that there is an extensive workplan to improve the MSE framework used in the evaluation of HCRs based on the recommendations of the external review.

**Table 7-3.** Northern Atlantic Albacore management quantities. (ICCAT, 2018)

| | North Atlantic |
|---|---|
| Maximum Sustainable Yield | 37,082 t (35,396-42,364)[1] |
| Current (2017) Yield | 28, 310 t |
| Yield in last year of assessment (2014) | 26,651 t |
| Yield in last year of assessment (2015) | |
| $B_{MSY}$ | 407,567 t (366,309-463,685) [1] |
| $F_{MSY}$ | 0.097 (0.079-0.109) [1] |
| $B_{2015}/B_{MSY}$ | 1.36 (1.05-1.78)[1] |
| $B_{2015}/B_{LIM}$[3] | 3.4 |
| $F_{2014}/F_{MSY}$ | 0.54 (0.35-0.72) [1] |
| $F_{2015}/F_{MSY}$ | |
| Stock Status | Overfished: NO |
| | Overfishing: NO |
| Management measures in effect: | [Rec. 98-08]: Limit number of vessels to 1993-1995 average. [Rec. 17-04]: TAC of 33,600 t for 2018-2020, according to interim HCR. Management objective is to keep the stock in (or rebuild it to) the green area of the Kobe plot with 60% probability, while maximizing catch and reducing variability of TAC. |

[1] Median and 80% CI for the base case.

### 7.2.2 Catch profiles (Ortiz et al. 2018)

Ortiz et al (2018) presents the main features of the Spanish albacore (Thunnus alalunga) surface fishery in 2016 and 2017.

The total albacore nominal catch (Task I data) obtained by the Spanish surface fleets in 2016 was 16,918 t; an increase of 51 % in comparison to 2015 surface fishery season. The estimated catch, Task I, taken by the troll fleet was 3,559 t in 2016 which showed a decrease compared to 2015. In 2017, the Spanish troll fleet catch increased by 17 % up to 4,163 t. The Spanish bait boat catch in 2016 was 8,381 t, an increase of 50% compared to 2015 catch. In 2017, the bait boat caught 7,358 t, a decrease of 12 % from previous year 2016. The UoC1 (troll) catches (see **Table 7-6**) correspond to approximately 50% of the total troll catches for NA albacore reported by Spain to ICCAT, while in the case of the UoC2 (P&L) client's catches correspond to almost 100% of the total bait boat catches for NA albacore reported by Spain to ICCAT (see **Table 7-6**). However, the Asturian fleets was included in the UoC in 2019, so at this time UoC1 is expected to account for almost the total troll catches reported by Spain. Catches have increased in 2018.

The monthly nominal catches taken in 2016 and 2017 fishing seasons by the bait boat fleet is shown in **Figure 7-6** (a) and (b) respectively. The bait boat fleet took 90% of the total catch between July and September, however the highest catch peak was taken in August, when catch represented 40% of total 2016 fishing. In 2017, a different pattern was observed, with the same catch peak in August (40%), and the remaining three months of the season registered similar percentage of catch levelling off. Similarly, the troll fleet nominal catches are shown in Figure 6c and 6d for 2016 and 2017 fishing seasons respectively. The general temporal pattern for both years did not differ much from the median trend in both years. In the case of the troll fleet, the fishing season was more balanced, spreading the catch from July to October, and having a catch peak in July and August. It should be highlighted that these two fishing seasons close down earlier in October both in 2016 and 2017.

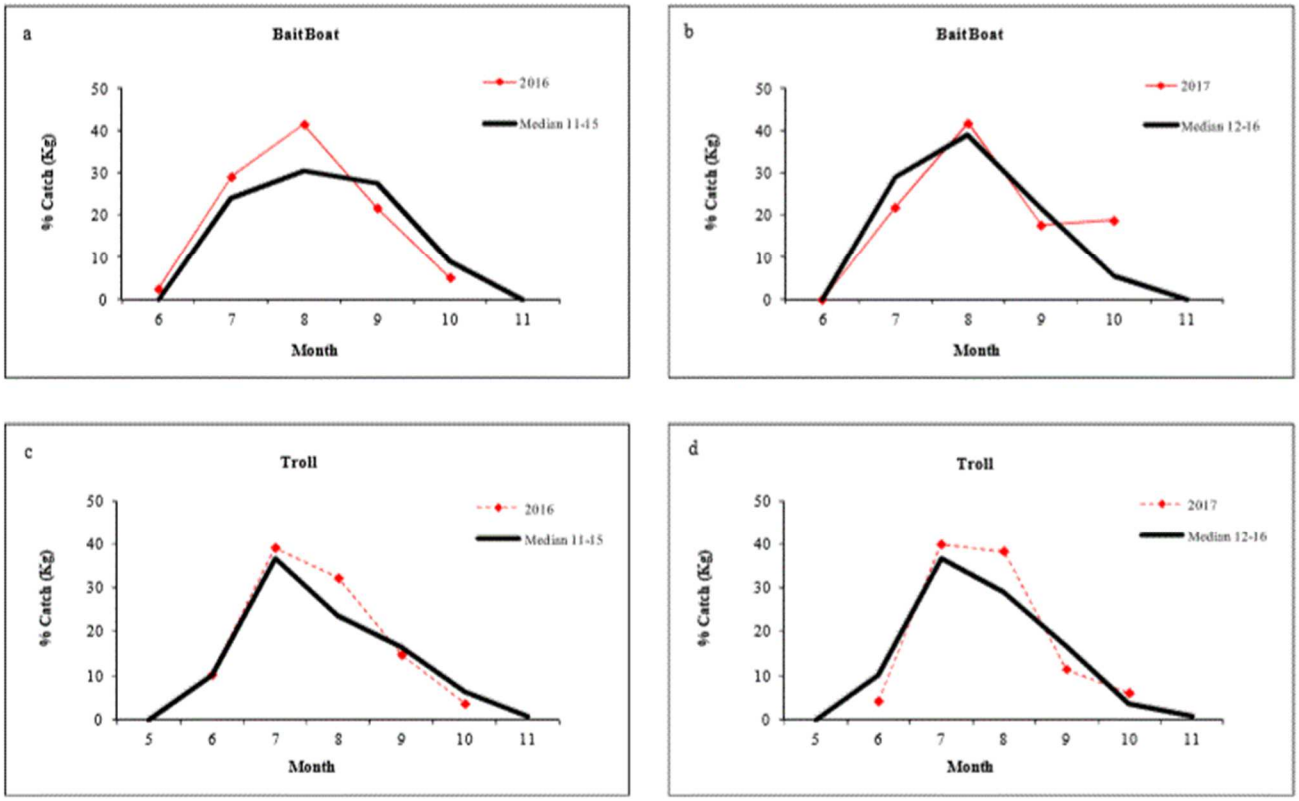


**Figure 7-6**. Seasonality of Spanish albacore catch by (a) bait boat fleet and (c) troll fleet in 2016 and median catch for 2011-2015 (solid line) and seasonality of Spanish albacore catch by (b) bait boat fleet and (d) troll fleet in 2017 and median catch for 2012-2016 (solid black line).

The length distribution of catch was obtained from a sample size of 76,908 fish measured in 2016 and 90,574 fish measured in 2017. Those number of measurement achieved represented a sampling coverage in number of fish of 1.3 % for bait boat and 9.4 % for troll fleets in 2016 and a sampling coverage in number of fish of 1.4 % for bait boat and 8.5 % for troll fleets in 2017, respectively. The annual catch at size distribution for the bait boat and troll fleets (Task II data) is shown in **Figure 7-7** (a) and (b), describing the length selectivity profile for both fleets in 2016 and 2017. Three main modes can be clearly identified in the length distribution of catches taken by troll vessels and bait boat in both years.

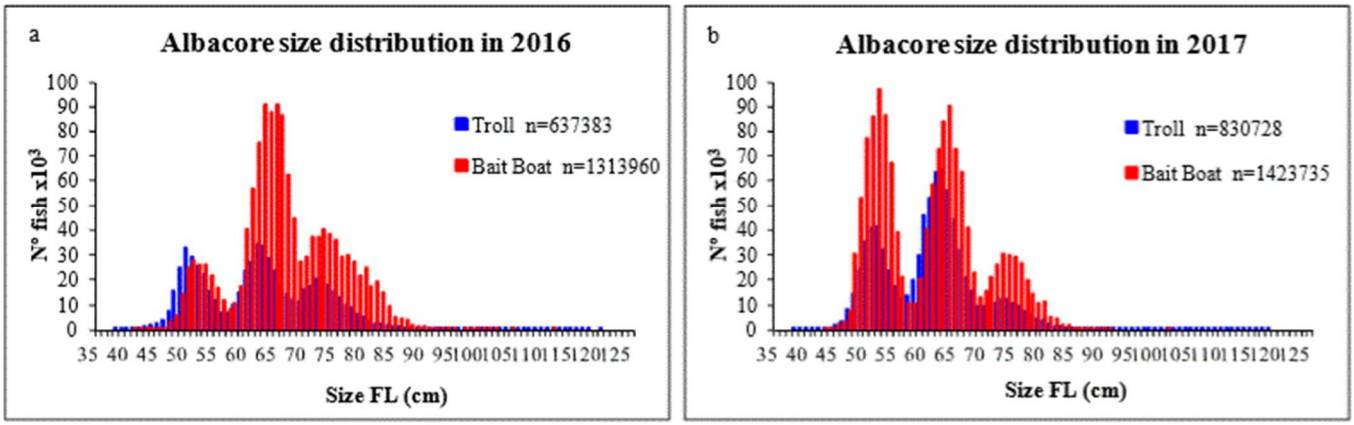


**Figure 7-7.** Catch at size distribution caught by bait boat and troll fleets in 2016 (a) and 2017 (b).

### 7.2.3 Total Allowable Catch (TAC) and catch data

Rec [16-06] established an annual Total Allowable Catch (TAC) of 28,000 t for 2017 and 2018, and that was the case for 2017. However, later Rec [17-04] adopted a new HCR and consequently the TAC established via Rec [16-06] had to be re-established according to adopted HCR. Rec [17-04] established an annual TAC of 33,600 t for 2018 and 2019.

This TAC was allocated among 4 different countries as presented in **Table 7-4**. Other ICCAT CPCs shall limit their annual catches to 200t in 2017-18

**Table 7-4.** Total TAC (in tonnes) for North Atlantic Albacore and its allocation among ICCAT CPCs for 2017 (Rec 16-06) and 2018-19 (Rec 17-04).

| ICCAT CPCs | 2017 | 2018-2019 |
|---|---|---|
| **EU** | 21,551.3 | 25,861.6 |
| **Chinese Taipei** | 3.271.7 | 3,926.0 |
| **EEUU** | 527 | 632.4 |
| **Venezuela** | 250 | 300.0 |
| **Sub total** | **25,600.0** | **30,710.0** |
| **TOTAL TAC** | **28,000.0** | **33,600.0** |

Taking into consideration previous carry over quota, the EU share of the TAC established for 2018 through Council Regulation (EU) 2018/120 amounted up to 26,094.65 t (see **Table 7-5**). The same Council Regulation splits this share into 5 different Member States, with Spain playing a dominant role accounting for 57% of the European TAC share (see **Table 7-5**), followed by France (23%), Ireland (11%), Portugal (8%) and UK (1%). A total of 15,015.58 t of albacore were initially allocated to Spain in 2018. However, the effective quota was a bit higher after considering different commitments acquired by Spain (see **Table 7-5**). There is no further quota allocation within each European Member State. Spanish vessels' report daily their catches to the SGP, the Institution in charge of closing the fishery once the entire quota has been consumed.

The fishing season in 2018 was exceptionally short since it was closed by the Spanish authorities on the 23rd of August as a result of the quota uptake. In 2018, Spain consumed up to 98.98% of its quota.

**Table 7-5.** Total North Atlantic Albacore TAC for 2018 adopted by the Commission through Rec 17-04), together with the EU and Spanish shares of the TAC according to Council Regulation (EU) 2018/120

| | **Tons** |
|---|---|
| **ICCAT TAC** | 33,600.00 |
| **EU share of TAC** | 26,094.65 |
| **Spanish share of TAC** | 15,015.58 (as regulated in Council Regulation 2018/120)<br>15,711.58 (effective different commitments acquired by Spain) |
| **UoCs share of TAC** | *There is no further quota allocation at a National level* |

Albacore catches performed by both UoCs between 2016 and 2018 are presented in **Table 7-6**. UoCs catches in 2018 (14,070.98 t) accounted for 93.7% of the effective albacore quota allocated to Spain. However, it is only in 2019 that the Asturian fleets has been included in the UoC, so this percentage will increase.

