November 26th, 2016

Comments regarding the Public Certification Draft Report of the North and South Atlantic swordfish Spanish longline fishery

Dear Macarena G. Silva,

Thank you for the opportunity to comment on the Public Comment Draft Report (PCDR) for the North and South Atlantic swordfish Spanish longline fishery on behalf the undersigned organizations: Shark Trust, Project AWARE, SUBMON, Ecology Action Centre and WWF.

While these NGOs applaud the efforts of CEPESCA and ORPAGU for their commitment to meet the MSC standard, our review of the PCDR has identified serious shortcomings with the fishery assessment. We present our concerns on the following pages. The issues which we raise are fundamental and we conclude at this stage with current shortcomings in management, best practice and level of compliance of the fishery, it has not been shown to meet the MSC's global environmental standard for sustainable fisheries and therefore a MSC certification cannot be justified.

Regarding Principle 2, we have serious general concerns regarding the lack of governance and management of sharks species in the affected area, at EU and ICCAT levels-; both in the case of target fisheries and as bycatch. These gaps affect the Spanish fleet operating in the Atlantic, part of it under current MSC certification process:

- The lack of enforcement of the observer programme,
- The lack of compliance of the UoA with reporting requirements regarding protected shark species and marine turtles.
- Lack of proper implementation of action plans to reduce shark species bycatch in EU
- Mitigation measures to minimize catch and mortality of protected sharks
- the lack of scientific stock assessment for many sharks species and with important uncertainties in the case of Atlantic Blue and Shortfin Mako stocks
- Only a type of reference catch limit has been established for North Atlantic Blueshark by ICCAT (November 2016), there is no precautionary measures for South Atlantic stock.
- No catch limits for Atlantic Shortfin Mako or other sharks species.
- Lack of reference points and Harvest Control Rules
- No multi-annual plans in place under CFP or ICCAT to keep Blue and Mako above MSY

- Lack of spatial-time management measures to protect sharks juvenile or mating aggregations
- Poor control and inspection scheme in no-EU ports where catches are also landed

On regard MSC assessment, these are main shortcomings:

- No precautionary approach although shark species complex contain high risk species and fishery main catch are composed by Blue and other Elasmobranches.
- No management and insufficient measures for shark are not sufficiently discussed
- Most of shark stocks are data deficient and discard rates are greatly unknown
- Missing spatial effort Analysis (EEZs, seamounts are not discussed)
- The CAB largely ignores the fact that catches of protected species and discards of commercially non relevant species have systematically not been reported by the MSC fleet to the relevant national and international authority, in contravention of national laws and regulations.

We look forward to your feedback and to understand how you will address these issues.

Thank you for your consideration and reply.

Sincerely,

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• **SECTION 4** • Return to Page 4

Assessment Stage	Fishery	Date	Name of Individual/Organisation Providing Comments
☒ Public review of the draft assessment report[5] Opportunity to review and comment on the draft report, including the draft scoring of the fishery.	North and South Atlantic swordfish Spanish longline fishery	26.11.2016	Shark Trust, Project AWARE, SUBMON, Ecology Action Centre,WWF

☒ I wish to comment on the evaluation of the fishery against specific Performance Indicators.
A table with these indicators and the scores and rationales provided by CABs can be found in Appendix 1 of the draft assessment report.

Nature of comment *(Please insert one or more of these codes in the second column of the table below for each PI.)*

1. I do not believe all the relevant information[6] available has been used to score this performance indicator *(please provide details and rationale)*.
2. I do not believe the information and/or rationale used to score this performance indicator is adequate to support the given score[7] *(please provide details and rationale)*.
3. I do not believe the condition set for this performance indicator is adequate to improve the fishery's performance to the SG80 level[8] *(please provide details and rationale)*.
4. Other *(please specify)*

[5] MSC Fisheries Certification Requirements, v2.0 section 7.15
[6] MSC Fisheries Certification Requirements, v2.0 section 7.10
[7] MSC Fisheries Certification Requirements, v2.0 section 7.10
[8] MSC Fisheries Certification Requirements, v2.0 section 7.11

Performance Indicator		Nature of Comment Indicate relevant code(s) from list above.	Justification Please support your comment by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary.
General comments Principle 2 and 3	No access to key information	4	**Please see attached report**
	Use of RBF		
PI 2.1.1a Primary species outcome UoA1		1, 2	
PI 2.1.1 Primary species outcome UoA2		1, 2	
PI 2.1.3 Primary species information UoA1 & UoA2.		1, 2	
PI 2.2.1 Secondary species outcome UoA1 & UoA2		1, 2	
PI 2.2.2 Secondary species management strategy UoA1 & UoA2.		1, 2	
PI 2.2.3 Secondary species information UoA1 & UoA2.		1, 2	
PI 2.3.1 ETP species outcome UoA1 & UoA2		1, 2	
PI 2.3.2 ETP species management strategy UoA1 & UoA2.		1, 2	
PI 2.3.3 ETP species information UoA1 & UoA2.		1, 2	
PI 2.5.1 Ecosystem outcome UoA1 & UoA2		1, 2	
PI 2.5.3 Ecosystem information UoA1 & UoA2		1, 2	
PI 3.2.2 Decision-making processes		1, 2	
PI 3.2.3 Compliance and enforcement UoA1 & UoA2		1, 2	

Comment on the Public Comment Draft Report (PCDR) for the North and South Atlantic swordfish Spanish longline fishery

by Shark Trust, Project AWARE, SUBMON, Ecology Action Centre and WWF
26th October 2016

General comments

No access to key information - Spatial distribution of fishing activity:

The only information regarding the spatial distribution of fishing activity of the UoC is a generalized, low resolution map of average fishing activity of the whole Spanish surface longline fleet during the period 1986-2011 (Figure 5, PCDR page 17). This information is insufficient to correctly assess the UoC against the MSC Standard. For a stakeholder who wishes to assess fleet activity in regard to ecosystems and species, a realistic overview of the fishing activity hotspots in the recent years is prerequisite. WWF conducted an analysis of the fishing activity of UoA during the last 4 years using AIS data (this kind of data mining and technology is not yet available for most stakeholders). Our mapped showed that:

a) The UoA operates in several exclusive economic zones (EEZs) of EU and non EU countries. The fishing activities in those EEZs are not discussed in the assessment report. PCDR (p.245 and 246) states: The Spanish fleet fishing area is principally in international waters of the Atlantic Ocean.
   Fishing in EEZs is highly relevant for scoring some of the PIs (e.g. semi-coastal species in P2; national requirements for ETP species PI2.3.1, PI.2.3.2; and other PIs in the Management Principle 3). The assessment should be reviewed and justifications and scores adapted to include this fact.

b) >80% of the vessels of the UoA fished on seamounts in the High Sea during the last 4 years and half of the fleet is targeting seamounts on a regularly basis. Seamounts are hotspots of pelagic biodiversity in the open ocean and are known to harbor large aggregations of ETP species (Morato et al. 2010). Unsustainable by-catch of non-target species, including sea turtles, sharks and cetaceans, in long-lines are thought to be one of the severest threats to their ecosystems (Ospar 2010). There is a wide scientific and political consensus that seamounts at the High Sea need better protection (Norse et al 2005). The assessment report fails to discuss the high fishing effort of the UoC on seamounts and the consequences for ETP species and the local ecosystems (see comments PI 2.5.2). The PCDR does not even mention seamounts instead it states that the fishery takes place at the surface in deep oceanic water (p. 249). The assessment should be reviewed and justifications and scores adapted to include this fact.

Use of Risk Based Framework for Principle 2 Species

After reviewing the PCDR, we question why the CAB did not choose the MSC risk based framework method to evaluate the primary, secondary and ETP shark species caught in this fishery. The shark species impacted by this fishery are data deficient.

According to the MSC Fisheries Certification Requirements guidance v2.0 7.7.6.

The RBF should be used to score a PI if answers to the questions are 'no'.

Table 3

2.1.1 Primary species outcome & 2.2.1 Secondary species outcome	Stock status reference points are available, derived either from analytical stock assessment or using empirical approaches	Yes	Use default PISGs within Annex SA for this PI
		No	Use Annex PF (RBF) for this PI
2.3.1 ETP species outcome (where there are no national requirements for protection and rebuilding)	Can the impact of the fishery in assessment on ETP species be analytically determined?	Yes	Use default PISGs within Annex SA for this PI
		No	Use Annex PF (RBF) for this PI

Strong efforts were undertaken during the recent years to develop a reliable stock assessment for blue sharks and shortfin mako sharks. However, it is not an easy task, catch data are considered incomplete, and underestimated. There have been unaccounted discards and a substantial occurrence of finning over parts of the time series. Data reported to ICES, ICCAT and FAO vary significantly. Therefore, ICCAT uses F/FMSY and B/BMSY as reference points for stock status of this stock. These reference points are relative metrics rather than absolute values. The absolute values of BMSY and FMSY depend on model assumptions and results (e.g. absolute abundance varied by an order of magnitude between models with different structures). Limit reference points are not defined. Biological reference points are also not defined. Based on MSC vocabulary for Reference Points "Biological reference points; Stock Status Reference Points used to define management action in response to stock status" not even the MSY reference points can be counted as reference points because there are no management measures in place yet to respond to the predicted stock status.

Based on Table 3 (FCR 2.0) shortfin mako and blue shark should be classified as data-deficient and the use of the RBF should be triggered.

As well, there are neither stock status reference points nor stock assessments available for the following **main secondary species**.

Longfin mako shark (*Isurus paucus*), IUCN classified as "Vulnerable" (VU)
Tiger shark (*Galeocerdo cuvier*) IUCN classified as "Near Threatened" (NT)
Oceanic white tip shark (*Carcharhinus longimanus*) IUCN classified as "Vulnerable" (VU)
Silky shark (*Carcharhinus falciformis*) IUCN classified as "Near Threatened" (NT)
Crocodile shark (*Pseudocarcharias kamoharai*). IUCN classified as "Near Threatened" (NT)

In addition, catches of these species (excluding longfin mako sharks) are not included in the loogbooks of the fleet. These species are data deficient and should be scored with RBF. Independent Observer coverage is extremely low (1%, respectively 3%) and it is by far not enough to sufficiently to sample and to assess discarded protected shark species. Generally, for species that are highly variable, clumped in distribution and/or relatively rare, higher levels of observer coverage are needed (MSC 2014). Thus, the information available is not sufficient to assess the UoAs related mortality and impact and to determine whether the UoAs may be a threat to protection and recovery of these species.

There is also a clear indication that catches of protected sharks have systematically not been reported by the UoC, or have been misreported (see comment PI 3.2.3). There are no stock status reference points, no stock assessments, no mortality estimates available for *Sphyrna lewini, S. zygaena, S. mokarran* and the two thresher sharks species (*Alopias superciliosus, A.vulpinus*). Therefore the impact of the fishery in assessment on these species can not be analytically determined and a RBF should be triggered.

The use of the MSC Risk Base Framework would also enable a precautionary approach to better assess the strength of the management system and protection measures in relation to the RBF- Risk category.

Reviewed data to conduct a Productivity Susceptibility Analysis is readily available due to previous Ecological Risk Assessments of these species in the Atlantic (ICCAT -SCRS/2012/167, NOAA Technical Memorandum NMFS-NE-110) and modern surveillance and remote sensing technology (Quieroz 2016)

We are aware that an analysis based on the MSC risk framework should be developed in cooperation with the CAB. However, our preliminary results indicate very low MSC scores and high risk categories and that should trigger a very precautionary approach.