**Table 7-6.** Total annual UoCs catches of Albacore (green weight in kg) between 2016 and 2018. Source: OPEGUI, OPESCAYA and OPACAN

| | 2016 | | 2017 | | 2018 | |
|---|---|---|---|---|---|---|
| | UoC1 –troll- | UoC2 -live bait- | UoC1 –troll- | UoC2 -live bait- | UoC1 –troll- | UoC2 -live bait- |
| OPEGUI + OPESCAYA | 1,412,211.30 | 5,818,716.75 | 1,266,575.50 | 5,805,990.45 | 2,866,179.91 | 7.977.831,00 |
| OPACAN | 294,149.20 | 1,993,462.30 | 439,964.90 | 1,629,820.45 | 647.732,00 | 2.579.238,00 |
| TOTAL per UoC | **1,706,360.50** | **7,812,179.05** | **1,706,540.40** | **7,435,810.90** | **3.513.911,91** | **10.557.069,00** |
| TOTAL | **9,518,539.55** | | **9,142,351.30** | | **14.070.980,91** | |

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### 7.2.5 Principle 1 Performance Indicator scores and rationales

#### PI 1.1.1 – Stock status

| 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 |
| **a** | Stock status relative to recruitment impairment | | |

| | | | | |
|---|---|---|---|---|
| | Guide post | It is **likely** that the stock is above the point where recruitment would be impaired (PRI). | It is **highly likely** that the stock is above the PRI. | There is a **high degree of certainty** that the stock is above the PRI. |
| | Met? | **Yes** | **Yes** | **No** |

**Rationale**

The stock assessment conducted in 2013 involved large amount of data preparation and scrutiny, and therefore in 2016 it was suggested that future assessment updates could be conducted using simpler models (e.g. production models). Thus, in 2016 (ICCAT, 2016a) a production model was used to assess the stock status. A thorough revision of North Atlantic Task I data was conducted and catch rate analyses were improved and updated with new information for the northern albacore fisheries. Decisions on the final specifications of the base case model were guided by first principles (e.g. knowledge of the fisheries) and data exploration (e.g. correlation between indices). The results show that the probability of the stock currently being in the green area of the Kobe plot (not overfished and not undergoing overfishing, $F<F_{MSY}$ and $B>B_{MSY}$) is 96.8% while the probability of being in the yellow area (overfished, $B<B_{MSY}$) is 3.2%. The probability of being in the red area (overfished and undergoing overfishing, $F>F_{MSY}$ and $B<B_{MSY}$) is 0% (ICCAT, 2018).

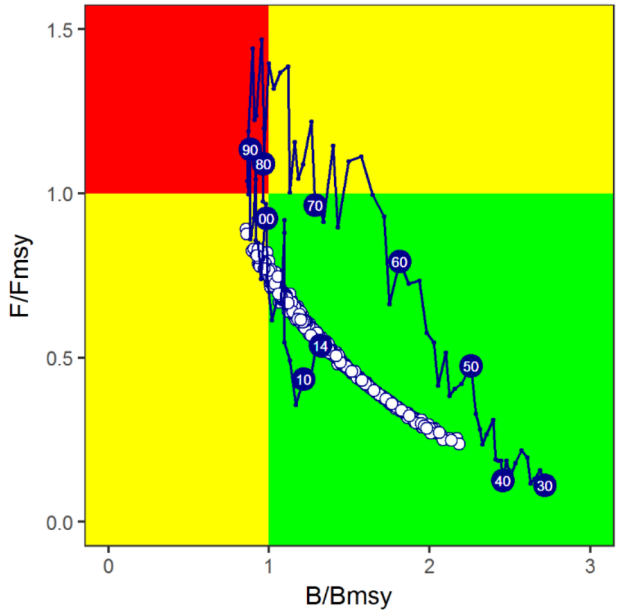


**Figure 1.1.1.1**. North Atlantic albacore. Joint trajectories of $B/B_{MSY}$ and $F/F_{MSY}$ over time (1930-2014) and current stock status according to the Base Case biomass dynamic model. Dots represent the uncertainty on the estimated 2014 stock status, (ICCAT, 2018)

Sensitivity analyses revealed that recent stock status indicators are sensitive to different modelling assumptions as well as the choice of the CPUE series. When a logistic function was assumed in the biomass dynamic model lower values of $B/B_{MSY}$ were predicted over the whole time series, while excluding the Chinese-Taipei longline CPUE resulted in much larger values of $B/B_{MSY}$ in the recent period. Other sensitivity analyses did not show strong deviations from the base case. However, although the recent status varied across scenarios, all predicted the stock to be in the green quadrant. It was noted that the $B/B_{MSY}$ trajectory showed a strong retrospective pattern that might imply that the current stock status is overestimated, although all the retrospective trajectories showed an improvement in stock status in the most recent period. In summary, the available information indicates that the stock has improved and is most likely in the green area of the Kobe plot, although the exact condition of the stock is not well determined (ICCAT, 2016a).
The PRI is set to be at $B_{Lim}=0.4B_{MSY}$. The stock in 2015 was estimated to be 3.4 times that of $B_{Lim}$. The fishing mortality must be below $0.8F_{MSY}$ and it has been estimated (with 80% confidence intervals) to be 0.54(0.35-0.72), which means it is not in the red quadrant and neither is the current biomass (2015) considering that the stock was estimated (with 80% confidence intervals) to be $B_{2015}/B_{MSY}=1.36$ (1.05-1.78). Further, considering that there is a probability of 96.8% for the stock to be in the green quadrant, there is a high degree of certainty (≥95%ile) that the stock is above the PRI and therefore **SG60 and SG80 are met**.

As a result of the harmonisation activities carried out for this P1 assessment updrade (see **section 8.8** for more details) it was agreed that **SG100 is not met** based on the following rationale: although biological information exists and was used in the past in more sophisticated assessments, production models do not incorporate life-history information. Thus, the current simplified approach does not use biological data or other information on the nature of the fishery.

## b Stock status in relation to achievement of Maximum Sustainable Yield (MSY)

| | | | | |
|---|---|---|---|---|
| | Guide post | | The stock is at or fluctuating around a level consistent with MSY. | There is **a high degree of certainty** that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years. |
| | Met? | | **Yes** | **Yes** |

**Rationale**

Considering the rationale under P1.1.1a, the available information indicates that the stock is most likely in the green area of the Kobe plot (96,8%), although the exact condition of the stock is not well determined. The threshold point is set equal to the $B_{MSY}$. The fishing mortality must be below $0.8F_{MSY}$ and it has been estimated (with 80% confidence intervals) to be 0.54 (0.35-0.72), which means it is not in the red quadrant and neither is the current biomass (2015) considering that the stock was estimated (with 80% confidence intervals) to be $B_{2015}/B_{MSY}$=1.36 (1.05-1.78). Further, considering that there is a probability of 96.8% for the stock to be in the green quadrant, there is a high degree of certainty that the stock is above the $B_{MSY}$ (to the right of the vertical line in the Kobe Plot), therefore there is a high degree of certainty that the biomass is consistent with the biomass at MSY. In addition, in the figure below the relative biomass ($B/B_{MSY}$) and fishing mortality ($F/F_{MSY}$) trajectories for the base case and sensitivity runs all indicate the biomass in 2015 was above the maximum sustainable yield level. The latest assessment was done in 2016 using data until 2014; the MSY was estimated to be 37,082 t (35,396 – 42,364) and the TAC was set at 28,000 t. Catches have been below the TAC and the MSY since then therefore it is expected that the biomass level improved somewhat since the last assessment. The catch for 2017 was recorded as 28,301 t, which is just above the TAC, but way below the MSY. Considering all this information SG60, SG80 and SG100 are met.

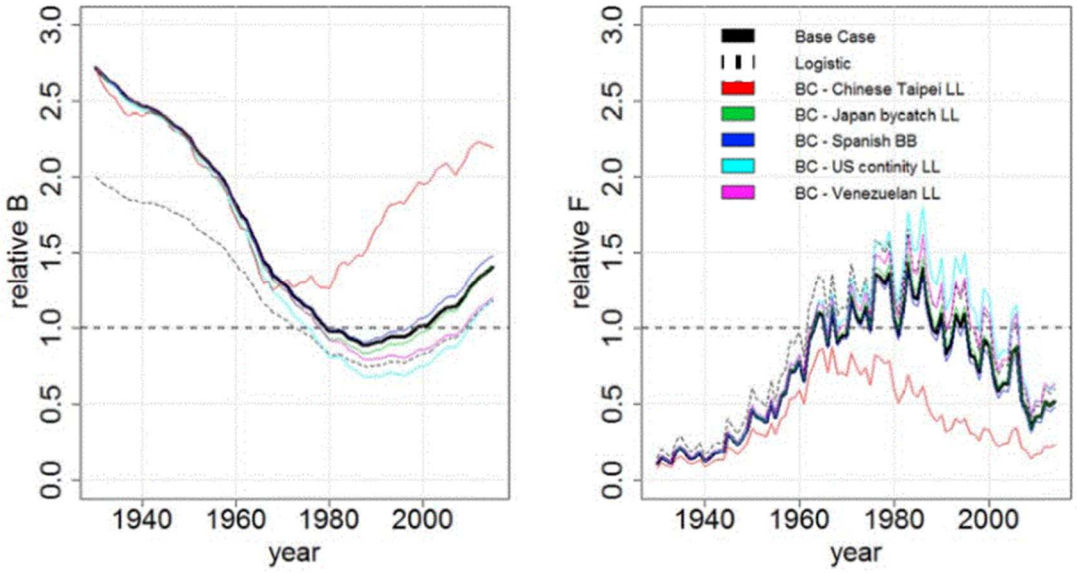


**Figure 1.1.1.2.** Estimated relative biomass ($B/B_{MSY}$, left) and fishing mortality ($F/F_{MSY}$, right) for the base case scenario (black line) and sensitivity runs (Base case with logistic production function and sensitivities with removing one single index each time (ICCAT, 2016a)

**References**

ICCAT (2016a); ICCAT (2018); ICCAT (2017)

## Stock status relative to reference points

| | Type of reference point | Value of reference point | Current stock status relative to reference point |
|---|---|---|---|
| Reference point used in scoring stock relative to PRI (SIa) | $B_{LIM}$<br>$F_{MIN}$ | $B_{LIM}$ = 0.4*$B_{MSY}$<br>$F_{MIN}$= 0.1*$F_{MSY}$ | $B_{2015}$=3.4*$B_{Lim}$ |
| Reference point used in scoring | $B_{THRESH}$<br>$F_{TAR}$ | $B_{THRESH}$ = $B_{MSY}$<br>$F_{TAR}$ = 0.8*$F_{MSY}$ | $B_{2015}/B_{MSY}$=1.36 (1.05-1.78).<br>$F_{2015}$= 0.54 (0.35-0.72) |

| | | | |
|---|---|---|---|
| stock relative to MSY (SIb) | | | |

| **Overall Performance Indicator score** | **95** |
|---|---|
| Condition number (if relevant) | **N/A** |

## PI 1.1.2 – Stock rebuilding

| PI 1.1.2 | | Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe | | |
|---|---|---|---|---|
| Scoring Issue | | SG 60 | SG 80 | SG 100 |
| **a** | Rebuilding timeframes | | | |
| | Guide post | A rebuilding timeframe is specified for the stock that is the **shorter of 20 years or 2 times its generation time**. 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 **one generation time** for the stock. |
| | Met? | **Not scored** | | **Not scored** |
| **Rationale** | | | | |

The stock is not overfished neither is overfishing taking place therefore this PI does not get scored.

| | | | | |
|---|---|---|---|---|
| **b** | Rebuilding evaluation | | | |
| | Guide post | 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, **or it is likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**. | There is **strong evidence** that the rebuilding strategies are rebuilding stocks, **or it is highly likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**. |
| | Met? | **Not scored** | **Not scored** | **Not scored** |
| **Rationale** | | | | |

The stock is not overfished neither is overfishing taking place therefore this PI does not get scored.