			Productivity Scores [1-3]								Susceptibility Scores [1-3]						Cumulative only						
Scientific name	Common name	Fishery descriptor	Average age at maturity	Average max age	Fecundity	Average max size	Average size at Maturity	Reproductive strategy	Trophic level	Density Dependance	Total Productivity (average)	Availability	Encounterability	Selectivity	Post-capture mortality	Total (multiplicative)	PSA Score	Catch (tons)	Weighting	Weighted Total	Weighted PSA Score	MSC PSA-derived score	Risk Category Name	MSC scoring guidepost
Prionace glauca	Blue shark	SLL	2	2	3	2	2	3	3		2,4	3	2	2	3	1,9	3,1	22250	1	3,07	3,1	65	Med	60-79
Isurus oxyrinchus	Shortfinned Mako	SLL	3	3	3	3	3	3	3		3,0	3	2	2	3	1,9	3,5	2500	1	3,54	3,5	43	High	<60
Lamna nasus	Porbeagle shark	SLL	3	3	3	3	3	3	3		3,0	2	2	2	3	1,6	3,4	50	1	3,39	3,4	50	High	<60

Primary Main Species. MSC RBF V. 2.02

			Productivity Scores [1-3]								Susceptibility Scores [1-3]							
Scientific name	Common name	Fishery descriptor	Average age at maturity	Average max age	Fecundity	Average max size	Average size at Maturity	Reproductive strategy	Trophic level	Density Dependance	Total Productivity (average)	Availability	Encounterability	Selectivity	Post-capture mortality	Total (multiplicative)	PSA score	MSC PSA-derived score	Risk Category Name	MSC scoring guidepost
Isurus paucus	Longfin Mako Shark	SLL	3	3	3	3	3	3	3		3,0	3	3	3	3	3,0	4,2	30	High	<60
Carcharhinus falciformis	Silky shark	SLL	2	2	3	3	2	3	3		2,6	3	3	3	3	3,0	4,0	42	High	<60
Carcharhinus longimanus	Oceanic whitetip shark	SLL	2	2	3	2	3	3	3		2,6	3	2	3	2	1,9	3,2	68	Med	60-79
Galeocerdo cuvier	Tiger shark	SLL	2	3	3	3	3	3	3		2,9	3	2	3	2	1,9	3,4	61	Med	60-79

Primary second species.MSC RBF V. 2.02

		Productivity Scores [1-3]								Susceptibility Scores [1-3]								
Scientific name	Common name	Average age at maturity	Average max age	Fecundity	Average max size	Average size at maturity	Reproductive strategy	Trophic level	Density dependance	Total Productivity (average)	Availability	Encounterability	Selectivity	Post-capture mortality	Total (multiplicative)	PSA Score	MSC PSA-derived score	Risk Category Name	MSC scoring guidepost
Alopias superciliosus	bigeye thresher	2	2	3	2	3	3	3		2,6	3	3	3	3	3,0	4,0	19	High	<60
Sphyrna mokarran	great hammerhead	3	3	3	3	3	3	3		3,0	3	2	3	3	2,3	3,8	28	High	<60

ETP Species. MSC RBF V. 2.02

Comments on specific PIs

PI 1.2.3 b for UoA 1&2

While the PI scores and scoring rationale have mainly followed the ICCAT Harmonization for P1 Report, we are concerned that this fleet does not meet the harmonization rationale for the accuracy of its information and coverage of observer and monitoring.

The observer coverage is extremely low in both UoAs and are, in fact, out of compliance with ICCAT requirements. ICCAT mandates at least 5% coverage and the assessment report notes that this fishery has only 1% coverage in the North Atlantic and 3% in South Atlantic.

According to ICCAT Rec. 2010-10: RECOMMENDATION BY ICCAT TO ESTABLISH MINIMUM STANDARDS FOR FISHING VESSEL SCIENTIFIC OBSERVER PROGRAM:
Notwithstanding additional observer program requirements that may be in place or adopted by ICCAT in the future for specific fisheries for the collection of scientific information, each Contracting Party and Cooperating non-Contracting Party, Entity, or Fishing Entity (CPC) shall ensure the following with respect to its domestic observer programs:

a) A minimum of 5% observer coverage of fishing effort in each of the pelagic longline, purse seine, and, as defined in the ICCAT glossary, baitboat fisheries, as measured in

> number of sets or trips for purse seine fisheries; fishing days, number of sets, or trips for pelagic longline fisheries; or in fishing days in baitboat fisheries;

This is reinforced by the Order AAA/658/2014 from the Spanish Government which regulates the surface longline fishing method for catching highly migratory species and establishes that the Spanish Government has to put in place the observer coverage program recommended for each RFMO and for this case ICCAT establish a minimum of 5%

The assessment team states:

> Observer coverage of the Spanish pelagic longline fishery is consistent with the recommendations of IEO scientist and the administration (1%) and is sufficient to characterize discards. While the SCRS has indicated concerns related to unreported landings and discards, overall these do not appear to be significant (ICCAT, 2015).

We must question this rationale. Where does the administration state this is sufficient coverage to characterise swordfish discards. In fact, SCRS suggests 20% observer coverage should be implemented, especially in wide ranging fleets such as this UoA to ensure accurate recording and monitoring of juvenile swordfish. The recommendations of an IEO scientist cannot supercede ICCAT requirements and Spanish law.

The fleet is well below industry standard, there is major concern over the accuracy of reporting and the statistically significant coverage of their observer program in both UoAs.

The rationale cannot be upheld and a score of 80 cannot be justified.

PI 2.1.1a Primary species outcome UoA1

Blue shark (*Prionace glauca*)

A score of 100 (high degree of certainty) can not be justified because the assessment results (ICCAT 2015) are uncertain (e.g. absolute abundance varied by an order of magnitude between models with different structures) and the authors explicitly stressed that the results should be interpreted with caution and that quantitative projections of future stock condition are not possible. Additionally, there are no biological reference points (like PRI) established for this stock.
At present, therefore, there are no firm limits, biological reference points, or estimates of sustainable mortality in place for blue or shortfin mako sharks anywhere in the North Atlantic, and there are no national allocations of catch, discards, or overall mortality (Campana 2016).

The CABs for both the US and Canadian North Atlantic swordfish fishery concluded that there is not a high degree of certainty that blue shark stocks in the north Atlantic are within biologically based limits and only scored this PI at 80 for blue sharks.

Shortfin mako shark (*Isurus oxyrinchus*).

Although ICCAT has completed a stock assessment for shortfin mako sharks, which ICCAT itself acknowledges as uncertain, no reference points have been set and there are no catch or mortality regulations (ICCAT 2009, 2012). At present, therefore, there are no firm limits, biological reference points, or estimates of sustainable mortality in place for blue or shortfin mako sharks anywhere in the North Atlantic, and there are no national allocations of catch, discards, or overall mortality (Campana 2016).

To score this PI, it is necessary to determine the probability that the stock biomass is above the point where recruitment would be impaired (PRI). There is no analytical determination for Shortfin Mako of the point where recruitment would be impaired (PRI).

According to GSA2.2.3.1 teams may allow the use of surrogate or proxy indicators and reference points in scoring both stock biomass and exploitation rate. Examples of qualitative interpretation include analogy with similar situations, plausible argument, empirical observation of sustainability and qualitative risk assessment. Simpfendorfer et al. 2008 assessed the risk of over-exploitation for pelagic shark species (including Shortfin Mako) taken in Atlantic longline fisheries based on three main metrics: Ecological Risk Assessment, the inflection point of the population growth curve (a proxy for BMSY) and IUCN Red List status. The results were analysed using multivariate statistics to provide an integrated measure of the risk of overexploitation. The integrated risk approach is not a substitute for stock assessment, but rather a method to aid in making science-based management recommendations in the face of data limitations. The Quantitative Ecological Risk Assessment showed that Shortfin Mako, Silky shark and Longfin Mako have the highest levels of risk of overexploitation by Atlantic pelagic longline fisheries. The inflection points of the population growth curves (R ~ BMSY) for Shortfin Mako sharks were found at 0.84 B0. The authors concluded that the Shortfin Mako (both new and old biological data), Longfin Mako and Bigeye Thresher had the highest levels of risk combined with IUCN Red List Threatened status. They considered these species to have the greatest degree of risk among Atlantic pelagic sharks. Similar high vulnerability ranking of Shortfin Mako sharks were reported in the 2008 and 2012 Ecological Risk Assessments of ICCAT.

When taking Simpfendorfer R ~ BMSY estimate and comparing it to the Catch-Free Age-Structured Production Model (CFASPM) results of the 2012 ICCAT assessment, it becomes evident that all 12 model runs predict a current biomass below Bmsy (R) and that the majority of runs had confidence intervals reaching below PRI (when setting PRI = 0,5 Bmsy; SA2.2.3).

Also some of the Bayesian Surplus Production Models (BSP) suggested that the North Atlantic Stock could be overfished and that overfishing could be occurring. The confidence intervals of several runs of the models used in the 2012 assessment suggested that F2010 greater than FMSY and B2010 less than BMSY (ICCAT 2012).

Data quality of the stock assessments is very poor but several models indicate that the Stock is overfished (using the precautionary R approach) and overfishing could be occurring.
Therefore, a score of 80 (highly likely to be above the PRI) can not be justified.

Shortfin Mako shark has the highest levels of risk of overexploitation by Atlantic pelagic longline fisheries. There are no enforceable catch or mortality regulations. There is a high spatial overlap (80%) between longline fishing hotspots and pelagic shark hotspots (Queiroz et al 2016).

To achieve a score of 60 for this PI, if the species if not 'likely' to be above the PRI, there should be measures in place to ensure the UoA does not hinder rebuilding and recovery. ICCAT Recommendation 05-05 sets an obligation to reduce mortality of North Atlantic Shortfin Mako sharks. In contrast, the spanish longlining fleet increased their catch of Shortfin Mako sharks in the North Atlantic from 1316 t in 2004 to 2308 t in 2012 (ICCAT stat 1). The fleet's catch has declined since their high catch in 2012. However, even their recorded catch of 1362mt in 2015 is still above the catch recorded in 2004. They have not reduced mortality as required by ICCAT Rec 05-05. **The UoA is not taking action to ensure their fishery does not hinder the recovery of Shortfin Mako and should not pass this PI.**

2.1.1 b Minor primary species stock status UoA1

Throughout the assessment, the CAB notes the uncertainty of data reported by this fishery due to the very low observer coverage as well as fleet logbooks that are not fully filled in for bycatch and non target species. It is, therefore, difficult to argue that there is a high level of confidence in the catch numbers for the minor primary species reported in the assessment. These are landed numbers taken from the ICCAT or IEO report, however it is well known that pelagic longline fisheries catch many of these species without always landing them. Without full data on discards and releases it is impossible to fully assess the extent of impact of the UoA on these minor primary species.

This is especially concerning as they are almost all below the PRI and experiencing continued overfishing. We do not agree that the 100 score for all species has been fully justified. According to

the guidance of GSA 3.4.6, though the reported catch of UoA is a low percentage of overall catch of the stocks, there must be sufficient information in the assessment to comprehensively understand the impact of the fishery, especially in regard to juvenile catch.

We also note that the Table 3-11 on page 47 of the PCDR, lists 237.389 kg of 'unidentified billfish'. This is higher than the combined reported catches of sailfish and marlin and therefore indicates the poor reliability of the catch data being collected and reported by this fishery. Given the high degree of uncertainty and the declining trend for Atlantic sailfish, Atlantic blue marlin, and Atlantic white marlin, this level of unidentified catch is concerning. **The fishery should not score 100 for these minor primary species.**

Porbeagle as Minor Primary Species

It is not clear if porbeagle should be designated as a minor or main primary species. According to GSA3.4.2, "designation of 'main' species: Shark fins are considered to have high commercial value. Thus, when a fishery trades shark fins, the shark should be considered a main species, even when sharks comprise less than 5% of the catch." There is a possibility that porbeagle fins are still part of the fin trade from this fishery.

The UoA trades shark fins and there is evidence that porbeagles are regularly caught as bycatch in the fishery. ICCAT Recommendation 15-06 now requires live release of porbeagle and limiting porbeagle of landings to 2014 levels for all ICCAT fisheries, which was about 40t for all ICCAT fisheries combined. Above and beyond that, porbeagle is protected under 2012 EU Regulation *** that prohibits fishing and landing of porbeagle in all EU waters, including the Mediterranean Sea, and by EU vessels fishing in international waters. Therefore, the UoA should be landing no porbeagle sharks or fins. We, therefore, note with concern the 53 kg of unidentified shark species reported in table 3-11 on page 48-49 of the PCDR.

Given the very vulnerable and highly depleted state of porbeagle shark, any amount of catch unreported may have serious impact on the status assessment and will hinder the recovery of the species. Also taking into account that in the 10 years previous to the EU ban, Spain's longline fleet reported over 30 or 40t of porbeagle catch in certain years, it is clear the fleet interacts with porbeagles and may have a significant amount of discards.

Observer estimates (Table 3.10) indicate 0,5 % discard of porbeagles in the Atlantic by the UoA what is likely around 150 tons a year. Simply discarding caught specimens is not enough to protect these species because 30-45 % of porbeagle that are caught in the pelagic swordfish longline fishery have been estimated to have been discarded dead (Simpfendorfer et al., 2011, Campana et al., 2016). Additionally, they exhibit high post release mortality rates ranging from 10 to 70 % (Campana et al., 2016).

The assessment team notes "all individuals caught are released". There is no information as to how the requirement for live release of porbeagle is enforced. There is no requirement for the UoA to record discards and this is a vital part of the data needed to manage the recovery of porbeagle shark. The low levels of observer coverage are not acceptable for ensuring no transhipment and sufficient information.

We note that other swordfish fleets holding certification have been required through conditions to demonstrate confidence that all removals of porbeagle, *including estimates of Post Release Mortality through tagging and robust observer coverage,* are estimated adequately and have clear actions identified that will be taken should removals or landings be found.

The Spanish longline fleet has extremely low observer coverage and has done no analysis on the whether their observer rates and data collection are sufficient to assess their impact, including discards and post release mortality, on bycatch species such as porbeagle. **There is no rationale to clearly demonstrate that this fishery is not hindering the recovery of porbeagle. The fishery should not score 100 for porbeagle shark.**

PI 2.1.1 Primary species outcome UoA2

Nature of comment 1,2

Blue shark (*Prionace glauca*)

A scoring of 80 (highly likely) can not be justified because the assessment results (ICCAT 2015) are uncertain (e.g. absolute abundance varied by an order of magnitude between models with different structures) and the authors explicitly stressed out that the results should be interpreted with caution and that quantitative projections of future stock condition are not possible and that it is not possible to determine whether the stock is overfished or overfishing is occurring. Additionally, there are no biological reference points (like PRI) established for this stock.

SOUTH ATLANTIC BLUE SHARK SUMMARY

Provisional Yield (2014)		25,939 t[1]
2013 Yield		20,799 t[2]
Relative Biomass	B_{2013}/B_{MSY}	0.78-2.03[3]
	B_{2013}/B_0	0.39-1.00[3]
Relative Fishing Mortality	F_{MSY}	0.10-0.20[3]
	F_{2013}/F_{MSY}	0.01-1.19[3]
Stock Status 2013	Overfished	Undetermined[4]
	Overfishing	Undetermined[4]

[1] Task I catch.
[2] Estimated catch used in the 2015 assessments.
[3] Range obtained with the Bayesian Surplus Production (BSP) and Stock Synthesis Bayesian Surplus Production (SS-BSP) models.
[4] Given the uncertainty in stock status, the Committee cannot make a determination but cautions that the stock may have been overfished and overfishing may have occurred in recent years.

2.1.1 b Minor primary species stock status UoA2

As we point out in the scoring for 2.1.1b in the North Atlantic fishery, similarly there is considerable uncertainty about the impact of the UoA on the Southern Atlantic minor primary species. Throughout the assessment, the CAB notes the uncertainty of data reported by this fishery due to the very low observer coverage as well as fleet logbooks that are not fully filled in for bycatch and non target species. It is, therefore, difficult to argue that there is a high level of confidence in the catch numbers for the minor primary species reported in the assessment. These are landed numbers taken from the ICCAT or IEO report, however it is well known that pelagic longline fisheries catch many of these species without always landing them. Without full data on discards and releases it is impossible to fully assess the extent of impact of the UoA on these minor primary species.

This is especially concerning for the South Atlantic stocks as they are typically more data poor and in more depleted states that those tuna and billfish stocks in the North Atlantic. All of the minor primary species for UoA2 are under the PRI and we do not think a score of 100 is justified for all these species given the extremely low observer coverage and confidence in data collection for this fishery. There is not enough confidence that the fishery is not hindering the recovery of these depleted species only based on reported landings.

According to the guidance of GSA 3.4.6, though the reported catch of UoA is a low percentage of overall catch of the stocks, there must be sufficient information in the assessment to comprehensively understand the impact of the fishery, especially in regard to juvenile catch. The discards and post release mortality are not captured by the fishery data.

We also note that the Table 3-12 on page 48 of the PCDR, lists 1464.396 kg of ‘unidentified billfish’. This is a very high amount of unidentified catch and is very concerning. It is higher than the combined reported catches of sailfish and marlin and indicates the poor reliability of the catch data being collected and reported by this fishery and increases the proportionate impact of this UoA on the sailfish and marlin. Given the high degree of uncertainty and the declining trend for Atlantic sailfish,

Atlantic blue marlin, and Atlantic white marlin, this level of unidentified catch is concerning. **The fishery should not score 100 for these minor primary species.**

Porbeagle as Minor / Main Primary Species UoA2

It is not clear if porbeagle should be designated as a minor or main primary species. According to GSA3.4.2, "designation of 'main' species: Shark fins are considered to have high commercial value. Thus, when a fishery trades shark fins, the shark should be considered a main species, even when sharks comprise less than 5% of the catch." There is a possibility that porbeagle fins are still part of the fin trade from this fishery.

The UoA trades shark fins and there is evidence that porbeagles are regularly caught as bycatch. ICCAT Recommendation 15-06 now requires live release of porbeagle and limiting porbeagle of landings to 2014 levels for all ICCAT fisheries, which was about 40t for all ICCAT fisheries combined.[1] Above and beyond that, porbeagle is protected under 2012 EU Regulation *** that prohibits fishing and landing of porbeagle in all EU waters, including the Mediterranean Sea, and by EU vessels fishing in international waters. Therefore, the UoA should be landing no porbeagle sharks or fins. **We, therefore, note with concern the 780 kg of unidentified shark species** reported in table 3-12 on page 48-49 of the PCDR.
Given the vulnerable and highly depleted state of porbeagle shark, any amount of catch unreported may have serious impact on the status assessment and will hinder the recovery of the species. Also taking into account that in the 10 years previous to the EU ban, Spain's longline fleet reported over 30 or 40t of porbeagle catch in certain years, it is clear the fleet interacts with porbeagles and may have a significant amount of discards.

Observer estimates (Table 3.10) indicate 0,5 % discard of porbeagles in the Atlantic by the UoA what is likely around 150 tons a year. Simply discarding caught specimens is not enough to protect these species because 30-45 % of porbeagle that are caught in the pelagic swordfish longline fishery have been estimated to have been discarded dead (Simpfendorfer et al., 2011, Campana et al., 2016). Additionally, they exhibit high post release mortality rates ranging from 10 to 70 % (Campana et al., 2016). There is no information as to how the requirement for live release of porbeagle is enforced. There is no requirement for the UoA to record discards and this is a vital part of the data needed to manage the recovery of porbeagle shark. The low levels of observer coverage are not acceptable for ensuring no transhipment and sufficient information.

Based on ICCAT last stock assessment the recovery of the northern hemisphere stocks to BMSY under **no fishing mortality** could take from 15 to 34 years for the northeast Atlantic stock and from 20 to 60 years for the northwest Atlantic stock (depending on the stock and model considered).

Table 16. Average probabilities across the 5 most credible BSP model runs for the northeast Atlantic porbeagle population.

Total catch	*Probability of some increase within 10 years*	*Probability of stock rebuilding to BMSY within:* *20 years*	*50 years*
0	1.00	0.478	0.946
100	1.00	0.414	0.872
200	0.98	0.368	0.754
300	0.89	0.326	0.596
400	0.72	0.286	0.464

Given these models, a rebuilding timeframe of 20 years is not likely achievable even without any fishing mortality. Even small catches significantly decrease the probability of stock rebuilding. The additional mortalities caused by the UoA are likely in the range where they hinder recovery of the stock. We note that other swordfish fleets holding certification have been required through conditions

to demonstrate confidence that all removals of porbeagle, including estimates of Post Release Mortality through tagging and robust observer coverage, are estimated adequately and have clear actions identified that will be taken should removals or landings be found.

The Spanish longline fleet has extremely low observer coverage and has done no analysis on the whether their observer rates and data collection are sufficient to assess their impact, including discards and post release mortality, of bycatch species such as porbeagle. **There is no rationale to clearly demonstrate that this fishery is not hindering the recovery of porbeagle. The fishery should not score 100 for porbeagle shark.**

PI 2.1.2 Primary species management strategy UoA1 and UoA2

a) Management strategy in place

A score of 80 for the primary main species blue shark and shortfin mako shark can not be justified.

There is no partial strategy in place for the UoA, that is expected to maintain the main primary species at levels which are likely above the point where recruitment would be impaired and there is no objective basis for confidence that the measures will work.

The scoring rationale given by the assessment team is based only the overall ICCAT convention and on past actions by ICCAT on other species to set limit reference points and harvest control rules. In reality, ICCAT's does not have a strong record of setting harvest control rules and has repeatedly pushed back their timelines on setting reference points and HCRs for the tuna and swordfish species under it's management. There is ongoing efforts to reform the convention to explicitly include sharks, but to date this has not been achieved. There is little confidence that ICCAT will set reference points or HCR for sharks in the next few years, nor is there confidence yet that there will be evidence of implementation of the precautionary approach for some time. Sharks have never been considered of primary concern for ICCAT management and the likelihood of management and rebuilding measures cannot be compared to past ICCAT actions on commercially important tuna species.

The assessment team argues that ICCAT will introduce harvest control rules or similar measures in the future if necessary. However, the MSC standard asks about what measures are **in place** and not about measures that will maybe in place somewhen in the future (see MSC Independant Adjudicator Decision regarding the Echebastar Indian Ocean purse seine tuna fishery). Also, "If necessary" is inserted in Management PI scoring issues to indicate that if the UoA does not have any impact on a certain component (e.g., species), then no specific rationale need be given in order to achieve the relevant SG level. For example, if there are no "main" primary species, then a management strategy would not be required at SG60 or SG80 (MSC 2.0 standard Table GSA3). Therefore "If necessary" does not refer to the actual stock status.
The other measure used by the assessment team are the shark related ICCAT recommendations, mostly concerned with data collection and reporting on sharks. Despite these recommendations, shark data reporting is still a problem. Although ICCAT has completed a stock assessment for blue and shortfin mako sharks, these are considered uncertain due to the sparse data sets, and therefore no reference points have been set and there are no enforceable catch or mortality regulations (ICCAT 2009, 2012, ICCAT 2015). At present, therefore, there are no limits, biological reference points, or estimates of sustainable mortality, no temporal or spatial closures, or other technical measures in place for blue or shortfin mako sharks anywhere in the North Atlantic, and there are no national allocations of catch, discards, or overall mortality (Campana 2016).

The scoring rationale given by the assessment team is too vague and relies heavily of overall fisheries regulations and does not list specific measures for that would be considered a partial strategy for blue or mako sharks in this UoA. It is clear that dockside monitoring and the finning regulation does not ensure that all discards are accounted for or unreported catch is not happening.

b) Management strategy evaluation

The assessment team lists some measures but fails to realistically assess if these measures will likely work (PI 2.1.2 Scoring issue a, b):

There is no objective basis for confidence that measures noted by the assessment team for blue shark or mako shark will work. **The fishery should not score 80 for blue shark or mako shark.** The assessment team justifies their confidence on past performance and on 2015 resolution to adopt HCR for swordfish. This is one of the main commercial species for ICCAT and there is still no explicit HCRs. The commitment to adopt HCR is 2015 was again put off for another 3years. This does not lend confidence to the idea that the commission will adopt HCR for blue shark. At the 2016 meeting the recommendation for blue shark specifically stated that HCRs will not be developed until after the 2020 stock assessment. There is current no harvest strategy in place nor any indication of actions to be taken if catch and discards of blue sharks exceed a certain level. **A score of 80 is not justified.**

The assessment team also considers Order AAA/1647/2009 as part of the management strategy. It prohibits the catching of blue shark and mako sharks by any spanish vessel that isn't included in the surface longline fishing. This law is **not in relation to** the UoA but instead for the other spanish fisheries. Effect of this law on blue shark and mako shark stocks is very likely insignificant due to the fact that 96% of reported blue shark catches in ICCAT are made by longliners (Campana 2016) and because the law affects only spanish fishermen. This cannot be considered a measure in scoring this PI.