**References**

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| | |
|---|---|
| **Overall Performance Indicator score** | Not scored |
| Condition number (if relevant) | **N/A** |

## 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 | | | |
| | Guide post | The harvest strategy is **expected** 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 **work together** 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 **designed** to achieve stock management objectives reflected in PI 1.1.1 SG80. |
| | Met? | **Yes** | **Yes** | **Yes** |

**Rationale**

The management objectives of the multiannual management and conservation programme for North Atlantic albacore are those set out below (ICCAT, 2016b, Rec 2016-06):
Contracting Parties and Cooperating non-Contracting Parties, Entities or Fishing Entities (CPCs) whose vessels fish North Atlantic albacore in the Convention area shall implement this Multi-annual Management and Conservation Programme, of which the management objective for the Northern Atlantic albacore stock is:

a. to maintain the stock in the green zone of the Kobe plot, with at least a 60% probability, while maximizing long-term yield from the fishery, and
b. where the spawning stock biomass (SSB) has been assessed by the SCRS as below the level capable of producing MSY ($SSB_{MSY}$), to rebuild SSB to or above $SSB_{MSY}$, with at least a 60% probability, and within as short time as possible, while maximizing average catch and minimizing inter-annual fluctuations in TAC levels.

Furthermore, a general decrease of fishing mortality on this stock is observed since the implementation in 1998 of ICCAT Rec 98-08 limiting fishing capacity to the average of 1993-1995.
A TAC of 28,000 t was allowed for the time period 2014-2017. Following the recommendation on the harvest control rule (ICCAT, 2017, Rec 17-04), a three-year constant TAC of 33,600 t was established for the period 2018-2020. Following this TAC, it is expected to keep the stock above the $B_{MSY}$. **SG 60 has been met.**
In 2016, the relative abundance of north Atlantic albacore had continued to increase over the last decades and was most certainly somewhere in the green area of the Kobe plot, with a probability of 96,8% (See figure in P1.1.1a). The projections assuming catch or TAC levels similar to those observed during the last five years (between 25,000 t and 30,000 t) suggested that biomass would continue to increase and are likely sustainable, therefore 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, therefore **SG80 is met**.
In 2017, MSE results highlighted that the implementation of any of the tested HCRs would meet the objective to be in the green quadrant of the Kobe plot (with a probability higher than 60%), therefore the harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80 and **SG 100 is met**.

| | | | | |
|---|---|---|---|---|
| **b** | Harvest strategy evaluation | | | |
| | Guide post | The harvest strategy is **likely** to work based on prior experience or plausible argument. | The harvest strategy may not have been fully **tested** but evidence exists that it is achieving its objectives. | The performance of the harvest strategy has been **fully evaluated** and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels. |
| | Met? | **Yes** | **Yes** | **Yes** |

**Rationale**

In 2017, MSE results highlighted that the implementation of any of the tested HCRs would meet the objective to be in the green quadrant of the Kobe plot (with a probability higher than 60%) (**Table 1.2.1.1**, ICCAT, 2018). In HCRs where maximum change in TAC of 20% is always applied (SC1), higher stability and higher long term yields were achieved, compared to HCRs where the 20% restriction for decrease is not used when $B<B_{THRESHOLD}$ (SC2). Not

restricting TAC reductions improves safety and might allow quicker recoveries if the stock is really overexploited, but can also cause large unnecessary TAC reductions, or even fishery closures, when the stock is healthy but it is wrongly perceived to be overexploited.

**Table 1.2.1.1:** Performance of 8 HCRs, according to the performance statistics defined by Panel 2 (only one performance indicator per block is shown, which represents median values across 132 operating models). The combination of the target fishing mortality ($F_{TARGET}$), Biomass threshold ($B_{THRESHOLD}$) and the type of stability clause defines the HCR. Two stability clauses were considered: (SC1) maximum change in TAC of 20% always applied from one 3-year management period to the next while also always imposing a 15,000 to 50,000 t min-max TAC; and (SC2) same as SC1 but not restricting TAC reductions and not imposing a minimum TAC when $B<B_{THRESHOLD}$. Each HCR has a unique identification number in this table. pGR% = probability of being in the green quadrant of the Kobe plot; pBint% = probability of $B_{THRESHOLD}>B>B_{LIM}$; LongY (kt) = mean yield for the period 2030-2045 in thousands of tons; MAP = mean absolute proportional change in catch (ICCAT, 2018).

| HCR | | | | Stock Status | Safety | Catch | Stability |
|---|---|---|---|---|---|---|---|
| Number | Ftar | Bthresh | Stability clause | pGr% | pBint% | LongY (kt) | MAP (%) |
| 1 | 0,80 | 0,80 | SC2 | 85,5 | 9,0 | 26,5 | 8,3 |
| 2 | 1,00 | 0,80 | SC2 | 78,9 | 13,0 | 29,0 | 8,8 |
| 3 | 0,80 | 1,00 | SC2 | 88,6 | 8,3 | 26,9 | 8,3 |
| 4 | 1,00 | 1,00 | SC2 | 84,5 | 9,2 | 26,9 | 8,9 |
| 1 | 0,80 | 0,80 | SC1 | 85,8 | 9,3 | 32,1 | 5,6 |
| 2 | 1,00 | 0,80 | SC1 | 74,7 | 15,8 | 34,1 | 6,2 |
| 3 | 0,80 | 1,00 | SC1 | 86,0 | 10,4 | 32,2 | 6,0 |
| 4 | 1,00 | 1,00 | SC1 | 77,9 | 14,3 | 35,0 | 6,3 |

Considering the above evaluation of the harvest control rules it can be deduced that the performance of the harvest strategy has been fully evaluated and considering that the stock is well above the $B_{THRESH}$, it shows that the harvest strategy is achieving its objectives including being clearly able to maintain stocks at target levels and therefore **SG60, SG80 and SG100 are met**.

| | | | | |
|---|---|---|---|---|
| | Harvest strategy monitoring | | | |
| **c** | Guide post | Monitoring is in place that is expected to determine whether the harvest strategy is working. | | |
| | Met? | **Yes** | | |
| **Rationale** | | | | |

Catches and CPUE are monitored and reported on a yearly basis as CPCs are obligated to annually report data to ICCAT; catch data (Task I) and catch-effort (Task II). The results are reviewed every year during the species group meeting, the SCRS meeting and the Commission meeting. According to ICCAT, 2017 (Rec 2017-04) a new stock assessment shall be conducted every three years, with the next one to occur in 2020. Monitoring is in place and it provides all the information to test whether the harvest strategy is working, therefore **SG60 is met**

| | | | | |
|---|---|---|---|---|
| | Harvest strategy review | | | |
| **d** | Guide post | | | The harvest strategy is periodically reviewed and improved as necessary. |
| | Met? | | | **Yes** |
| **Rationale** | | | | |

According to ICCAT, 2017 (Rec 2017-04), the Commission shall review the interim HCR in 2020 with a view to adopting a long-term management procedure. Also, the stock assessment should be updated every three years, with the next one due in 2020. In addition Sculley (2018) reviewed the code and algorithms used within the MSE for the target species, therefore **SG 100 is met.**

| | |
|---|---|
| e | Shark finning |

| | | | | |
|---|---|---|---|---|
| | Guide post | It is **likely** that shark finning is not taking place. | It is **highly likely** that shark finning is not taking place. | There is a **high degree of certainty** that shark finning is not taking place. |
| | Met? | **NA** | **NA** | **NA** |

Rationale

This SI need not be scored if sharks are not a target species.

| | | | | |
|---|---|---|---|---|
| **f** | Review of alternative measures | | | |
| | Guide post | 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 **regular** 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 **biennial** 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. |
| | Met? | **NA** | **NA** | **NA** |

Rationale

The fishing gears used by the two UoAs (troll and pole & line) catch the fish one by one and are highly selective gears, and damaged or small fish is not common. Thus, the mortality caused by the UoAs on the North Atlantic albacore stock due to unwanted catches is considered to be negligible. Based on the above this SI was considered to be not relevant. Further, it is worth noting that during the last years, the surface fisheries contributed to approximately 80% of the total catch (ICCAT 2018)

References

ICCAT (2016a), ICCAT (2016b), ICCAT (2017), ICCAT (2018) Sculley (2018)

| | |
|---|---|
| **Overall Performance Indicator score** | **100** |
| Condition number (if relevant) | **N/A** |

## 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 | **Generally understood** HCRs are in place **or available** that are **expected** to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached. | **Well defined** HCRs are **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, or for key LTL species a level consistent with ecosystem needs. | The HCRs are expected to keep the stock **fluctuating at or above** a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, **most** of the time. |
| | Met? | **Yes** | **Yes** | **Yes** |
| Rationale | | | | |

According to ICCAT, 2017, Rec 17-04 the following harvest control rules have been implemented.

For the purpose of the multiannual management and conservation programme for the North Atlantic albacore, the following interim reference points are established:

a. $B_{THRESH} = B_{MSY}$
b. $B_{LIM} = 0.4*B_{MSY}$
c. $F_{TAR} = 0.8*F_{MSY}$
d. $F_{MIN} = 0.1*F_{MSY}$

The North Atlantic albacore stock assessment shall be conducted every three (3) years, and the harvest control rule (HCR) sets a 3-year constant annual total allowable catch (TAC) using the following three values estimated from the stock assessment. For each value the median values as reported in the summary table of the SCRS report shall be used:

a) The estimate of current stock biomass (Bcurr) with respect to $B_{MSY}$.
b) The estimate of the stock biomass at Maximum Sustainable Yield ($B_{MSY}$).
c) The estimate of the fishing mortality at MSY ($F_{MSY}$).

The HCR has the form shown in **Figure 1.2.2.1** and the following control parameters are set as per below:

a) The biomass threshold level ($B_{THRESH}$) is equal to the biomass able to deliver the maximum sustainable yield ($B_{THRESH}$ = BMSY).
b) A fishing mortality target corresponding to 80% of $F_{MSY}$ ($F_{TAR} = 0.8*F_{MSY}$) will be applied when the stock status is at, or above, the threshold level ($B_{THRESH}$).

In 2017, the Commission adopted the interim HCR described in **Figure 1.2.2.1**, with a maximum TAC of 50,000 t and a maximum change of 20% when $B_{CUR}>B_{THR}$. Its application established a TAC of 33,600 t for 2018-2020 (ICCAT, 2017, Rec. 17-04) and the possibility to carry over some unused portions of the quotas to be caught later in time (ICCAT, 2016b, Rec. 16-06) remained.
Furthermore, a general decrease of fishing mortality on this stock is observed since the implementation in 1998 of ICCAT Rec 98-08 limiting fishing capacity to the average of 1993-1995.

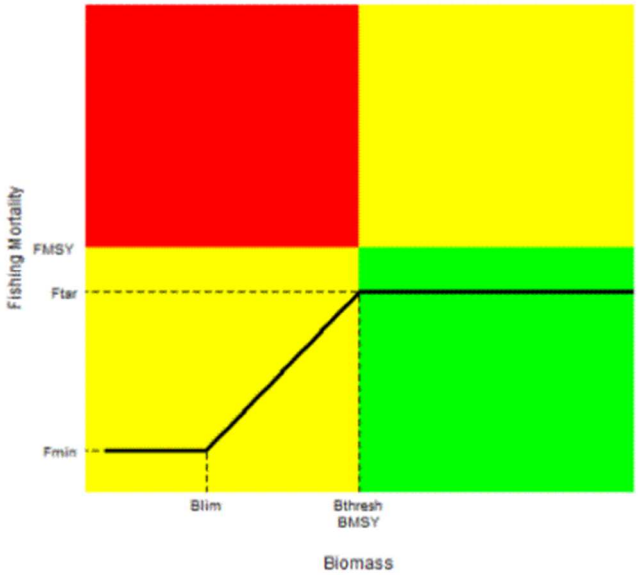


**Figure 1.2.2.1.** Graphic form of the HCR adopted in Rec 17-04. $B_{LIM}$ (set at $0.4B_{MSY}$) is the limit biomass reference point, $B_{THRESH}$ (set at BMSY) is the point below which fishing mortality decreases linearly, $F_{TAR}$ (set at $0.8F_{MSY}$) is the target fishing mortality rate to be applied to achieve the management objectives, and $F_{MIN}$ (set at $0.1F_{MSY}$) is the fishing mortality to be applied when $B<B_{LIM}$ (ICCAT, 2018).

Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached (Figure 1.2.2.1), which are expected to keep the stock fluctuating around a $B_{TRESH}$, which is consistent with MSY, therefore **SG60 and SG80 have been met**.