Order AAA/658/2014 (law established in EU 2003) prohibits shark finning. However, the fishery has evolved through time to be much more focused on the value of the meat over the fin from 50:50 to 10:1.Shark on European markets is similar in value to the cheaper tuna species such as skipjack eg €0.8-1.3 vs €0.9-1.1. Therefore it is highly profitably to catch mako and blue sharks for fins and meat and this law is unlikely to have an effect on future catches.

ARM/1267/2011 Reduction of fishing effort. This is actually the only measure for the UoA that could decrease the impact of the UoA on mako and blue sharks. However, given the enormous technology creep in the recent decade (e.g. remote sensing from satellites to locate frontal areas and other shark hotspots; change from spanish style to american style longlining; lightsticks etc.) it is uncertain if the present reduction in fishing capacity is enough to safeguard healthy shark stocks. Especially when taking into account the overall longline capacity of the international fleet operating in the ICCAT area.

c) Management strategy implementation

According to the PCDR the European Union and Spain fisheries adhere to ICCAT Recommendations and the assessment team is not aware of any evidence or widespread concern about illegal fishing in the Spanish longline fishery. Therefore issue c was scored 80. This score is not justified and we have strong concerns about the implementation of management measures in this fishery and the scoring of this SI.

On the contrary, the fishery is actually out of compliance with several ICCAT recommendations and EU law that are key stones for the protection of the shark stocks.

Of highest concern, is the extremely low observer coverage in this fishery. ICCAT mandates at least 5% coverage and the assessment report notes that this fishery has only 1% coverage in the North Atlantic and 3% in South Atlantic.

According to ICCAT Rec. 2010-10: RECOMMENDATION BY ICCAT TO ESTABLISH MINIMUM STANDARDS FOR FISHING VESSEL SCIENTIFIC OBSERVER PROGRAM:
Notwithstanding additional observer program requirements that may be in place or adopted by ICCAT in the future for specific fisheries for the collection of scientific information, each Contracting Party and Cooperating non-Contracting Party, Entity, or Fishing Entity (CPC) shall ensure the following with respect to its domestic observer programs:

a) A minimum of 5% observer coverage of fishing effort in each of the pelagic longline, purse seine, and, as defined in the ICCAT glossary, baitboat fisheries, as measured in number of sets or trips for purse seine fisheries; fishing days, number of sets, or trips for pelagic longline fisheries; or in fishing days in baitboat fisheries;

This is reinforced by the Order AAA/658/2014 from the Spanish Government which regulates the surface longline fishing method for catching highly migratory species and establishes that the Spanish Government has to put in place the observer coverage program recommended for each RFMO and for this case ICCAT establish a minimum of 5%

Compliance with ICCAT enforcement and monitoring is the main justification used by the CAB to argue that measures noted are being implemented. **The rationale cannot be upheld and a score of 80 cannot be justified.**

It is also important to note that the other US and Canadian SWO UoAs holding certification received conditions for their low levels of observer coverage when certified and they have much higher levels that the Spanish fleet. The Canadian fishery observer coverage is considered too low to be significant and they have outstanding conditions requiring analysis of the coverage to show that it is statistically robust in terms of spatial, temporal, and species level coverage. The Canadian fleet currently has between 5-8% coverage and do not have enough data to assess impact on vulnerable species.

The US Atlantic swordfish longline fleet now has 100% electronic video monitoring. It was made mandatory in 2015 and is now being implemented across the fleets (NMFS 2006).

The Day Boat swordfish fleet, certified by MSC in 2013, had this technology in place at the time of their MSC certification.

The Spanish fleet has an unacceptable level of observer coverage, is out of compliance with ICCAT. This is egregious and does not allow sufficient information to assess management strategy implementation. **They should not pass this SI.**
There are other ICCAT recommendations that the fishery is out of compliance with that should be noted. The fishery does not correctly record discards of sharks although this is strongly requested by ICCAT in Rec 04-10 : (Task I and II data)

Table 2. Shortfin mako shark (SMA) SCRS catalogues on statistics (Task-I and Task-II) by Stock (a) SMA-N, b) SMA-S, and, c) SMA in the Mediterranean Sea), major fishery (flag/gear combinations ranked by order of importance) and year (1990 to 2014). Only the most important fisheries (representing ±99% 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"= Task 2 Catch and effort exist; "b"= Task 2 Size data exist; "c"= Catch-at-Size exist) that represents the Task-II data availability in the ICCAT-DB. See legend on the right.

a)

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
SMA	ATN	CP	EU.España	LL	t1		2415.55	2199.45	2050.88	1565.59	1684.47	2046.86	2067.6	3404.02	1751.3	1918.02	1815.56	1895.26	2216.17	2090.74	1667.13	2307.99	1508.83	1480.93
SMA	ATN	CP	EU.España	LL	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	b
SMA	ATN	CP	EU.Portugal	LL	t1	691	354	307	327.389	317.5	377.626	414.7	1248.63	398.684	1109.32	950.556	1539.67	1033.06	1169.31	1431.93	1044.63	1022.55	817.433	208.601
SMA	ATN	CP	EU.Portugal	LL	t2	a	a	a	a	a	a	a	a	a	a	ab	ab	ab	ab	ab	ab	ab	ab	ab
SMA	ATN	CP	Japan	LL	t1	790	258	892	120	138	105	438	267	572			82.415	130.861	98.389	116.293	53.266	56.051	32.662	69.966
SMA	ATN	CP	Japan	LL	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1			-1	-1	ab	ab	ab	a	a	a
SMA	ATN	CP	U.S.A.	LL	t1	234.1	242.08	194.98	89.47	163.8	180.5	166.776	141.43	187.784	186.904	129.287	222.435	196.539	220.994	225.682	212.865	198.449	190.036	202.51
SMA	ATN	CP	U.S.A.	LL	t2	-1	-1	-1	-1	-1	-1	-1	b	b	b	b	b	b	ab	ab	ab	ab	ab	ab
SMA	ATN	CP	U.S.A.	RR	t1	0.22	0.31	0.24	0.19	0.58	0.33	0.137	0.18	332.564	282.115	256.662	158.299	156.036	162.728	167.778	178.183	229.471	219.387	201.437

-1	no T2 data
a	t2ce only
b	t2sz only
c	cas only
bc	t2sz +cas
ab	t2ce +t2sz
ac	t2ce +cas
abc	all

b)

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
SMA	ATS	CP	EU.España	LL	t1		1356	1141.04	861.303	1200.25	1234.62	810.512	1158.23	702.702	583.634	664.367	653.869	627.998	938.781	1192.16	1535.43	1197.17	1082.64	1076.9
SMA	ATS	CP	EU.España	LL	t2		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	b
SMA	ATS	CP	Namibia	LL	t1				1.228			458.85	374.71	509.023	1415.25	1243.5	1001.81	294.55	23.318	306.438	328.465	554.342	8.5	949.8
SMA	ATS	CP	Namibia	LL	t2				-1			a	-1	ab	ab	ab	ab	ab	ab	ab	ab	a	ab	a
SMA	ATS	CP	EU.Portugal	LL	t1	94	165	116	118.5	387.7	140.1	56	624.61	12.781	241.788	493.325	374.735	321.022	502.262	336.288	409.158	175.93	132.185	126.598
SMA	ATS	CP	EU.Portugal	LL	t2	-1	a	a	a	a	a	a	a	a	a	ab	ab	ab	ab	ab	ab	ab	ab	ab
SMA	ATS	CP	Japan	LL	t1	514	244	267	151	264	56	133	118	398			72.29	115.157	108.276	103.242	132.302	290.96	114.027	182.921
SMA	ATS	CP	Japan	LL	t2	-1	-1	-1	-1	-1	-1	-1	-1	-1			-1	-1	ab	ab	ab	a	a	a

ICCAT also set an obligation to reduce mortality of North Atlantic shortfin mako sharks (Recommendations 05-05) in 2005 to 2012. In contrast ICCAT fisheries (including the Spanish longlining fleet) increased their catches of shortfin mako sharks in the North Atlantic in the following years and the fleet's landings for 2015 were still higher than those reported in 2004. It does not seem there is confidence that the UoA is implementing measures meant to reduce mortality for this species.

SMA-Table 1. Estimated catches (t) of Shortfin mako (*Isurus oxyrinchus*) by area, gear and flag. (v2, 2015-09-25)

			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
TOTAL			1349	1326	1446	2966	3148	5057	2977	5759	5654	4285	5142	4724	5361	7698	7598	6618	6330	6911	5440	6143	6661	7024	7360	5560	6058
	ATN		785	797	953	2193	1587	3130	2035	3571	3847	2785	2588	2658	3395	3895	5174	3472	3370	4075	3559	4109	4183	3771	4478	3646	2899
	ATS		564	529	493	773	1562	1927	942	2182	1798	1495	2549	2059	1964	3801	2423	3130	2951	2834	1880	2034	2477	3251	2880	1914	3160
	MED		0	0	0	0	0	0	0	6	8	5	4	7	2	2	2	17	10	2	1	1	2	2	2	0	0
Landings	ATN	Longline	497	573	660	1499	1234	1654	1787	3394	3679	2693	2275	2431	3129	3884	4755	3172	3105	3901	3387	3919	4007	3549	4191	3362	2623
		Other surf.	278	213	254	670	331	1447	248	177	168	91	313	227	266	11	418	300	264	168	163	171	173	213	268	278	266
	ATS	Longline	564	519	480	763	1542	1914	927	2160	1788	1485	2540	2041	1949	3770	2347	3116	2907	2792	1798	2027	2476	3189	2817	1880	3127
		Other surf.	0	9	13	10	20	13	15	23	10	10	9	18	15	31	76	14	43	30	82	7	1	62	55	34	31
	MED	Longline	0	0	0	0	0	0	0	6	8	5	4	7	2	2	2	17	10	2	1	1	2	2	2	0	0
		Other surf.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Discards	ATN	Longline	10	11	38	24	21	29	1	0	0	0	0	0	0	0	0	0	0	7	9	20	2	9	19	5	10
		Other surf.	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
	ATS	Longline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	8	0	2

EU.España	0	0	0	0	0	0	0	2416	2199	2051	1566	1684	2047	2068	3404	1751	1918	1816	1895	2216	2091	1667	2308	1509	1481
EU.France	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	2	0	0	0	1
EU.Portugal	193	314	220	796	649	657	691	354	307	327	318	378	415	1249	473	1109	951	1540	1033	1169	1432	1045	1023	820	219

This is further reason the fishery should not score 80 for this SI

The recent reduction in fleet capacity and the decreasing landings of Shortfin Mako sharks could be interpreted as a positive sign. However, fleet capacity only shifted to new fishing grounds (e.g. several vessels that are included in the UoA did not fish in the Atlantic for the past 4 years but instead they targeted sharks and swordfish in the Mozambique channel, Outside EEZ South Africa and within EEZs of Mozambique and Madagascar. Three vessels of ORPAGU were involved in illegal (unreported) fishing in the Mozambique channel in 2010 (including an UoA vessel). (http://www.seafoodsource.com/news/supply-trade/21786-tuna-vessels-cited-for-illegal-fishing)

d) shark finning

Due to the low observer coverage and lack of confidence that no transhipment at sea of shark fins is occurring, a score of 80 is not fully justified. The assessment team does not address how the 100% dockside monitoring is organized in non EU-countries like Montevideo (Uruguay), Mindelo Cabo Verde and Walvis Bay (Namibia). It is not clear that this is a reliable measure to ensure no shark finning is occuring.

e) Review of alternative measures

For porbeagle sharks, there is has been no review of alternative measures to reduce unwanted catch of porbeagle. The status is reviewed through assessments, but there is no review of alternative measures that should be in place to reduce post release mortality. **The fishery should not score 80.**

PI 2.1.3 Primary species information UoA1 & UoA2.

a) Information of impact on main species

A score of 8o is not justified for this SI.

The data collection and reporting by this fleet is highly questionable and is of major concern. The assessment team notes:

> Therefore [due to use of electronic logbook], quantitative information is available on the amount of mako and blue shark caught, discarded and landed on every fishing trip performed by every vessel included in the the UoA (both in weight and number of individuals). Observer programme coverage (1% North atlantic and 3% south Atlantic) provides third party information (in addition to biological sampling information).

This scoring rationale is flawed. In fact, discards are not well recorded in the logbooks and no all task data is submitted to ICCAT (see comments PI2.2.3; PI 3.2.3)

As noted, in other parts of the assessment report, the fishery logbooks are not filled out properly. There have been zero records for protected sharks and other bycatch species such as sea turtles between 2010-2014, despite these being noted as caught and released by observers and by the

short study commissioned by the fleet. Zero records are highly unlikely given the areas fished and high interaction rates with pelagic sharks and sea turtles in this fishery.

On top of this, as noted by the assessment team independent observer coverage is very low (1% in the North Atlantic and 3% in the South Atlantic). There is thus no comprehensive data source for determining what proportions of elasmobranch catches in the Atlantic are discarded (dead or alive) and retained. This is an unacceptably low level of observer coverage for such a wide ranging fleet that is fishing with gear that is high risk to pelagic species. In order to be recognized with the MSC certification, this fishery should be demonstrating not only adherence to basic regulations, but an effort to increase sustainability. As noted above, this fishery is not following the ICCAT recommendation of 5% minimum observer coverage, nor are they anywhere near best practice in their gear type or other MSC certifications. Despite being aware of their lack of information and research on their impact on bycatch and primary species for many years, this client has not been proactive in increasing the quantity and quality of information collected. It is unacceptable and will undermine the certification.

In contrast, the 2013 US North Atlantic swordfish fishery scored only 80 although data is available from vessel logbooks of landings by weight (DLS), catch and release fate by numbers from both vessel logbooks (FLS) and the pelagic observer programme (POP) has now implemented 100% electronic video monitoring for bycatch and retained species compliance and data collection. To verify the accuracy of logbook reporting, Day Boat Seafood LLC has had 100% observer coverage of its fleet for more than two years. Even the Canadian swordfish fleet, which has outstanding conditions on improving their observer coverage has between 5-8%, at times as high as 20% coverage and they are considered below the standard in North America.

According to GSA 3.6.3 0 on adequacy of information for P2 species 2.1.3, 2.2.3, 2.3.3:
The validity of the qualitative information should be triangulated with stakeholders who know the fishery well. In this case, many stakeholders have serious concerns about the adequacy of information being captured by the fleet and the extremely low observer coverage that is out of compliance with ICCAT minimum standards.

The guidance GSA 3.6.3 continues:

> generally, having only one form of data collection with a high level of potential bias or other limitation (e.g. logbooks or interviews with fishermen) by itself should not be enough to meet SG80 - additional information sources that compensate for the limitations would also need to be provided and assessed.

The main source of information the assessment team is relying on for scoring is the logbooks. The additional observer coverage is too low to be considered adequate additional and is not even following minimum requirements for ICCAT.

The UoA should not pass this SI. They are not providing adequate information to assess their impact on primary species, nor to detect any changes in risk to the species.

b) Information adequacy for assessment of impact on minor species

See comment above, the information available in this fishery is inadequate. They should not receive certification until they are at least at a standard that harmonizes with the other UoA swordfish holding certification.

c) Information adequacy for management strategy

Shortfin mako achieved risk ratings in the highest categories in various ecological risk assessments (ICCAT 2008, 2012, Simpfendorfer et al. 2008, MSC RBF). UoA fishing activity highly overlaps (80%) with hotspots of this species (Quieroz 2016). **However, there is not adequate information to support a partial strategy and the fishery should not score 80.** Catch data are considered incomplete, and underestimated. There have been unaccounted discards and a substantial

occurrence of finning over parts of the time series in the ICCAT Area. Data reported to ICES, ICCAT and FAO vary significantly. See comment above on guidance for what is required to be considered adequate.

PI 2.2.1 Secondary species outcome UoA1 & UoA2.

a) Main secondary species stock status

Longfin mako shark (*Isurus paucus*),
Tiger shark (*Galocerdo cuvier*)
Oceanic whitetip shark (*Carcharhinus longimanus*)
Silky shark (*Carcharhinus falciformis*)
Crocodile shark (*Pseudocarcharias kamoharai*)

The above species should be classified as main secondary species. Reminding GSA3.4.2: Designation of 'main' species:
Shark fins are considered to have high commercial value. Thus, when a fishery trades shark fins, the shark should be considered a main species, even when sharks comprise less than 5% of the catch.

It can be argued that Oceanic whitetip shark and Silky shark should be excluded from this rule because it is prohibited to land them. However, given the large amount of 820 kg of unidentified sharks that the UoA landed between 2010-2014 it can not be excluded that landings also contained these protected species.

The assessment teams concluded (for sharks as minor species) that given the low percentage of discards of Carcharhinidae sharks reported by the Observer Program of UoA, they can say that there is evidence that the UoA does not hinder the recovery and rebuilding of this species. However, as written above, there are more than >800 tons of unidentified sharks landed, plus >80 tons of longfin mako landings and an unknown amount of discards.

Independent Observer coverage is extremely low (1%, 3% respectively) and is by far not enough to sufficiently sample and to assess discarded protected shark species. Generally, for species that are highly variable and sometimes aggregating and are relatively rare, higher levels of observer coverage are needed. Taking this into consideration the information available is not sufficient to assess the UoAs related mortality and impact and to determine whether the UoAs may be a threat to protection and recovery of these species.

There are neither stock status reference points nor stock assessments, nor mortality estimates available for these species. Only Risk based assessments which classify longfin mako shark, oceanic whitetip shark and silky shark in the highest categories (ICCAT 2008, 2012, Simpfendorfer et al. 2008, MSC RBF) and the IUCN classification as vulnerable (longfin mako shark, Oceanic whitetip) and near threatened (silky shark).

In order to establish whether observer data or other monitoring mechanisms are representative of the activity of the UoA during a year, and can be relied upon to have detected representative encounters with sharks, CABs could seek evidence for the management system having examined the onboard observer data, or other data, for consistency with the reported/landed/etc. catches of sharks.' This could be done, for example, by comparing the on board observer reports to the logbooks (Document: MSC Fisheries Standard (Annexes S) and Guidance v2.0 page 408).

There is no consistency with observer estimates and reported discards / catches of sharks. All discards of this species are not included in the logbooks of the fleet (PCDR Table 3-11).

The three page bycatch report of the Spanish Institute of Oceanography IEO (dated on November 2015) based on data collected in recent years by the observers on board ARVI vessels has a more anecdotic character in its present form. It is the only available document regarding discarded bycatch and ETP species interactions of the Spanish Swordfish longlining fleet. The report is used throughout

the assessment (e.g. Scoring rational PI 2.1.1; PI 2.1.2; PI 2.2.2; PI 2.3.2 etc.). However, the report does not contain sufficient quantitative (weights, no. of individuals) nor qualitative (sampled years, boats, spatial distribution of sampling etc.) information that would be necessary for stakeholders (and the certifier) to be able to properly review the bycatch issues.

Given the high risk to overexploitation due their special life history and their high susceptibility (ICCAT 2008, 2012, Simpfendorfer et al. 2008, MSC RBF), the decreasing population trends according to the IUCN assessments it can not be concluded that Longfin Mako shark (*Isurus paucus*), Tiger shark (*Galocerdo cuvier*), Oceanic Whitetip shark (*Carcharhinus longimanus*,) Silky shark (*Carcharhinus falciformis*) are likely to be within biologically based limits.

Additionally, due to the situation that the impact of the fishery in assessment on these species can not be analytically determined a precautionary approach must be taken.

Scoring guidepost 80 dictates "Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a demonstrably effective strategy in place between those MSC UoAs that also have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.

The **US North Atlantic Swordfish Pelagic Longline and Handgear Buoy Line Fishery** has following partial strategy in place (and scored 80):

In 1993 The Fishery Management Plan for Sharks (NMFS 1993) was developed for the management of shark populations in waters of the U.S. Atlantic and Gulf of Mexico. NMFS prohibited the retention of 19 species of sharks including longfin mako sharks based on a precautionary approach for species with little or no biological information and thought to be highly susceptible to overexploitation. The December 24, 2003, Amendment 1 to the FMP for Atlantic tunas, swordfish and sharks Management measures enacted in that amendment also included: modifying the commercial quotas, eliminating the commercial minimum size restrictions, establishing regions and trimester seasons for LCS and SCS management units, imposing gear restrictions to reduce bycatch, and a time/area closure off the coast of North Carolina effective January 1, 2005. Reported discards of pelagic sharks have also declined more than the predicted values by 42%, between the two periods 1997-99 and 2005-10 and numbers of pelagic sharks kept have declined by 18%.

As comparison: **Sustainable Swordfish LLC US North Atlantic Swordfish Longline Fishery** has following partial strategy in place (and scored 80): TACs for shark complexes, prohibition on retaining some species, encouragement for live release of sharks, a minimum size limit for retained sharks, and trip limits.

The Spanish fleet does not have TACs, size limits, interaction cups, gear restrictions, time/area closures or a proper bycatch reporting like the overlapping two UoA. And Spain has a lower observer rate.

Therefore a score of 80 can not be justified for the shark species considered secondary species.

PI 2.2.2 Secondary species management strategy UoA1 & UoA2.

a) Management strategy in place

We argue that according to GSA3.4.2 the shark complex should be classified as main secondary species (see comment above under 2.2.1). There is no partial strategy in place for the UoA that is expected to maintain or not hinder rebuilding of main secondary species. Measures the assessment team has deemed relevant to this scoring PI are listed below:

Measures	Stakeholder comment
Mandatory reporting species interactions	Not implemented.
Reduction in fishing effort	Minor effect. See comment P 2.1.1
Setting lines below 60m	Does not have an effect on Longfin mako sharks and Silky sharks catches. Contradictory findings regarding Tiger shark and Longimanus. (Howard 2015)
Hook size (16/0)	No effect on shark bycatch (Howard 2015)
Order AAA/1647/2009 prohibits the catching, retaining on board, landing, or marketing of blue shark (Prionace glauca), including bycatch, by any vessel that isn't included in the surface longline fishing unified census .	This is not applicable to secondary species as Blue shark is scored as a primary species
Order AAA/658/2014 prohibits shark finning on board and transportation transhipment or landing shark fins.	See comment above under P 2.1.1. In the face of low observer coverage, especially, it is not certainty how well this is being implemented and enforced.
There is a total ban on catches of species Carcharhinus falciformis and Carcharhinus longimanus which is being implemented (Orden AAA/658/2014)	The fishery still continues to catch these species as bycatch. Silky sharks are thought to have a 60-80 % catch mortality and additional 50-60% post release mortality (Simpfendorfer et al., 2011, Eddy et al., 2016, Poisson et al., 2014). Post release mortality for Longimanus is unknown. UoA doe not report all catches and discards although it is mandatory by this law.

These measures do not constitute a partial strategy.

b) Management strategy evaluation

A precautionary approach should be taken given the fact that stock statuses of the secondary shark species are unknown but decreasing, that there are no biological limits defined, and that interactions with the fleet are not recorded. As explained in 2.1.1 and 2.2.1 it is not clear that these measures are likely to work for these secondary shark species, especially given the high vulnerability of these species. There is not an objective basis to for confidence that the ban on the shark species is working. There is not enough information being collection, observer coverage, or enforcement to ensure these measures are being implemented properly. **A score of 80 is not justified.**

c) Management strategy implementation

Fishery does not report discards although this is strongly requested by ICCAT and observer coverage is much too low to have significant coverage spatially, temporally, and by species to account for discards and ensure that post release mortality is incorporated into management decision making. Decreasing fishing capacity is negated by technology development (e.g. satellite remote sensing). Species like the longfin mako shark remain completely unprotected and unassessed . Given the wide range of mitigation measures that could be easily implemented: circle hooks, avoidance of known hotspot areas, less lightsticks, banning wire leaders, less soak time etc. **a score of 80 can not be justified.**

e) Review of alternative measures to minimise mortality of unwanted catch

A score of 80 can not be reached. There is no regular review of the potential effectiveness to minimise UoA-related mortality of unwanted shark catch like Silky or Longimanus sharks. Also **"***t**here are no alternative measures to minimise UoA-related mortality of all secondary species unwanted catches (PCDR 2.2.3 e)*" Unwanted secondary minor species are defined by the CAB: Silky Shark, Oceanic whitetip shark, Tiger shark, Crocodile Shark, Pelagic stingray (PCDR page 223).