The target species is not a key LTL and therefore MSY is considered to be an appropriate target level. Considering that the results show that the probability of the stock currently being in the green area of the Kobe plot (not overfished and not undergoing overfishing, $F<F_{MSY}$ and $B>B_{MSY}$) is 96.8% while the probability of being in the yellow area (overfished, $B<B_{MSY}$) is 3.2% and the probability of being in the red area (overfished and undergoing overfishing, $F>F_{MSY}$ and $B<B_{MSY}$) is 0% (ICCAT, 2018), it can be concluded that the HCR is expected to keep the stock **fluctuating at or above** a target level consistent with MSY, therefore **SG100 is met.**

| | HCRs robustness to uncertainty | | | |
|---|---|---|---|---|
| **b** | Guide post | | The HCRs are likely to be robust to the main uncertainties. | The HCRs take account of a **wide** range of uncertainties including the ecological role of the stock, and there is **evidence** that the HCRs are robust to the main uncertainties. |
| | Met? | | **Yes** | **No** |
| **Rationale** | | | | |

In 2018, the HCR adopted in ICCAT, 2017, Rec 17-04 was tested together with variants accounting for:

i) the carry over,
ii) the effect of setting a lower TAC limit of 15,000t,
iii) the effect of applying the 20% stability clause also when $B_{CUR}>B_{LIM}$ and $B_{CUR}<B_{THR}$, and
iv) the effect of 20% maximum TAC reduction and 25% maximum TAC increase when $B_{CUR}>B_{LIM}$ and $B_{CUR}<B_{THR}$.

Results indicate that the HCR adopted in 17-04 and its new variants achieve ICCAT's management objective of maintaining stocks in the green quadrant of the Kobe plot with at least 60% probability. Compared to a perfect implementation of the TAC, the carry over scenario (i) produced lower yield and stability, but better stock condition and safety. The carry over effect was tested assuming that historical differences between catch and TAC would remain in the future. The three other scenarios (ii, iii, iv) led to more stability together with comparable yield and stock condition (Figure 1.2.2.2).

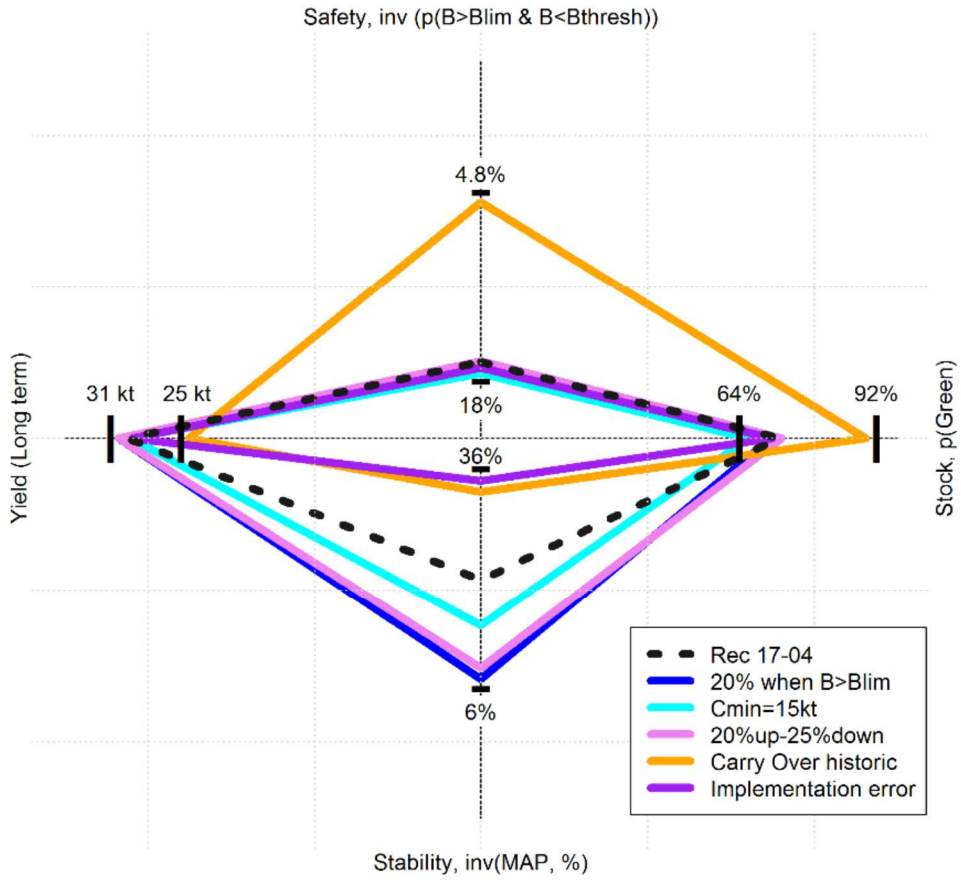


**Figure 1.2.2.2**. Spider plots representing the relative performance of the HCR adopted in Rec 17-04, as well as different variants, namely the effect of the carry over (orange), the effect of setting a lower TAC limit of 15,000t (light blue), the effect of applying the 20% stability clause also when $B_{CUR}>B_{LIM}$ and $B_{CUR}<B_{THR}$ (dark blue), and the effect of 25% maximum TAC reduction and 20% maximum TAC increase when $B_{CUR}>B_{LIM}$ and $B_{CUR}<B_{THR}$ (pink). The purple scenario represents an extreme scenario of imperfect implementation of the TAC, (ICCAT, 2018).

As shown above, the HCRs are likely to be robust to the main uncertainties, therefore **SG80 is met**. Although, the HCRs take account of a wide range of uncertainties, and that there is evidence that the HCRs are robust to the main uncertainties, the ecological role of the stock is not included, and therefore this guidepost is only partially met and **SG100 is not reached.**

| | | | | |
|---|---|---|---|---|
| **c** | HCRs evaluation | | | |
| | Guide post | There is **some evidence** that tools used **or available** to implement HCRs are appropriate and effective in controlling exploitation. | **Available evidence indicates** that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. | **Evidence clearly shows** that the tools in use are effective in achieving the exploitation levels required under the HCRs. |
| | Met? | **Yes** | **Yes** | **No** |

**Rationale**

In 2017, the Commission adopted the interim HCR described in **Figure 1.2.2.1**, with a maximum TAC of 50,000 t and a maximum change of 20% when $B_{CUR}>B_{THR}$. Its application established a TAC of 33,600 t for 2018-2020 (ICCAT, 2017, Rec. 17-04) and the possibility to carry over some unused portions of the quotas to be caught later in time (ICCAT, 2016b, Rec. 16-06) remained. Since the establishment of the TAC in the year 2001, catch remained substantially below the TAC in all but four years (**Figure 7-1** in the background section), it can therefore be said that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCR's, therefore **SG60 and SG80 is met**.

This HCR has only just been implemented, therefore it is too early to say the evidence clearly shows that the tools in use are effective, therefore **SG100 is not met** at this time.

**References**

ICCAT (1998), ICCAT (2016a), ICCAT (2016b), ICCAT (2017), ICCAT (2018)

| **Overall Performance Indicator score** | **85** |
|---|---|
| Condition number (if relevant) | **N/A** |

## 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 | | | |
| | Guide post | **Some** relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy. | **Sufficient** relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy. | A **comprehensive range** 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. |
| | Met? | **Yes** | **Yes** | **No** |
| **Rationale** | | | | |

Catches and CPUE are monitored and reported on a yearly basis as CPCs are obligated to annually report data to ICCAT; catch data (Task I) and catch-effort (Task II). The results are reviewed every year during the species group meeting, the SCRS meeting and the Commission meeting, therefore some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy; **SG60 is met**.
Four longline and one baitboat CPUE indices are available to be used in a production model framework (**Figure 1.2.3.1**). Different CPUE series reflect local abundance available to different fleets operating in different areas, and overall they represent the global population trend (ICCAT, 2016a).

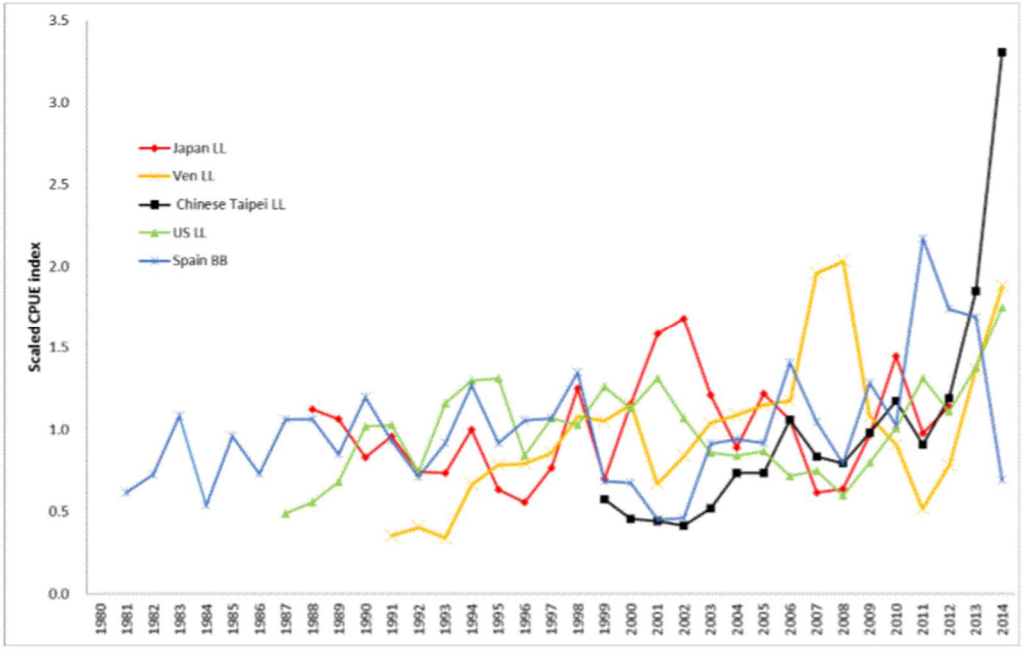


**Figure 1.2.3.1**. North Atlantic albacore. Standardized catch rate indices used in the 2016 stock assessment from the surface fisheries, which take mostly juvenile fish, and from the longline fisheries, which take mostly adult fish (ICCAT, 2018).

According to the ICCAT scoreboard of data availability provided in the latest biennial report prepared by the ICCAT Secretariat (ICCAT 2018b), the score for the North Atlantic albacore was 3, where 4 is the highest score (See **Figure 1.2.3.2** below).

ICCAT Scoreboard on data availabilty (PRELIMINARY study)

| Table # | Fishery | Global score | Score type |
|---|---|---|---|
| 1 | ALB-N stock | 7.0 | score3 |
| 2 | ALB-S stock | 5.6 | score3 |
| 3 | ALB-M stock | 2.3 | score3 |
| 4 | BFT-E stock (ATE region) | 6.0 | score3 |
| 5 | BFT-E stock (MED region) | 3.7 | score3 |
| 6 | BFT-W stock | 8.1 | score3 |
| 7 | BET-A stock (AT + MD) | 6.7 | score3 |
| 8 | YFT-E region | 7.0 | score3 |
| 9 | YFT-W region | 4.5 | score3 |
| 10 | SKJ-E stock | 7.4 | score3 |
| 11 | SKJ-W stock | 5.1 | score3 |
| 12 | SWO-N stock | 8.1 | score3 |
| 13 | SWO-S stock | 7.1 | score3 |
| 14 | SWO-M stock | 4.4 | score3 |
| 15 | BUM-A stock (AT + MD) | 4.3 | score2 |
| 16 | WHM-A stock (AT + MD) | 5.0 | score2 |
| 17 | SAI-E stock | 3.2 | score2 |
| 18 | SAI-W stock | 3.8 | score2 |
| 19 | SPF-E stock | 4.5 | score2 |
| 20 | SPF-W stock | 4.3 | score2 |
| 21 | BSH-N region | 4.2 | score2 |
| 22 | BSH-S region | 4.8 | score2 |
| 23 | BSH-M region | 0.8 | score2 |
| 24 | POR-N region | 2.0 | score2 |
| 25 | POR-S region | 1.3 | score2 |
| 26 | SMA-N region | 3.4 | score2 |
| 27 | SMA-S region | 4.7 | score2 |

| Quartile | |
|---|---|
| bad: | [0, 2.5[ 1 |
| poor: | [2.5, 5[ 2 |
| average: | [5, 7.5[ 3 |
| excelent: | [7.5, 10[ 4 |

LEGEND and color schemes used to show Task-II (t2) availability

| character | represents |
|---|---|
| a | t2ce |
| b | t2sz |
| c | cas |

| color scheme | t2 availability score |
|---|---|

| concatenated string | represents | score3 (*) | score2 (**) |
|---|---|---|---|
| -1 | no T2 data | 0 | 0 |
| a | t2ce only | 1 | 1 |
| b | t2sz only | 1 | 1 |
| c | cas only | 1 | 1 |
| bc | t2sz + cas | 1 | 1 |
| ab | t2ce + t2sz | 2 | 2 |
| ac | t2ce + cas | 2 | 2 |
| abc | all | 3 | 2 |

* Species requiring ST05-CAS data (ALB, BFT, BET, YFT, SKJ

** Rest of the species (not requireing ST05-CAS data)

| | | |
|---|---|---|
| (number of years in the score) | totYears | 21 |
| (score scale adopted) | scale | 10 |

**Figure 1.2.3.2**. ICCAT scoreboard on data availability (preliminary study). Source: ICCAT 2018b

At a national level, albacore can only be targeted using troll or pole & line. These two Spanish fleets account for more than 50% of the total catches of this stock (**figure 1.2.3.3**). The level of reporting of these two Spanish fleets on Task I and Task II is considered optimal, as shown in **figure 1.2.3.3**.

Table1. ALB-N stock

| Species | Stock | Status | FlagName | GearGrp | DSet | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Rank | % | %cum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| T1 Total | | | | | | 28803 | 29023 | 25746 | 34551 | 33124 | 26253 | 22741 | 25567 | 25960 | 35318 | 36989 | 21991 | 20483 | 15375 | 19509 | 20039 | 25680 | 24633 | 26652 | 25442 | 30141 | | | |
| ALB | ATN | CP | EU.España | BB | t1 | 9640 | 9401 | 7346 | 8448 | 10774 | 4929 | 4712 | 7325 | 7893 | 10067 | 14182 | 8375 | 7403 | 4940 | 5841 | 4676 | 7753 | 4473 | 4740 | 8353 | 13394 | 1 | 29.7% | 30% |
| ALB | ATN | CP | EU.España | BB | t2 | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | ac | ac | ac | ac | ac | 1 | | |
| ALB | ATN | CP | EU.España | TR | t1 | 6649 | 7864 | 5834 | 6829 | 5013 | 4245 | 3976 | 5193 | 7477 | 10165 | 10277 | 6089 | 5233 | 4437 | 7009 | 3564 | 5833 | 5864 | 6651 | 5596 | 3559 | 2 | 23.0% | 53% |
| ALB | ATN | CP | EU.España | TR | t2 | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | ac | ac | ac | ac | ac | 2 | | |
| ALB | ATN | CP | EU.France | TW | t1 | 2570 | 2874 | 1178 | 4723 | 3466 | 4740 | 4275 | 3252 | 2194 | 6743 | 5878 | 2842 | 2806 | 773 | 1216 | 3249 | 3126 | 4327 | 6699 | 3379 | 3961 | 3 | 13.4% | 66% |
| ALB | ATN | CP | EU.France | TW | t2 | ac | ac | a | ac | ac | ac | ac | ab | abc | abc | abc | abc | abc | abc | abc | abc | ab | abc | abc | a | -1 | 3 | | |
| ALB | ATN | NCC | Chinese Taipei | LL | t1 | 3905 | 3330 | 3098 | 5785 | 5299 | 4399 | 4330 | 4557 | 4278 | 2540 | 2357 | 1297 | 1107 | 863 | 1587 | 1367 | 1180 | 2394 | 947 | 2857 | 3134 | 4 | 10.9% | 77% |
| ALB | ATN | NCC | Chinese Taipei | LL | t2 | ab | abc | abc | abc | ab | ab | ab | ab | ab | ab | ab | ab | ab | ab | ab | ab | ab | ab | ab | ab | ab | 4 | | |
| ALB | ATN | CP | EU.Ireland | TW | t1 | | | 57 | 319 | 80 | 634 | 1100 | 594 | 172 | 258 | 505 | 586 | 1514 | 1997 | 785 | 3595 | 3551 | 2231 | 2485 | 2390 | 2337 | 5 | 4.5% | 82% |
| ALB | ATN | CP | EU.Ireland | TW | t2 | | | -1 | b | a | a | abc | abc | abc | ac | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | ab | 5 | | |
| ALB | ATN | CP | EU.Ireland | GN | t1 | 874 | 1913 | 3639 | 4523 | 3374 | 1430 | | | | | | | | | | | | | | | | 6 | 2.8% | 84% |
| ALB | ATN | CP | EU.Ireland | GN | t2 | c | c | c | bc | ab | ab | | | | | | | | | | | | | | | | 6 | | |
| ALB | ATN | CP | EU.Portugal | BB | t1 | 1622 | 393 | 76 | 281 | 255 | 1137 | 1913 | 516 | 224 | 391 | 21 | 80 | 517 | 54 | 179 | 855 | 1063 | 502 | 2601 | 912 | 1061 | 7 | 2.6% | 87% |
| ALB | ATN | CP | EU.Portugal | BB | t2 | abc | abc | ab | abc | abc | abc | ab | abc | abc | abc | a | abc | abc | abc | ab | abc | abc | abc | abc | abc | abc | 7 | | |
| ALB | ATN | CP | Japan | LL | t1 | 466 | 414 | 446 | 425 | 688 | 1126 | 711 | 680 | 893 | 1336 | 781 | 288 | 402 | 288 | 525 | 336 | 400 | 1745 | 267 | 276 | 300 | 8 | 2.3% | 89% |
| ALB | ATN | CP | Japan | LL | t2 | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | ab | ab | ab | ab | ab | 8 | | |
| ALB | ATN | CP | EU.France | GN | t1 | 2048 | 1717 | 2393 | 1723 | 1864 | 1150 | 13 | | | | | | | | 2 | 1 | | 21 | | 7 | 3 | 9 | 2.0% | 91% |
| ALB | ATN | CP | EU.France | GN | t2 | ac | ac | a | ac | ac | ac | a | | | | | | | | -1 | -1 | | -1 | | -1 | -1 | 9 | | |
| ALB | ATN | CP | St. Vincent and Grenadines | LL | t1 | | | | | 703 | 1370 | 300 | 1555 | 82 | 802 | 76 | 263 | 130 | 134 | 174 | 329 | 305 | 286 | 327 | 305 | 291 | 10 | 1.3% | 93% |
| ALB | ATN | CP | St. Vincent and Grenadines | LL | t2 | | | | | -1 | -1 | a | a | a | -1 | a | a | a | a | a | ab | a | ab | a | ab | ab | 10 | | |
| ALB | ATN | CP | U.S.A. | RR | t1 | 309 | 335 | 601 | 90 | 251 | 122 | 323 | 334 | 500 | 356 | 284 | 394 | 125 | 23 | 150 | 171 | 145 | 340 | 137 | 13 | 44 | 11 | 0.9% | 94% |
| ALB | ATN | CP | U.S.A. | RR | t2 | b | ab | ab | ab | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | 11 | | |
| ALB | ATN | CP | Venezuela | LL | t1 | 52 | 49 | 16 | 36 | 106 | 35 | 67 | 135 | 116 | 111 | 155 | 146 | 138 | 290 | 242 | 247 | 292 | 274 | 437 | 560 | 587 | 12 | 0.7% | 94% |
| ALB | ATN | CP | Venezuela | LL | t2 | ab | b | ab | ab | ab | b | b | ab | ab | ab | ab | ab | ab | ab | ab | ab | a | a | a | a | | 12 | | |
| ALB | ATN | CP | U.S.A. | LL | t1 | 123 | 184 | 179 | 192 | 146 | 191 | 146 | 106 | 120 | 108 | 103 | 127 | 127 | 158 | 160 | 240 | 261 | 255 | 309 | 229 | 203 | 13 | 0.7% | 95% |
| ALB | ATN | CP | U.S.A. | LL | t2 | ab | ab | ab | ab | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | abc | 13 | | |
| ALB | ATN | CP | EU.España | LL | t1 | 35 | 30 | 105 | 86 | 214 | | 264 | 12 | 10 | 216 | 80 | 118 | 89 | 240 | 111 | 117 | 133 | 159 | 216 | 177 | 123 | 14 | 0.5% | 95% |
| ALB | ATN | CP | EU.España | LL | t2 | ab | | -1 | -1 | -1 | -1 | | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | b | b | -1 | 14 | | |
| ALB | ATN | CP | Vanuatu | LL | t1 | | | | | | | | 414 | 507 | 235 | 95 | 20 | 140 | 187 | 196 | 172 | 228 | 195 | | | | 15 | 0.4% | 96% |
| ALB | ATN | CP | Vanuatu | LL | t2 | | | | | | | | a | a | a | -1 | -1 | -1 | a | ab | ab | a | a | | | | 15 | | |
| ALB | ATN | CP | Venezuela | PS | t1 | 263 | 26 | 91 | 55 | 191 | 260 | 93 | 211 | 341 | 63 | 162 | 198 | 70 | 84 | 16 | | 21 | | 27 | | | 16 | 0.4% | 96% |
| ALB | ATN | CP | Venezuela | PS | t2 | b | a | ab | a | ab | ab | ab | ab | ab | ab | ab | ab | ab | ab | | | ab | | ab | | | 16 | | |
| ALB | ATN | NCO | Cuba | LL | t1 | | | | | | | 1 | 322 | 435 | 424 | 527 | | | | | | | | | | | 17 | 0.3% | 97% |
| ALB | ATN | NCO | Cuba | LL | t2 | | | | | | | ab | -1 | -1 | -1 | -1 | | | | | | | | | | | 17 | | |
| ALB | ATN | CP | Belize | LL | t1 | | | | | | | | | | | | 22 | 26 | 39 | 366 | 351 | 155 | 230 | 79 | 1 | 399 | 18 | 0.3% | 97% |
| ALB | ATN | CP | Belize | LL | t2 | | | | | | | | | | | | a | a | ab | ab | ab | ab | a | a | ab | ac | 18 | | |
| ALB | ATN | CP | EU.France | UN | t1 | | | | | 301 | 273 | 4 | 1 | 54 | 10 | 6 | 4 | 2 | 1 | 341 | 2 | 48 | 173 | 219 | | 2 | 19 | 0.3% | 97% |
| ALB | ATN | CP | EU.France | UN | t2 | a | a | a | a | a | a | a | a | a | a | a | a | a | a | -1 | -1 | -1 | a | a | a | -1 | 19 | | |
| ALB | ATN | CP | China PR | LL | t1 | 20 | | | 21 | 16 | 57 | 196 | 155 | 32 | 112 | 202 | 59 | 24 | 27 | 142 | 101 | 21 | 81 | 35 | 21 | 103 | 20 | 0.3% | 97% |
| ALB | ATN | CP | China PR | LL | t2 | -1 | | | a | a | a | a | a | a | a | a | a | a | ab | ab | ab | ab | ab | a | ab | abc | 20 | | |
| ALB | ATN | CP | EU.France | LL | t1 | | | | 76 | 4 | 26 | 16 | 90 | 176 | 253 | 309 | 229 | 128 | 4 | 17 | 3 | 2 | 1 | 0 | 47 | 10 | 21 | 0.3% | 98% |
| ALB | ATN | CP | EU.France | LL | t2 | | | | a | a | a | a | a | a | a | abc | abc | abc | a | a | a | a | ab | -1 | -1 | | 21 | | |

**Figure 1.2.3.3.** SCRS statistics (Task-I and Task-II) for the North Atlantic albacore stock, major fishery (flag/gear combinations ranked by order of importance) and year (1996 to 2016). Only the most important fisheries (representing ±97.5% of Task-I total catch) are shown. For each data series, Task I (DSet= "t1", in tonnes) is visualised against its equivalent Task II availability (DSet= "t2") scheme. The Task-II colour scheme, has a concatenation of characters ("a"= T2CE exists; "b"= T2SZ exists; "c"= CAS exists) that represents the Task-II data availability in the ICCAT-DB. See the legend for the colour scheme pattern definitions provided above in Figure 1.2.3.2.