PI 2.2.3 Secondary species information UoA1 & UoA2.

Quantitative information is not available and not adequate to assess and the impact of the UoA and therefore should be scored below 80. Bycatch of several species are not reported by the fleet although it would be mandatory. In contrast the PCDR states that " Quantitative information is available on the amount of all of the main and minor secondary species taken by the fishery (PI 2.2.3) ". Observer coverage is very low. Stock status, biologically limit reference points, fishing mortalities are unknown. Many of the shark species -- Longfin mako shark (*Isurus paucus*), Tiger shark (*Galocerdo cuvier*), Oceanic white tip shark (*Carcharhinus longimanus*,) Silky shark (*Carcharhinus falciformis*) -- are classified as high risk species for overexploitation.

In comparison; **Sustainable Swordfish LLC US North Atlantic Swordfish Longline Fishery** management measures include catch limits, minimum size limits, retention prohibitions, and time/area/gear restrictions. Fishery Logbook System (FLS) and Pelagic Observer Program POP data are adequate (8 % observer coverage, compliant logbooks) to support these measures. Nonetheless the certifier raised a condition and stated "T*he main limitation on detecting changes in outcome status and evaluating effectiveness of strategies is the lack of landings and discard data of the main bycatch species, from other international fisheries and not from the USA PLL fishery*."

The information available in this fishery is inadequate and is not sufficient at this time to earn the MSC certification as it is well below the level of other swordfish UoA fishing in the same areas.

PI 2.3.1 ETP species outcome UoA1 & UoA2.

a) Effects of the UoA on population/stock within national or international limits

Law 42/2007 prohibits to catch or commercialize any species listed in LESPE and all interactions have to be reported. When taking into consideration the observer data, landing data before the prohibition and experiences from other MSC certified Swordfish fleets it becomes evident that the UoA catches a high amount of protected species (>250 ton) protected sharks and hundreds of turtles each year and it becomes also evident hat the UoA does not provide mandatory interaction and

mortality data. This combined with low observer coverage and minimal enforcement at sea means it cannot be certain that the UoAs are indeed follow the national and international laws of zero catches for ETP species.

The UoAs cannot pass this SI until there is significant improvement into the information, at-sea monitoring, and enforcement.

b) Direct effects

The information available in this fishery to assess the impact of direct effects is inadequate and is not sufficient at this time to earn the MSC certification. There is clear evidence from fishery independent studies and from the little information available for this fishery, that the UoAs are interacting frequently with ETP species. However, the information available from the fishery is not statistically significant enough to show that they are not likely to hinder recovery of ETP species. They are well below industry standard for data collection and fishing over a much broader range than the previously certified pelagic longline fisheries. They are not yet ready to be certain of their impact on ETP species and be certified.

Sharks:

Although pelagic ETP sharks are highly affected by fishing, they remain among the least studied elasmobranchs because of their highly migratory nature and because the lack of information on these species poses particular difficulties for their management and conservation (Pikitch et al., 2008). Because elasmobranch species are characterized by slow growth rates (e.g., Coelho and Erzini, 2002) and a low reproductive potential (e.g., Coelho and Erzini, 2006), they are extremely vulnerable to fishing pressure, and overexploitation occurs with even relatively low levels of fishing-induced mortality (Smith et al., 1998), (Fernandez-Carvalho 2015). Simply releasing caught specimens may not be enough to protect these species because 51% of bigeye thresher that are caught in the pelagic swordfish longline fishery have been estimated to have been released dead (Coelho et al., 2012) and large hammerhead shark species exhibit high at-vessel mortality rates ranging from 60 to 90% (Gallagher et al., 2014). Additionally, post release mortalities have been estimated to be around 45 % for hammerheads (Gallagher et al., 2014) and no post release mortality estimates are available for thresher sharks.

Thresher and hammerhead species are considered to have a low productivity and may aggregate in particular areas / hammerheads especially at seamounts), making them particularly vulnerable to overexploitation. Bigeye thresher sharks has been described as having one of the lowest intrinsic rates of population increase among elasmobranchs, highlighting its high vulnerability to exploitation (Smith et al., 1998; Chen and Yuan, 2006; Cortés, 2008). According to the International Union for the Conservation of Nature (IUCN) Red List Criteria, bigeye thresher species is classified as “vulnerable” globally and “endangered” in the northwestern and western central Atlantic Ocean (Amorim et al., 2009). Furthermore, it was classified as being at high risk in an ecological risk assessment of pelagic sharks caught in pelagic longlines in the Atlantic Ocean, highlighting the urgent need for better basic biological information on this shark (Cortés et al., 2010).

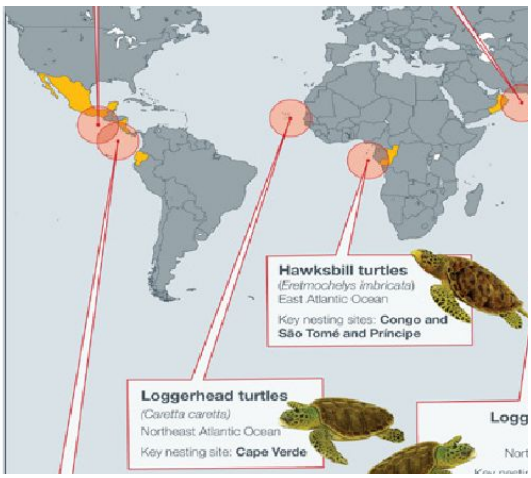
The CAB justified a score of 80 as following: “despite the preliminary nature of the bycatch data, it can be concluded that although these protected species are caught, the incidence of the surface longline fishery is small.” And that “The authors of the IEO report underlined that, if calculations would be made in biomass rather than in number of individuals, the above presented percentages would be even lower for these species because the most prevalent species are those with more body biomass.”

However, reported average catch sizes and individual weights for thresher sharks in the Atlantic are significantly higher (more than double the weight) than the average weight of caught blue sharks (60-75% of total catch) (Köhler et al. 1996, Mas et al 2014) . Therefore if calculations would be made in biomass rather than in number of individuals they would definitely not be lower in the case of thresher sharks. Based on the IEO observer data summary and based on earlier landings of these bycatch species it must be concluded that the UoA catches between 50-200t thresher sharks each

year and over 150t hammerhead sharks. With the perspective of the missing data on stocks and limit reference points, their extreme vulnerability to fishing even at low levels of fishing-induced mortality and the poor data quality of the observer coverage it can not be concluded that it is highly likely that UoA does not hinder recovery of ETP shark species. For example, a UoA catch of 200 t thresher sharks (Alopiidae) equal 20% of total global landings of this genus (Goldman *et al.* 2009). **The scoring rationale is not proved to pass this SI.**

Turtles

Pelagic longlines have been implicated as a major source of anthropogenic mortality for loggerhead and leatherback sea turtles (Lewison et al. 2004).There are significant losses for several turtle populations from ICCAT longline fishing (ICCAT 2014).The semi-quantitative, Level 2 ERA conducted by ICCAT (Angel 2014) has demonstrated that purse seine fishing poses negligible threats to turtles relative to longline fishing. The assessment team fails to take into account and to quantify the fisheries impact on single populations. The Atlantic Ocean is home to some of the largest and some of the smallest RMUs in the world (Wallace et al. 2010a). It hosts the largest populations (RMUs) of the critically endangered leatherback turtle (in Gabon). The east Atlantic populations of both hawksbill and olive ridley turtles, and the leatherback turtles in the south Atlantic (both east and west) are amongst the smallest RMUs in the world and are likely to be the most susceptible to fishing pressures; the South Atlantic leatherback turtles are at risk from high seas fisheries as they undertake trans-Atlantic migrations (Marcovaldi et al. 1999) The Loggerhead turtle population in the North East Atlantic (Nesting Area Capo Verde) is classified as one of the 10 most threatened sea turtle populations worldwide.



IUCN Priority area. Source: Wallace et al. 2011

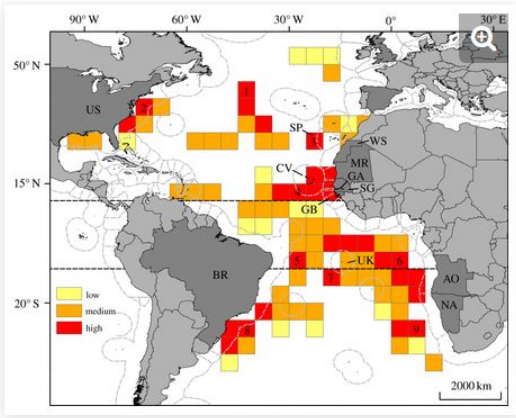


Figure 2. Download figure | Open in new tab | Download powerpoin

Long-term susceptibility of leatherback turtle to bycatch in longline fisheries. This map shows where high-fishing-pressure areas overlapped with leatherback habitat use, between 1995 and 2010, in the Atlantic Ocean. Three classes were defined: low (high fishing pressure/low turtle use) medium (high fishing pressure/medium turtle use) and high susceptibility (high fishing pressure/high turtle use). Nine main high-susceptibility areas were identified (nos 1–9 on the map). These areas occurred both in international waters and in the EEZs of 12 countries (in dark grey) fringing the Atlantic, comprising eight in the northern Atlantic—Cape Verde ('CV', no. 4),

The Cape Verde Islands has a loggerhead turtle nesting population of approximately 1000 individuals (Ehrhart, Bagley and Redfoot 2003). Current trends in the number of nests suggest that this population is decreasing. Incidental and targeted catch of sea turtles are the main offshore threats (Bolten et al. 2000, Mejuto 2008) (ICCAT 2014).

The sizes of the loggerheads captured in the longline fishery are significantly larger than those of the general population in the waters around the Azores. The conservation implications of these results are serious as Crouse *et al.* (1987) reported these size classes as being the most important for the recovery of the North Atlantic loggerhead populations. Both loggerheads and leatherbacks are captured on the baited hooks as well as entangled in lines. The largest size classes of loggerheads present in the eastern Atlantic are impacted by this fishery (Ospar 2010). Conservation efforts, which are often focused on eggs and nesting beaches, would be more effective if refocused to reduce

by-catch. In a declining population, adult and large immature turtles make the greatest contribution to the survival of the population (Crouse *et al.,* 1987). Laurent *et al.* (1992) showed that the main factor affecting population growth rate for the Mediterranean loggerhead population is adult survival and considered fecundity to be less important. Thus, the reduction of natural or anthropogenic mortality of eggs is not sufficient as a conservation measure to assure the survival of the species. It is of high priority to concentrate efforts on the protection of large sub-adults and adults (Panout *et al.* 1995 in Ferreira *et al*. 2001). Total estimated annual turtle mortality in longline fishing under ICCAT auspices, for the 13 RMUs for which estimates could be made, amounted to ~25,000 turtles killed per annum according to the approach and stratifications that were adopted in the ICCAT turtle risk analysis.

Based on the findings of García-Cortés (2015) who reported encounter rate of 0.00080 turtles per hook in the North Atlantic Area: 10º-30º N / 15º-35º W and based on an average effort of 4 Mio hook per year in this area (UoA fishing effort in this area in 2015; source ICCAT database) it must be concluded that over 3200 turtles are caught in this relatively small area around Cape Verde each year from the UoA alone. Mortality rates reflect immediate and delayed mortality as a result of interaction with longline gear, were estimated by the US NMFS (2001) as 17–42% for loggerheads, and 8–27% for leatherbacks. That means that the UoA kills every year > 1000 turtles around the Cape Verde and it is likely that this impacts the local endangered nesting population of approximately 1000 individuals. **A score of 60 can not be justified.** Especially when taking into account that the fishery especially targets seamounts in this area and Seamounts appear to be important habitats oceanic loggerhead turtles (Ospar 2015).

PI 2.3.2 ETP species management strategy UoA1 & UoA2.

The fishery is not ready to pass this PI, please see specific notes on each SI below.

a) Management strategy in place

The measures listed in the scoring rationale for 60 are well below the best practices for pelagic longline in other areas. This gear has increased risk of interaction with pelagic ETP species and needs to take increased precaution and measures that are targeted to reduce mortality.

One of the measures listed by the assessment team is recording of interaction with ETP species. However, as discussed above there is evidence that the mandatory reporting is not done by the UoA. Independent fishery studies as well as the observer data have shown significant interaction with sea turtles and ETP sharks, however this has not been reflected in the fleet's logbooks. This should be taken as evidence that they are not following the measure.

Catches are not sufficiently minimized and interactions not reported. Compared to the measures that would be possible to implement without larger economic consequences it is frustrating to see that only very few (and largely ineffective measures) are implemented in the UoA. The downfalls of the implemented measures to decrease unwanted shark bycatches are already discussed in PI 2.1.2 and PI 2.2.2. However, we would like to remind, that the fleet in assessment is using steel lines, J- hooks, and hooks illuminated by lights. these are all fishing techniques that increase the interactions with turtles and protected sharks. ICCAT specifically notes that recent international scientific studies on circle hooks show a statistically significant decrease in sea turtle by-catch when such hooks are used in pelagic longline fishing and that, with the use of circle hooks, the hooking location can lead to a decrease in post-release mortality of incidentally caught species *[ICCAT Res. 03-11]*.

Temporal /spatial closures are also not implemented, although in the case of migratory species, the solution is not ecosystem protection alone, but taxon-specific protection of vulnerable life stages (Bowen & Roman 2005). The specific management strategy will depend on the idiosyncratic life histories of the target species. In sea turtles this clearly includes nesting beaches and juvenile-feeding habitats, which should focus on seamounts. The discovery of the importance of seamounts for sea turtles raises the possibility of protecting these animals by establishing marine protected areas around seamounts which, combined with other fishery management options (*e.g*.,

gear modifications, line retrieval times, time/area closures) in these critical areas, would reduce incidental capture of turtles (Santos *et al.*, 2007; (Ospar 2015).

There is not sufficient evidence to show that the measures **are in place or highly likely to achieve national and international requirements.** Guidance states that 'minimise mortality' must include post release mortality and avoidance of catch. The measures listed are not decreasing catch rates nor is the basic reporting requirement being fulfilled. **The fishery is not prepared to pass on their ETP species management.**

c) Management strategy evaluation

As noted above the measures listed in the assessment report for sea turtles are not best practice and cannot be considered likely to work. We note the measures that have been implemented in other areas that should be the basis for evaluating whether the measures in place are sufficient. This is especially concerning as this is such a wide ranging fishery, covering many areas of distribution of sea turtles and possibly many populations.

The scoring of 60 is only based on seabirds. There is no scoring rationale for sea turtles and the fishery should not pass for sea turtles.

While it is true that this Spanish longline fleet is not the only threat to the recovery of loggerhead and leatherback turtles, their impact must be addressed. Research cited above confirms this gear type and fishery has a high risk of interaction with loggerhead and leatherback turtles since the areas used by these species for feeding overlap with where the fishery sets its gear closely. This fishery does, therefore, have a higher burden to reduce risk to the endangered loggerhead that other fisheries.

The argument that this fishery has minimal interactions is not borne out by other research and the independent observer study. The argument that measures implemented by this fishery will not alone achieve recovery is not an excuse for inaction. This is not in keeping with the Precautionary Principle as required to be implemented by the MSC standard. The guidance also states that when UoAs are overlapping with other previously certified UoAs the cumulative impact and measures must be taken into account. It is not justified for the scoring to based on the isolated impact of this UoA alone, especially now that MSC is potentially certifying the majority of ICCAT pelagic longline fleets that interact with these ETP species in the North Atlantic and this fleet represents significant effort in the South Atlantic.

As in all migratory species recovery the solutions require each country and fleet to take responsibility to minimize their threat as much as possible to cumulatively create the conditions for success. The MSC can also help to create incentives for collective action no matter how small the percentage of threat assigned, by requiring clear action - this creates an interested set of fisheries to move of migratory species recovery.

Based on comparison to the management measures in other areas, there is no plausible argument that the measures in place in this UoA are likely to reduce direct impact. In fact, they are well below other industry standards.

Measures in place in other countries that actually aim to minimize mortality of sea turtles include:

- strict bycatch/interaction limits that shut down the fishery
- bait restrictions specific to turtles
- spatial closures geared towards reduction of bycatch
- temporal closures geared towards reduction of bycatch
- temperature based regulations
- hook restrictions to 18/0 circle hooks
- soak time restrictions
- incentives for changing fishing gears

There is no evidence that these practices have been considered, and no justification for reasons they have not been considered. Furthermore, without meaningful catch data from

the fishery (provided by comprehensive observer coverage) it is not possible to determine what measures would be necessary to minimize mortality.

d) Management strategy implementation

It is a key concern that even the minimal measures stated to be in place by the assessment team are not being properly implemented in this fishery. As stated above there observer coverage is too low to be considered robust enough to ensure implementation and there is little at-sea monitoring, which is the only way to ensure implementation of measures for species that are not landed. Before they pass this SI, the fishery should show analysis that their observer coverage is indeed statistically significant to show evidence of implementation and to detect impact. Other certified UoAs have been made to estimate with accuracy the mortality rates of sea turtles in order to achieve certification and that the observer coverage is robust enough to gauge implementation. **The UoA should not pass this SI.**

e) Management strategy evaluation and review of alternative measures

As noted above there is no evidence that the fleet has adequately explored alternative measures that are in other fleets. The one study cited in the assessment report was with two boats and completed over a decade ago. The ICCAT reviews are broad and the suggested mitigation measures have not been implemented by the fleet.

A score of 80 is unjustified because there is not an **objective basis for confidence** that the measures/strategy will work, based on **information** directly about the fishery and/or the species involved.

Information directly about the fishery is scarce because of the very low observer coverage and because of the misreporting of the UoA. The populations of ETPs sharks and sea turtles are declining (Baum, 2005; Lewison, 2007). Catches of protected sharks are high (>300 tons / year) and very high mortalities have to be expected (60-100%) while there are no information about the stocks (as example see ICES advice Bigeye thresher below).

Table 9.3.43.1 Common thresher shark in the Northeast Atlantic. State of the stock and fishery relative to reference points.

		Fishing pressure					Stock size			
		2012	2013	2014			2013	2014	2015	
Maximum sustainable yield	F_{MSY}	?	?	?	Undefined	MSY $B_{trigger}$	?	?	?	Undefined
Precautionary approach	F_{pa}, F_{lim}	?	?	?	Undefined	B_{pa}, B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	-	-	-	Not applicable	SSB_{MGT}	-	-	-	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-	?	?	?	Unknown

Table 9.3.43.2 Bigeye thresher shark in the Northeast Atlantic. State of the stock and fishery relative to reference points.

		Fishing pressure					Stock size			
		2012	2013	2014			2013	2014	2015	
Maximum sustainable yield	F_{MSY}	?	?	?	Undefined	MSY $B_{trigger}$	?	?	?	Undefined
Precautionary approach	F_{pa}, F_{lim}	?	?	?	Undefined	B_{pa}, B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	-	-	-	Not applicable	SSB_{MGT}	-	-	-	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-	?	?	?	Unknown

ICES advice 2015: Bigeye thresher:

Also interactions with loggerheads and leatherbacks could have serious consequences for threatened populations (see PI 2.3.1). Alternative measures to minimise UoA-related mortality of ETP species are not implemented as appropriate like sampling protocols regarding by-catch data

collection, meaningful observer coverage, circle hooks, minimize use of light sticks, closures of hotspots etc.

PI 2.3.3 ETP species information UoA1 & UoA2.

The fishery should not score 60 in this PI. Qualitative information is not **adequate to estimate** the UoA related mortality on ETP species. “Adequate” refers to the quantity and quality of information needed to justify the level of risk or certainty associated with the specific Scoring Guidepost (SG).

According to GSA 3.6.3 0 on adequacy of information for P2 species 2.1.3, 2.2.3, 2.3.3:
The validity of the qualitative information should be triangulated with stakeholders who know the fishery well. In this case, many stakeholders have serious concerns about the adequacy of information being captured by the fleet and the extremely low observer coverage that is out of compliance with ICCAT minimum standards.

ETP shark species were assessed as high risk species that can easily be overexploited even at low fishing mortality. Stock status and abundances of these ETP shark species are not assessed. Also, due to misreporting of the fleet and the very low observer coverage, there is no adequate quantity and quality of information regarding bycatch levels. It must be noted that generally, for species that are highly variable, clumped in distribution and/or relatively rare, higher levels of observer coverage are needed (MSC Fisheries Standard (Annexes S) and Guidance v2.0 page 442).

We are very concerned that the observer coverage is being used to justify a score of 60 when it is actually evidence that the fishery is out of compliance with ICCAT and not completing their logbooks accurately. The fishery should be meeting the minimum legal requirements to be considered for certification.

The scoring rationale does not justify 60.

PI 2.5.1 Ecosystem outcome UoA1 & UoA2.

Referring to Anderson & Pedersen (2009), Branch et al (2010) and Persching (2015) the assessment team argues that it is highly unlikely that pelagic longline fisheries disrupt key elements of the ecosystem structure and function to the point where there would be serious or irreversible harm (Score 80). However, Anderson & Pedersen (2009) and Persching (2015) re-investigate results from the Baltic Sea, the Black Sea and the eastern Scotian Shelf which are of limited significance for pelagic longline fisheries. Branch et al (2010) simply found that mean trophic level (MTR) alone is a bad indicator to detect trophic shifts in the ecosystem. The authors simulated 25 ecosystem models and found that at the end of the observation period (100 years) most species were depleted and many collapsed to less than 0.1B0, but MTR returned to values observed in unexploited systems because species across all trophic levels are equally depleted (Branch et al 2010). Using this interpretation to deny that longline fisheries that deplete top predators have an ecosystem impact is more than cynical.
Anderson & Pedersen (2009) describe that trophic cascades are damped as it comes further down from the perturbed trophic level and as ecosystem in which longline fisheries occur, all trophic levels are fished, a top-down effect of the longline fishery will not be observable throughout the entire food web. The finding that ecosystem effects are damped does not, however, mean that they do not exist, but merely that due to the complexity of the system and the problems associated with their identification in open systems, they are difficult to prove. The authors found that the trophic dampening was about 50% per trophic level (Andersen & Pedersen 2009). Also Pershing et al. (2015) found strong top-down effects in all examples investigated, but at the same time other factors such as physical parameters (salinity, stratification) also played a significant role in structuring the ecosystem. Therefore the three cited references are not suitable to argue that it is highly unlikely that pelagic longline fisheries disrupt key elements of the ecosystem structure and function to the point

where there would be serious or irreversible harm (Score 80).
Top-down effects have been described for global tuna and shark fisheries by a variety of studies (Baum et al. 2003, Myers & Worm 2003, 2005, Hinke et al. 2004, Ward & Myers 2005; Worm et al. 2005, 2006, Myers et al. 2007, Baum & Worm 2009). The discussion whether or not top-down effects qualify for the definition of a regime shift (Persching et al. 2015) in this context is purely academic as the MSC methodology asks whether or not key elements of the ecosystem structure are disrupted.
Schindler et al. (2012) demonstrate that blue shark populations are very sensitive to low exploitation rates. Although population predation rates by yellowfin tuna are much higher than those by blue sharks, longline fisheries have substantially greater effects on shark predation than on yellowfin tuna predation at the food web scale (Schindler et al. 2002).
Long-line surveys in the tropical Pacific documented up to 10-fold declines in catch rates of large pelagic predators (tunas, billfishes and sharks) from 1950 to 2000, which coincided with 10- to 100-fold increases in catches of pelagic stingrays (Dasyatis violacea) and other smallbodied mesoconsumers over the same timeframe (Heithaus et al. 2008).
One of the most evident outcomes from ECOPATH modellings of various scenarios including rapid depletions of sharks owing to heavy fishing (Stevens et al. 2000) is that the ecosystem responses to removal of sharks are complex and fairly unpredictable, but they can be ecologically (and economically) significant, and may persist over long time periods (Stevens et al. 2000). Therefore score 80 is not justified.