Further, Ortiz et. al (2018) provided a summary of the latest information available for the northern Atlantic albacore fishery. The total albacore nominal catch (Task I data) obtained by the surface fleets in 2016 was 16,918 t; an increase of 51 % in comparison to 2015 surface fishery season. The estimated catch, Task I, taken by the troll fleet was 3,559 t in 2016 which showed a decrease compared to 2015. In 2017, the troll fleet catch increased by 17 % up to

4,163 t. The bait boat catch in 2016 was 8,381 t, an increase of 50% compared to 2015 catch. In 2017, the bait boat caught 7,358 t, a decrease of 12 % from previous year 2016.
The bait boat fleet took 90% of the total catch between July and September, however the highest catch peak was taken in August, when catch represented 40% of total 2016 fishing. In 2017, a different pattern was observed, with the same catch peak in August (40%), and the remaining three months of the season registered similar percentage of catch levelling off. Similarly, the troll fleet nominal catches are shown **in Figure 7-6 (c) and (d)** (in the background section) for 2016 and 2017 fishing seasons respectively. The general temporal pattern for both years did not differ much from the median trend in both years. In the case of the troll fleet, the fishing season was more balanced, spreading the catch from July to October, and having a catch peak in July and August. It should be highlighted that these two fishing seasons close down earlier in October both in 2016 and 2017.
The length distribution of catch was obtained from a sample size of 76,908 fish measured in 2016 and 90,574 fish measured in 2017. Those number of measurement achieved represented a sampling coverage in number of fish of 1.3 % for bait boat and 9.4 % for troll fleets in 2016 and a sampling coverage in number of fish of 1.4 % for bait boat and 8.5 % for troll fleets in 2017, respectively. The annual catch at size distribution for the bait boat and troll fleets (Task II data) is shown in Figure 8a and b (in the background section), describing the length selectivity profile for both fleets in 2016 and 2017. Three main modes can be clearly identified in the length distribution of catches taken by troll vessels and bait boat in both years.
Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy, therefore **SG80 is met**.
While information is sufficient for stock assessment, it is not comprehensive. There is considerable environmental data not directly used in the current harvest strategy. Also, life-history data on growth, age, mortality and abundance are limited and understanding of the population dynamics of yellowfin tuna is incomplete. Improvements are being made in this regard, but since gaps in relevant biological information persist, the **requirements for SG100 are not met**

| | Monitoring | | | |
|---|---|---|---|---|
| **b** | Guide post | 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 **regularly monitored at a level of accuracy and coverage consistent with the harvest control rule**, and **one or more indicators** are available and monitored with sufficient frequency to support the harvest control rule. | **All information** 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 **uncertainties** in the information [data] and the robustness of assessment and management to this uncertainty. |
| | Met? | **Yes** | **Yes** | **No** |

**Rationale**

Catches and CPUE are monitored and reported on a yearly basis as CPCs are obligated to annually report data to ICCAT; catch data (Task I) and catch-effort (Task II). The results are reviewed every year during the species group meeting, the SCRS meeting and the Commission meeting. Four longline and one baitboat CPUE indices are available to be used in a production model framework (**Figure 1.2.3.1**). Different CPUE series reflect local abundance available to different fleets operating in different areas, and overall they represent the global population trend. It is evident that all information (also see Ortiz et. al, 2018, under P1.2.3a) required by the harvest control rule is being regularly monitored at a level of accuracy and coverago consistent with the HCR, and one or more indicators are available and monitored with sufficient frequency to support the HCR. **SG60 and SG80 are met.**

However, the monitoring does not cover all information, and not all information from all fleets is recorded with a high degree of certainty. Uncertainties are known to occur from many sources, but their precise nature is not known. The last stock assessment was conducted in 2016 using data up to 2014. The next stock assessment is planned for 2021. There is some understanding of the inherent uncertainties in the data and stock assessments test the robustness of these uncertainties through sensitivity trials. However, not all information required by the generally understood HCR is monitored with high frequency and a high degree of certainty. **The SG100 requirements are not met.**

| | Comprehensiveness of information | | | |
|---|---|---|---|---|
| **c** | Guide post | | There is good information on all other fishery removals from the stock. | |

| | | | | |
|---|---|---|---|---|
| | Met? | | **Yes** | |
| Rationale | | | | |

Total catches of the P1 stock is broken down into all nations and all gears. Contracting Parties and Cooperating non Contracting Parties, Entities and Fishing Entities (CPCs) require the collection of bycatch and discard data in their existing domestic scientific observer programs and logbook programs (ICCAT 2011, Rec 11-10).
**Table 1.2.3.2** shows that the level of reporting of most of CPCs targeting this stock is relatively good. The most relevant CPCs have been reporting Task I and II data since at least 1996, with the only exception of France which failed to report Task II data in 2016. No major issues regarding IUU fishing affecting this stock have been raised at ICCAT level. As already mentioned above in SI(a), the ICCAT scoreboard of data availability provided in ICCAT (2018b) gives the North Atlantic albacore stock a score of 3, where 4 is the highest score (See **Figure 1.2.3.3** above).
Based on the information presented the team concludes that there is sufficient information on all other fishery removals from the stock. Thus, **SG80 is met.**

References

ICCAT (2016a), ICCAT (2018), Ortiz de Zárate et al 2018.

| | |
|---|---|
| **Overall Performance Indicator score** | **80** |
| Condition number (if relevant) | **N/A** |

## 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 |
| **a** | Appropriateness of assessment to stock under consideration | | | |
| | Guide post | | 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. |
| | Met? | | **Yes** | **No** |

**Rationale**

In the 2013 assessment, several model formulations (MFCL, SS3, VPA and ASPIC) with varying degrees of complexity were used (ICCAT 2016a). This allowed to model different scenarios that represented different hypotheses, and to characterize the uncertainty around the stock status. The results showed that although the range of estimated management benchmarks was relatively wide, most models were in agreement that the stock was overfished, but not currently undergoing overfishing. The analyses conducted in 2013 took a large amount of data preparation and scrutiny, and the group suggested that future assessment updates be conducted using simpler models (e.g. production models). In 2016, the Biodyn algorithm for a biomass dynamic model based on ADMB, which is available in the mpb package of the FLR project (www.flr-project.org) repository was used to conduct stock assessment of the North Atlantic albacore. Biodyn was validated against ASPIC, as it provided the same results using the 2013 assessment inputs and assumptions, and it is the algorithm that is used in the MSE framework.
For the 2016 assessment, the group selected 5 CPUE series to be used in a production model framework (Figure 2 in background section). Major features relevant to the biology of the species are shown in Table 1.2.4.1.

**Table 1.2.4.1.** Biological parameters and conversion factors for the North Atlantic albacore stock used within the stock assessment (ICCAT, 2016a)

| *North Stock* | *Parameters* | *Source* |
|---|---|---|
| Growth | $L\infty = 122.198$cm; $k = 0.21$; $t_0 = -1.338$ | Santiago and Arrizabalaga, 2005 |
| | $L\infty = 124.74$cm; $k = 0.23$; $t_0 = -0.9892$ | Bard, 1981 |
| Length-weight relationship | $a=1.339 \times 10^{-5}$ $b=3.1066$ | Santiago, 1993 |
| Maturity | 50% of mature fish at 90 cm (age 5) | Bard, 1981 |
| Natural mortality | $M = 0.3$ per year | |
| M at age (1 to 15) | 0.63; 0.46; 0.38; 0.34; 0.31; 0.29; 0.31; 0.34; 0.38; 0.44; 0.55; 0.55; 0.55; 0.55; 0.55 | Anon., 2010 |

The assessment is appropriate for the stock and for the HCRs. **SG80 is met.**

Although biological information exists and was used in the past in more sophisticated assessments, production models do not incorporate life-history information. Thus, the current simplified approach does not use biological data or other information on the nature of the fishery. Until more evidence of explicit incorporation of the life history information in the stock assessment and/or MSE is presented **SG100 is not met**.

| | | | | |
|---|---|---|---|---|
| **b** | Assessment approach | | | |
| | Guide post | The assessment estimates stock status relative to generic reference points appropriate to the species category. | The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated. | |
| | Met? | **Yes** | **Yes** | |

Rationale

In 2016, the estimated population was projected under both alternative TACs and HCRs, as combinations of target fishing mortality ($F_{TAR}$), threshold biomass ($B_{THRESH}$) and an interim biomass limit reference point ($B_{LIM}$) of 0.4 $B_{MSY}$, therefore the assessment estimates stock status relative to generic reference points appropriate to the species category; **SG60 is met**.
During 2017, the testing of candidate reference points (e.g., $SSB_{THRESHOLD}$, $SS_{BLIM}$ and $F_{TARGET}$) and associated harvest control rules (HCRs) that would support the management objective were refined, a set of alternative HCRs

were tested by projecting a wide range of simulated albacore populations in a management strategy evaluation (MSE) framework (ICCAT, 2018). The MSE used was tailored specifically to support the process to discuss and eventually adopt an HCR for North Atlantic albacore in 2017 but not to provide TAC recommendation, therefore it is evident that the assessment estimates stock status relative to reference points that are appropriate to the stock; **SG80 is met**.

| | Uncertainty in the assessment | | | |
|---|---|---|---|---|
| **c** | 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 **probabilistic** way. |
| | Met? | **Yes** | **Yes** | **Yes** |

**Rationale**

Several sensitivity analyses, namely considering a logistic production function, the information content of the data, i.e. length of the catch time series (truncated at 1975), and the impact of dropping one of the five CPUE indices at a time. Historical absolute biomass estimates were not very sensitive to the effect of truncating the time series in 1975 and the production functions estimated in both scenarios resulted in a similar increase in biomass in the recent years. However, other scenarios demonstrated higher sensitivity of historical absolute biomass trends (in the period prior to 1975 for which only catch information was considered) as well as K and r, to the data used. Relative to MSY benchmarks, the historic sensitivities were reduced, but recent status indicators were more sensitive. When a logistic function was assumed in the biomass dynamic assessment model lower values of $B/B_{MSY}$ were predicted for the trajectory over the whole time series, while excluding the Chinese Taipei longline resulted in much larger values of $B/B_{MSY}$ in the recent period. The sensitivity analyses with respect to the other indices did not show strong deviations from the Base Case and all predicted the stock to be in the green quadrant, although the recent status varied across scenarios.
Considering the above, the assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way. The probability of the stock currently being in the green area of the Kobe plot (not overfished and not undergoing overfishing, $F<F_{MSY}$ and $B>B_{MSY}$) is 96.8% while the probability of being in the yellow area (overfished, $B<B_{MSY}$) is 3.2%. The probability of being in the red area (overfished and undergoing overfishing, $F>F_{MSY}$ and $B<B_{MSY}$) is 0%. Thus, **SG60, SG80 and SG100 are met**.

| | Evaluation of assessment | | | |
|---|---|---|---|---|
| **d** | Guide post | | | The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored. |
| | Met? | | | **Yes** |

Rationale

In the 2013 assessment, several model formulations (MFCL, SS3, VPA and ASPIC) with varying degrees of complexity were used. This allowed to model different scenarios that represented different hypotheses, and to characterize the uncertainty around the stock status. The results showed that although the range of estimated management benchmarks was relatively wide, most models were in agreement that the stock was overfished, but not currently undergoing overfishing. The analyses conducted in 2013 took a large amount of data preparation and scrutiny, and the group suggested that future assessment updates be conducted using simpler models (e.g. production models). In 2016, the Biodyn algorithm for a biomass dynamic model based on ADMB, which is available in the mpb package of the FLR project (www.flr-project.org) repository was used to conduct stock assessment of the North Atlantic albacore. Biodyn was validated against ASPIC, as it provided the same results using the 2013 assessment inputs and assumptions, and it is the algorithm that is used in the MSE framework (ICCAT, 2016a).
Considering the above, the assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored, therefore **SG100 has been met.**

| | Peer review of assessment | | | |
|---|---|---|---|---|
| e | Guide post | | The assessment of stock status is subject to peer review. | The assessment has been **internally and externally** peer reviewed. |

| | | | | |
|---|---|---|---|---|
| | Met? | | **Yes** | **Yes** |

Rationale

The SCRS meet annually and discuss the data, model assumptions and results. This meeting is attended by numerous stock assessment scientists, therefore the assessment of the stock status is subject to peer review. **SG80 is met**.

The latest benchmark assessment on the albacore stock was in 2013 and it was externally reviewed by Adam Doak Langley. This can be checked in the list of participants of the report of the report issued (ICCAT 2013) and it was confirmed by Haritz Arrizabalaga (AZTI researcher and active member of the SCRS and chair of the albacore Working Group since 2007) to the team during the remote meeting held as part of the P1 assessment upgrade. Further, in 2018 an external peer review was conducted (Sculley, 2018) and it confirmed that, overall, the MSE framework appears to be scientifically sound and robust to uncertainty, therefore **SG100 has been met.**

**References**

ICCAT (2013), ICCAT (2016a), ICCAT (2018), Sculley (2018).

| | |
|---|---|
| **Overall Performance Indicator score** | **95** |
| Condition number (if relevant) | **N/A** |

# 8 Appendices

## 8.1 Assessment information

### 8.1.1 Previous assessments

The fishery got the MSC certification on the 7th of June 2016. This fishery was assessed against version 1.3 of the MSC Certification Requirements and using version 1.3 of the MSC Full Assessment Reporting Template. However, following the MSC Notice, *"Scoring of 'available' Harvest Control Rules (HCRs) in CRv1.3 fisheries"* (issued on 24 November 2014), PI 1.2.2 SI (a) and (c) were scored using CR v2.0 provisions for SG60 scoring.

As presented in **Table 8-1**, 3 conditions were raised as a result of the initial assessment to both UoCs on Performance Indicators (PI) 1.1.1 (Stock status), 1.2.2. (HCRs and tools), and 3.2.1 (Fishery specific objectives). While for the pole and line fleet (UoC2) another 2 conditions were raised on PI 2.3.1 (ETPs outcome) and 2.3.3 (ETPs information).

The two conditions on P1 (conditions 1 and 2) were closed during the first two surveillance audits, as a result of both the outputs of the latest stock assessment on the North Atlantic albacore (conducted on 2016) and the progress made by the ICCAT on developing and adopting of a Management Strategy Evaluation (MSE) and HCRs for this stock. As a result, PI 1.1.1 and PI 1.2.2 were re-scored. Also, based on more detailed information on species composition of the catches provided by observer program on board the UoCs lead the team to re-score tables on primary species (PI2.1.1, PI2.1.2 and PI2.1.3) for both UoCs during the first surveillance audit (Monteagudo and Rios 2017). Besides, as a result of the harmonisation process with the US North Atlantic swordfish fishery, scores of PIs 1.1.1, 1.2.3 and 1.2.4 were modified during the 2 SA (Kirchner & Rios 2018). As a result of the 3rd surveillance audit condition on PI 3.2.1 was closed and the PI re-scored to 80. The other 2 conditions that remain open were found to be on target (PI2.3.1) and behind target (PI 2.3.3) respectively.

**Table 8-1.** Summary of assessment conditions

| Condition | PI(s) | Year closed | Justification |
|---|---|---|---|
| Evidence must be presented that the stock is at or fluctuating around its target reference point. | 1.1.1 (Both UoCs) | 2017 | Based on the results of the latest SCRS stock assessment (ICCAT 2016a) |
| Well defined harvest control rules that are consistent with the harvest strategy and ensuring that the exploitation rates are reduced as limit reference points are approached shall be in place by year 4 | 1.2.2 (Both UoCs) | 2018 | Based on the HCRs included in ICCAT Rec 17-04 (ICCAT 2017) |
| Evidence must be presented to ensure that sufficient and adequate information on direct effects from the fishery is available to ensure the impacts are highly unlikely to create unacceptable impacts to ETP species | 2.3.1 (UoC1) | Still open | N/A |
| Evidence must be presented to ensure that: (i) Sufficient information is available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species; (ii) Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species. | 2.3.3 (UoC1) | Still open | N/A |
| The client is required to work actively to achieve short and long-term objectives, consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, that direct policy together with a functioning operational framework (measures and strategies) that requires the use of the resource to be responsible and sustainable. | 3.2.1 (Both UoCs) | 2019 | New fishery-specific regulations establishing objectives, such as Rec 16-06, 17-04. Also the adoption of an internal code of conduct by the certified fleet. |

### 8.1.2 Small-scale fisheries

To help identify small-scale fisheries in the MSC program BV provides the following information, in accordance to the MSC reporting template.

**Table 8-2.** Small-scale fisheries

| Unit of Assessment (UoA) | Percentage of vessels with length <15m | Percentage of fishing activity completed within 12 nautical miles of shore |
|---|---|---|
| UoC1 (Troll) | 35% | Unknown |
| UoC2 (P&L) | 0% | Unknown (they might perform some operations within the 12NM, but most of the fishing activity occurs outside this area, sometimes even reaching in international waters) |

## 8.2 Evaluation processes and techniques

### 8.2.1 Site visits

Notification of the third annual surveillance audit and undertake a P1 assessment upgrade for this fishery was posted on the MSC website on 16th May 2019. In addition, 64 different stakeholders were contacted via e-mail including Spanish fishers and manager representatives, ICCAT Secretariat, research centres (AZTI, IEO, IFREMER) and NGOs (WWF, Oceana, Greenpeace, PEW, Seo-Birdlife, ISF).

The site visit was carried out remotely, so different conference calls with relevant stakeholders were organized between the June 17 and 18, 2019. The agenda of the meetings held is presented in **Table 8-3.**

During the site visit, the team conducted assessment activities in accordance with FCP 7.28.15-18. Further, due to the P1 assessment upgrade, a particular emphasis was placed on updating all relevant information related to P1 issues.

**Table 8-3**. Agenda of the meetings held as part of the remote audit. All meetings were carried using Skype. BV team attended to all meetings

| Day | Time | Institutions | Atendees | Position |
|---|---|---|---|---|
| June 17 | 10:00-12:00 | AZTI | Aritz Harrizabalaga | AZTI senior researcher |
| | | | Andrés Uriarte | AZTI senior researcher (coordinator of fishery monitoring program developed through the client action plan) |
| June 18 | 11:00-12:00 | Spanish General Secretariat of Fisheries (SGP) | Ramón de la Figuera | General director, SGAORP |
| | | | Gloria del Cerro | SGAORP |
| | | | Elena Consuegra | SGAORP |
| | | | Guillermo Bravo Téllez | Fisheries Inspector, SGCI |
| | 13:00-14:00 | Client group (MSC-Fishery certificate) | Enrique Paz | OPACAN Secretary |
| | | | Miren Garmendia | OPEGUI Secretary |
| | | | Mario Pidal | Technical Assistant |

### 8.2.2 Stakeholder participation

The remote visit for the surveillance audit was announced at the MSC website. In addition, 64 stakeholders were contacted via e-mail (see above).

Further, the team with the assistance of the client elaborated a list of key stakeholders to be interviewed and were contacted via email/telephone in order to ensure their participation during the site visit and arrange the meetings. The list of institutions and people finally interviewed during the site visit is detailed in table 8-3. Although the trolling fleet from Asturias only entered into the certification this year (2019), the team decided to include them in the call held with the client group. A representative of the Nueva Rula de Aviles participated in the call with the client.

**Table 8-4** presents the main topics discussed with the different stakeholders during the different meetings. All relevant information collected on updates or modifications affecting the fishery and the information on the progress towards the completion of the existing conditions was presented in the 3rd surveillance

audit report (Kirchner and Rios 2019), while information referred to P1 issues has been summarised in **Section 7.2** of the current report. All documents used for the P1 assessment upgrade are listed in **Section 7.2.4** (References).

**Table 8-4.** Details of the main topics discussed during the calls held as part of the remote audit for the North Atlantic artisanal albacore fishery

| Stakeholder | Topics discussed |
|---|---|
| **AZTI** | - Update of the landings of the Basque fleet in Basque ports in 2018. Does AZTI have data on the landings of the Basque fleet in other ports?<br>- Update of the results of the monitoring of the fishery by observers in 2018<br>- Participation in the SCRS. Feedback / developments in the implementation and monitoring of the multi-year management plan. Update on the monitoring of the stock status<br>- Progress in the development process of the MSE, including the peer review process contemplated in Rec 17-04.<br>- Publications relevant to this fishery included in the Collective Volume of Scientific Papers during 2018 or submitted in 2019<br>- Considerations on ICCAT Rec 16-14 and its implementation in certified fleets |
| **SGP** | - N inspections carried out in 2018 to certified fleets. Number of defaults, severity and cause.<br>- Confirm nice final northerly quota allocated to Spain in 2018<br>- Consumption quota in 2018 and close of campaign<br>- Species composition of the landings of the certified fleet in 2018 (during fishing targeting northern bonito), including bait catches in bait mode<br>- Update of the list of vessels of troll and live bait with / without VMS and with / without electronic logbook<br>- Authorizations 2018 and 2019 (can you have the ship listings?)<br>- Participation in ICCAT. Feedback / news regarding the implementation of the multi-year management plan. Decisions adopted at the last meeting of the Commission.<br>- Implementation of ICCAT Rec 16-14 on minimum standards in national observer programs<br>- Any significant change in the Spanish fisheries administration (charges, structure, legislation) since June 2018 (in relation to this fishery)? Are there any changes to the Order of February 17, 1998?<br>- Comment the de minimis exception for the French trawler fleet<br>- Last update of the AED, any later than May 2017? |
| **Client group** | - Catches made during the 2018 campaign, both in cacea and bait, for each of the Federations / OOPP<br>- Updates in the list of boats.<br>- Update on-board observer results (Cantabrian fleet) and / or data collected by the fleet itself on incidental catches<br>- How many boats in the certified racing fleet do not have the VMS and / or the DEA installed?<br>- Any change that affects the traceability of the product once downloaded? |

### 8.2.3 Evaluation techniques

The current assessment was limited to P1. This assessment was restricted to a single stock: the North Atlantic albacore. RBF was not triggered since this stock is not considered to be data deficient, in accordance with FCP 7.7.3.

The team evaluated the assessment components using all requirements in MSC FCP Annex SA2 following the process as described in FCP Section 7.17. After the site visit, each expert worked on specific sections of the report before proceeding to discuss and agree on final scores for all PIs through a conference call.

The North Atlantic Albacore Artisanal Fishery achieved an overall score of 80 or more for the Principle 1 and did not score less than 60 for any of the P1 scoring issues. Therefore, fishery complies with the MSC requirements (FCR v2.0) for Principle 1 and no conditions were raised. Default performance indicators and the scores allocated in the evaluation are shown in Table 6 2.

### 8.2.4 Modified assessment tree – delete if not applicable

Default assessment tree was used for the assessment upgrade.

## 8.3 Peer Review reports

### 8.3.1 PR-A report

Report from Peer Reviewer A is presented below, together with CAB responses:

- General comments

| Question | Yes/No | Peer Reviewer Justification (as given at initial Peer Review stage). Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables. | CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR) |
|---|---|---|---|
| Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report? | Yes | As this was a v2.0 upgrade, scoring was limited to P1. The P1 scores were consistent with the additional analyses and evaluations related to the definition of limits, targets and their implementation. Also, significant work has been done on Management Strategy Evaluations and the definition and implementation of a control rule. Additionally, P1 scores were harmonized with the N Atl albacore portion of a certified N Atl swordfish fishery. | No other comments needed |
| Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.1, 7.18.1 and sub-clauses] | Yes | This evaluation is an upgrade to V2.0 referring to Principle 1, only. No conditions were set on P1 for this assessment using v2.0. Prior to this new assessment the previous conditions on 1.1.1 and 1.2.2 and 3.2.1 were closed I agree with this determination.<br>Two conditions on the troll fisheries carried over from the previous certification on 2.3.1 and 2.3.3 are still extant. The answer to this question is yes. | No other comments needed |
| Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses] | Yes | This evaluation is an upgrade to V2.0 referring to Principle 1, only. No conditions were set on P1 for this assessment using v2.0. Prior to this new assessment the previous conditions on 1.1.1 and 1.2.2 and 3.2.1 were closed I agree with this determination.<br>Two conditions on the troll fisheries carried over from the previous certification on 2.3.1 and 2.3.3 are still extant. The answer to this question is yes. | No other comments needed |
| Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities? | Yes | Not an enhanced fishery. Therefore, the answer to this question is a de facto yes. | No other comments needed |
| Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary) | N/A | The draft report provides a good summary of the new information and it's relevance to v2.0. This document is an important explanation of the progress in implementing HCRs in tuna fisheries, in general. Well done.<br><br>Minor editorial: "click here" in 3rd line of Executive Summary doesn't seem to have a link.<br><br>I'm not sure what makes this fishery "artisanal" relative to many other troll/pole and line tuna fisheries, and fisheries in general. I suppose this is a marketing device. (This is just an aside; This does not affect scoring or the overall good quality of the report) | The team thanks the reviewer's acknowledgment.<br><br>We've checked the link in the executive summary and it does work. In any case, we have inserted a footnote with the complete URL address.<br><br>The artisanal term was used in the initial assessment. It refers to the term in spanish 'pesca artesanal', which might be better translated as 'small-scale'. But the team agrees that it might be confusing, removal of this term would be reconsidered for the re-assessment |

- PI comments

| PI | PI Information | PI Scoring | PI Condition | Peer Reviewer Justification (as given at initial Peer Review stage) | CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR) | CAB Response Code |
|---|---|---|---|---|---|---|
| 1.1.1 | Yes | Yes | NA | Scoring Agreed<br>The PRI is set to be at BLim=0.4BMSY. The stock in 2015 was estimated to be 3.4 times that of BLim.<br>The fishing mortality must be below 0.8FMSY and it has been estimated (with 80% confidence<br>intervals) to be 0.54(0.35-0.72),<br>The stock is above the MSY; B2015/BMSY=1.36 (1.05-1.78). | No other comments needed | Accepted (no score change) |
| 1.1.2 | Yes | Yes | NA | Not Scored. Stock is not depleted | No other comments needed | Accepted (no score change) |
| 1.2.1 | Yes | Yes | NA | Scoring Agreed<br>Harvest strategy defined through ICCAT MSY objectives, TAC and implemented through binding Recommendations. Also, tested through MSEs. Only recently implemented though | No other comments needed | Accepted (no score change) |
| 1.2.2 | Yes | Yes | NA | Scoring Agreed<br>HCR defined through ICCAT binding recommendations and implemented. Also, tested through MSEs. Recent TAC reflects the HCR. Only recently implemented though | No other comments needed | Accepted (no score change) |
| 1.2.3 | Yes | No (no score change expected) | NA | Information on catches, discards bycatch is sufficient. Fishery monitored sufficiently.<br>Note all the Scoring Guideposts were designated as being met (1.2.3.a SG 60/80/100 met; 1.2.3.b SG/60/80/100 met;1.2.3.c SG 80 met).It seems inconsistent to give it an 80 overall for 1.2.3. Does this have to do with the harmonization? | The reviewer is correct about the inconsistency. The team made a mistake an forgot to modify the last bit of the rationale in accordance to harmonisation outcomes: SG100 is not met for neither (a) nor (b). Our initial score was 100, but since MRAG scores were lower it was decided to go for the MRAG scores. That's the reason why the overall score was 80 but the reationales were supporting 100. Rationales were modified to support overall score of 80. | Accepted (no score change) |
| 1.2.4 | Yes | Yes | NA | Scoring Agreed: Assessment uses multiple models/assumptions to evaluate status and uncertainty and results are reviewed. | No other comments needed | Accepted (no score change) |

## 8.4 Stakeholder input

Up to the preparation of the Client and Peer Review Draft Report, stakeholder input has been restricted to the information collected during the calls held and the documents sent by the stakeholders as a result of the requests made by the team during those meetings. No other stakeholder inputs were received by email using the template provided by MSC.

### 8.4.1 MSC Technical Oversight letter

| SubID | PageReference | Grade | RequirementVersion | OversightDescription | Pi | CABComment |
|---|---|---|---|---|---|---|
| 29547 | Page 8 | Guidance | FCR_7.12.1.1 v2.0 | Please clarify how are the new client group fleets (listed in August 2019) maintained their traceability? Has the new fleets implemented the same traceability system utilised by existing fleets? | | No details concerning traceability has been included in this report since Appendix B of the MSC response to the combined tuna fishery variation request stated that this section is not applicable for this P1 assessment upgrade.<br>The entire spanish fleet targeting albacore uses the same traceability system (electronic logbook, landing declarations and sales notes that can be crosscheck against records from the auction points –lonjas-) |
| 29548 | Page 7 | | | The vessel list hyperlinks in UoA & UoC tables do not work. | | Corrected |

### 8.4.2 ISSF comments

- General Comments

| General comments | Evidence or references | CAB response to stakeholder input | CAB Response Code |
|---|---|---|---|
| According to Section 8.8 "Harmonized fishery assessments", BV accepted MRAG's score for PI 1.2.4(a) and consider that SG100 is not met. However, this has not been updated on the scoring tables on page 35 of the report. | | The comment is correct. It seems that we skipped to include that correction and modify the rationale and the score. Now both rationale and score were adjusted according to the harmonisation. Tables 5-3 and 7-1 of the report summarising P1 score and Pis scores were also corrected. thanks! | Accepted (non-material score reduction) |

- **PI Comments**

| Performance Indicator (PI) | Input summary | Input detail | Evidence or references | Suggested score change | CAB response to stakeholder input | CAB response code |
|---|---|---|---|---|---|---|
| **Principle 1** - Sustainable fish stocks | | | | | | |
| **1.1.1** - Stock status | | | | | | |
| **1.1.2** - Stock rebuilding | | | | | | |
| **1.2.1** - Harvest strategy | The independent report by Medley et al. (2019) indicates that the fishery would not meet SG100 for SI 1.2.1.a and 1.2.1.b and that, as a result, the overall PI score would be less than 100. | The independent report by Medley et al. (2019) indicates that the fishery would not meet SG100 for SI 1.2.1.a and 1.2.1.b and that, as a result, the overall PI score would be less than 100:<br><br>**1.2.1.a**: "(...), fishing mortality rates have been reduced over the last decade, responding to the perceived status of the stock. There are clear objectives to maintain the stock around the MSY biomass and the harvest strategy elements are working together to achieve this. Thus, the strategy meets SG80.<br>However, the strategy has been relatively imprecise and lacks a range of components including defining an appropriate mix of capacity by gear types, so it cannot be considered designed and therefore does not yet meet SG100."<br><br>**1.2.1.b**: "(...) The available evidence indicates that the harvest strategy is achieving its objectives, meeting SG80. However, there need to be further evaluations of the stock status to confirm these expectations, and more broadly, the harvest strategy has only been considered in fairly narrow terms (total catch) and has not yet considered wider context of the fishery, so SG100 is not met yet. However successful implementation of a system with a harvest control rule could lead to a higher score." | Medley et al. (2019) | 80 | This has been harmonized with MRAC,. Both teams considered that the scores and rationales were appropriate. Therefore it is best to keep the score as is. | Not accepted (No score change) |
| **1.2.2** - Harvest control rules and tools | | | | | | |
| **1.2.2** - Harvest control rules and tools | | | | | | |
| **1.2.3** - Information and monitoring | | | | | | |
| **1.2.4** - Assessment of stock status | | | | | | |
| **Principle 2** - Minimising environmental impacts | | | | | | |
| **2.1.1** - Primary species outcome | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **2.1.2** - Primary species management | | | | | | |
| **2.1.3** - Primary species information | | | | | | |
| **2.2.1** - Secondary species outcome | | | | | | |
| **2.2.2** - Secondary species management | | | | | | |
| **2.2.3** - Secondary species information | | | | | | |
| **2.3.1** - ETP species outcome | | | | | | |
| **2.3.2** - ETP species management | | | | | | |
| **2.3.3** - ETP species information | | | | | | |
| **2.4.1** - Habitats outcome | | | | | | |
| **2.4.2** - Habitats management strategy | | | | | | |
| **2.4.3** - Habitats information | | | | | | |
| **2.5.1** - Ecosystem outcome | | | | | | |
| **2.5.2** - Ecosystem management strategy | | | | | | |
| **2.5.3** - Ecosystem information | | | | | | |
| **Principle 3** - Effective management | | | | | | |
| **3.1.1** - Legal and/or customary framework | | | | | | |
| **3.1.2** - Consultation, roles and responsibilities | | | | | | |
| **3.1.3** - Long term objectives | | | | | | |
| **3.2.1** - Fishery-specific objectives | | | | | | |
| **3.2.2** - Decision-making processes | | | | | | |
| **3.2.3** - Compliance and enforcement | | | | | | |
| **3.2.4** - Monitoring and management performance evaluation | | | | | | |

## 8.5 Conditions

No conditions were raised as a result of current P1 assessment upgrade

## 8.6 Client Action Plan

N/A

## 8.7 Surveillance

The surveillance program and timing is copied from section 5.3 (Revised surveillance program) of the 3rd surveillance audit report (Kirchner & Rios 2019).

The surveillance category established at the Public Certification Report (PCR) was Normal (scored 3 according to FRC v1.3, equivalent to level 6 according to FRC v2.0) and subsequent surveillance programme included 4 on-site visits. No modifications occurred at the first surveillance audit. However, at the time the second surveillance audit was announced Bureau Veritas determined that the fishery was eligible for a reduction of surveillance level down to surveillance level 4 (FCRv.2.), entailing 2 on-site and 2 off-site audits (see **table 8-5**).

It is expected that subsequent surveillance audit will take place close to the anniversary date of the fishery (June 2020). Therefore, no changes to the timing of the surveillance audit left is presented (see **table 8-6**).

The next surveillance audit is scheduled at the same time as the re-assessment site visit. Therefore, an on-site visit involving a whole assessment team (3 experts) is expected for the next year (see **table 8-7**).

**Table 8-5.** Fishery surveillance program

| Surveillance level | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|
| Level 4 | On-site surveillance audit | Off-site surveillance audit | Off-site surveillance audit | On-site surveillance audit & re-assessment site visit |

**Table 8-6.** Timing of surveillance audit

| Year | Anniversary date of certificate | Proposed date of surveillance audit | Rationale |
|---|---|---|---|
| 4 | June 2020 | June-May 2020 | N/A |

**Table 8-7.** Surveillance level rationale

| Year | Surveillance activity | Number of auditors | Rationale |
|---|---|---|---|
| 4 (2020) | On-site | 3 | 4th surveillance audit and re-assessment site visit |

## 8.8 Harmonised fishery assessments – delete if not applicable

**Table 8-8**. Overlapping fisheries

| Fishery name | Certification status and date | Performance Indicators to harmonise |
|---|---|---|
| US North Atlantic swordfish ( | Certified since 2013, scope extended to NA albacore since 2018 | All P1 PIs |

**Table 8-9**. Overlapping fisheries

| Supporting information | |
|---|---|
| The only overlapping fishery subject to harmonization with the assessed fishery is the US North Atlantic swordfish (click **here** to access the fishery assessments at the MSC website), since this fishery extended the scope of the certificate to include North Atlantic albacore. This process was completed in 2018 and several harmonization meetings with MRAG-America were held that year as part of the second surveillance audit of this fishery (see Kirchner & Rios 2018 for more details of the harmonization activities and outcomes). As a result of the harmonization process, consensus was reached on scores for PI 1.1.1, 1.2.2, 1.2.3 and all SIs for 1.2.4 but SI(a) and these PIs were re-scored during the second surveillance audit of the North Atlantic albacore artisanal fishery (Kirchner & Rios 2018). This harmonization was performed using MSC V1.3. Therefore, the only scoring difference remaining after the harmonization process performed in 2018 was on PI1.2.4(a): the team from MRAG-America considered that SG100 is not met, while the BV team considered SG100 is met.<br><br>At the moment of completing this report, MRAG is also busy with their surveillance audit and P1 assessment upgrade. As part of the current P1 assessment upgrade, BV approached MRAG-America in order to share the new outcomes against v2.0 and reconsider the existing scoring difference, since PB1.3.3.4(ii) states that: "in the event the discussion does not lead to agreement among teams, the lowest score(s) shall be adopted by all teams". Several emails were exchanged between the two CABs between 30/08 and 16/09. As a result of this exchanged it was agreed that:<br><br>(i) MRAG considered appropriate the scores and rationales provided for the P1 (except PI1.2.4.(a))<br>(ii) BV accepted to MRAG score for PI1.2.4(a), so overall score for PI12.4. is 95, and not 100. | |
| Was either FCP v2.1 Annex PB1.3.3.4 or PB1.3.4.5 applied when harmonising? | **No** |
| Date of harmonisation meeting | **Emails were exchanged between 30/08 and 16/09** |
| If applicable, describe the meeting outcome | |
| Despite the BV team considered that current rationale could support that SG60, SG80 and SG100 for PI1.2.4(a), it was agreed to accept MRAG scoring and consider that SG100 is not met.<br>All the other scores were already harmonised last year against V1.3, since 'new' scores were consistent with 'old' there was no need to proceed with further activities. | |

**Table 8.10 – Scoring differences**

| Performance Indicators (PIs) | North Atlantic Albacore Artisanal Fishery MSC v2.0 | US North Atlantic swordfish MSC v1.3 |
|---|---|---|
| **PI 1.1.1** | **100** | **100** |
| **PI 1.1.2** | **N/A** | **80** |
| **PI 1.2.1** | **100** | **100** |
| **PI 1.2.2** | **80** | **80** |
| **PI 1.2.3** | **80** | **80** |

| | | |
|---|---|---|
| **PI 1.2.4** | **95** | **95** |

**Table 8.11 – Rationale for scoring differences**

| |
|---|
| If applicable, explain and justify any difference in scoring and rationale for the relevant Performance Indicators (FCP v2.1 Annex PB1.3.6) |
| As shown in Table 8.11 there are no scoring differences |
| If exceptional circumstances apply, outline the situation and whether there is agreement between or among teams on this determination |
| N/A |

## 8.9 Objection Procedure – delete if not applicable

**To be added at Public Certification Report stage**

The report shall include all written decisions arising from a 'Notice of Objection', if received and accepted by the Independent Adjudicator.

Reference(s): FCP v2.1 Annex PD