PI 2.5.3 Ecosystem information UoA1 & UoA2

We do not think a score of 80 is justified without further information and research by the client. It has been shown that these UoAs in particular compared to existing certified swordfish fleets have concentrated fishing on seamounts. This is of particular concern and needs to be assessed.

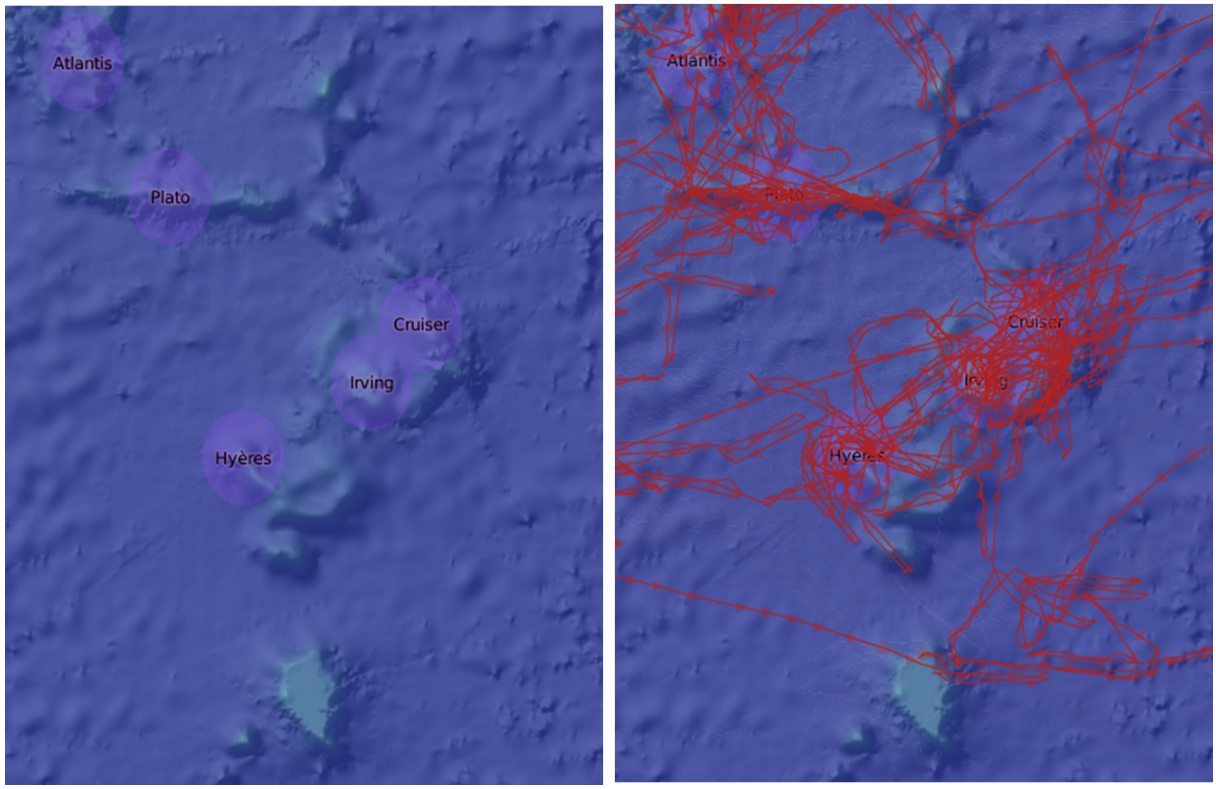
Main impacts of the fishery on the key ecosystem elements can be broadly inferred from existing information, but have been investigated in detail. Especially the ecosystems on seamounts, their bentho-pelagic coupling and their importance as aggregation areas are poorly known

The ecosystem effects of longline fisheries are poorly understood, especially with regard to highly susceptible oceanic shark species as pelagic top predators and the potential impact of their depletion on the lower trophic levels in the foodweb. This is even more relevant considering the strong focus of the Spanish longline fishery for swordfish on seamounts. Sharks as are highly susceptibility to overfishing and this is further enhanced by the fact that there is a large spatial overlap of longline fisheries with hotspots of shark occurrence (Queiroz et al. 2015). It is widely known that many deepwater species gather around the peaks of seamounts and are thus easy targets for fishing and prone to rapid depletion and overfishing (Koslow et al. 2000, Vaske Junior et al. 2009). Seamounts are also known to attract visiting pelagic species such as tunas, sharks, billfishes, sea turtles and marine mammals (Kimley et al. 1988, Morato et al 2008, 2010).

In the Pacific Ocean, a higher probability of catching sharks in the vicinity of seamounts was found for porbeagle shark, short-finned mako shark and silky shark and higher catch rates were observed for silky sharks (Morato et al 2010). Vanaperre et al. (2014) found strong evidence for the existence of a discrete nursery area for blue shark in the North Atlantic associated to the seamount of the Azores archipelago.

The assessment team failed analyse and to discuss the UoA fishing activity on seamounts in this assessment. Seamounts host often high biodiversities and complex foodwebs. Litvinov (ICES CM 2004 K: 11) stated in a study about the rule of seamounts: "*In addition to permanent species populations of seamounts, there are dense aggregations of oceanic and semioceanic sharks over some of them: Prionace glauca, Isurus oxyrinchus, Alopias superciliosus, Sphyrna zygaena. Sharks are up to 20 times more abundant there than in oceanic waters. Such aggregations exist in East Atlantic, over Meteor, Yer, Erving and Atlantis in Northern Hemisphere.....It is still unknown, are such aggregations all-the-year-round or seasonal, but it is clear that aggregations of top predators significantly influence oceanic ecosystems, including seamounts, and interactions between large pelagic sharks aggregations and populations of fish and invertebrates inhabiting*

seamounts are still unknown. Thus, from one side sharks aggregations themselves need protection, and from other side their influence to be taken into account when planning exploitation of species inhabiting submarine mounts.....Blue shark Prionace glauca absolutely dominates these aggregations. Aggregations mainly consist of Blue shark adult males of 170-280 cm; It is undoubtedly that the dense male aggregations of the blue shark are the crucial points for the species survival and due protection to be put on them on the international level"



Map: Seamount complex South of the Azores. Red lines show UoA vessel tracks in 2016 based on AIS data.

Figures above display fishing activity of the UoA in this area in 2016 based on AIS data. It becomes evident that the fleet targets these seamounts and that there was no protection put in place in the last 12 years after Litvinovs report was published. Scientific data about the pelagic diversity - seamount coupling is very scarce for this Azores Seamount seamount complex and even much less is known about most other seamounts in the atlantic. Due to missing recordings in the logbooks of the fleet, no data of shark diversity or seasonal changes in abundances can be extrapolated. And Adequate information is not available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.

There is no consideration of the above information in the scoring of 2.5.2 or 2.5.3. Due to unique nature of this fleet compared to other already certified UoAs, it is important to consider their impact on these vulnerable ecosystems.

PI 3.2.2 Decision-making processes

MSC Standard 2.0 states that:

As part of Principle 3, the fishery is required to incorporate an appropriate mechanism for the resolution of disputes arising within the system.
7.4.2 A fishery shall not be eligible for certification if there is no mechanism for resolving disputes, or if the disputes overwhelm the fishery.
7.4.2.1 If a fishery applying for certification is the subject of controversy and/or dispute at any time during the assessment process or certification cycle, the CAB shall consider: If there is a mechanism for resolving disputes, whether that mechanism is adequate to deal with potential or existing disputes. (e.g., do stakeholders have access to the mechanism for resolving disputes and is there sufficient scope to cover the relevant issues).

Based on the information provided by Stakeholders (see PCDR Volume 2) there is a strong dispute between the Fishery and diving operations based on the Azores that specialized on shark diving tourism. see also
http://www.pescazores.com/noticias/regionais/estamos-nos-acores-a-trocar-centimos-por-milhoes-com-os-tubaroes/

Due to the strong fishery pressure on sharks around the Azores, sightings of sharks became more rare in the recent years and depletion of local shark stocks had economic consequences for the tourism operators on the islands. There is clear scientific evidence, that the revenue from a living shark close to a tourist destination is 10-1000 times higher than a dead shark fished for meat and fins (Vianna et al 2012; Dicken 2009; Clua 2011). We are not aware of any existing legal mechanism for the resolution of the dispute between local resource users and the internationally operating spanish Longline fleet managed by ICCAT.

We are wondering why the assessment team did not discuss this dispute although it was raised early in the assessment phase.

PI 3.2.3 Compliance and enforcement UoA1 & UoA2.

The minimum requirement (score 60) for issue c:
Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery

You will be aware that, since 2010 the law requires that all Spanish longline vessels, in all fishing areas, report any bycatch of hammerhead or thresher sharks. The available objective and most recent evidence is that these species represent about 1% of the total catch. There having been no other material change other than the obligation to report, it is to be expected that these species have and will continue to amount to about 1% of the total catch – as much as 250 t.
The information contained in the report is that no interactions with these species has been recorded in the logbooks between 2010 – 2014. In our view, the only rational conclusion based on independent and objective evidence is not that there have been no interactions, but that the inevitable interactions have not been recorded.

Not to record is contrary to Spanish and European law. For that reason and because a failure to comply with domestic law governing reporting and monitoring cannot reach the MSC standard, properly interpreted, this fishery cannot reach the standard required by MSC Compliance and enforcement standards (PI 3.2.3). PI 3.2.3 requires it to be shown that the fishery complies with

relevant laws and the management system for the fishery under assessment.

Relevant recommendations and laws:

ICCAT recommendation (08-07):

RECALLING the need to annually report Task I and Task II for catches of sharks in conformity with the ICCAT Recommendation Concerning the Conservation of Sharks Caught in Association with Fisheries Managed by ICCAT [Rec. 04-10];

THE INTERNATIONAL COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNA (ICCAT) RECOMMENDS THE FOLLOWING:

CPCs shall require vessels flying their flag to promptly release unharmed, to the extent practicable, bigeye thresher sharks (Alopias superciliosus) caught in association with fisheries managed by ICCAT which are alive, when brought along side for taking on board the vessel. CPCs shall also require that incidental catches as well as live releases shall be recorded in accordance with ICCAT data reporting requirements.

ICCAT recommendation (10-08): https://www.iccat.int/Documents/Recs/compendiopdf-e/2010-08-e.pdf

Spanish law Orden ARM/2689/2009 (google translate) adopted 2009

Introduction:
Among the recommendations adopted recently stands out for its importance the recommendation (08-07), ICCAT, on the conservation of the bigeye thresher (Alopias superciliosus) caught in association with fisheries managed by ICCAT…. Among the shark species most vulnerable to this type of catches are species of the family Sphyrnidae (hammerhead and Eusphyra genera), and family Alopiidae (sole genus Alopias) as thus it became clear the Standing Committee on research and statistics of ICCAT (SCRS) at its annual meeting in 2007, which highlighted the need to improve the communication of data on the capture , effort and discards of sharks, and the reduction of the fishing mortality on bigeye SCAD thresher shark (Alopias superciliosus) and fish (family Sphyrnidae) hammer.

Article 2.
Release of sharks and registration of information.
1. Notwithstanding the provisions of the previous article, when capture occurs Of the Sphyrnidae Families (genera Sphyrna and Eusphyra), and Family Alopiidae (sole genus Alopias), vessels should release them alive when Come to the side of the boat alive or are inside the fishing net. This fact shall be recorded in the logbook of the European Communities with Indication of estimated weight, position and date of shark release.
2. Likewise, the shark specimens must be entered in the logbook Of both families that arrive dead to the side of the ship with indication of the weight Estimated, date and position.
3. The fishing vessels that are the object of this order must comply with the obligations Notification provided for in Article 13 of Regulation (EC) No 1006/2008 of 29 September 2008 on the authorization of fishing activities of vessels Community fishing vessels outside Community waters and access to Community vessels To Community waters, amending Regulations (EEC) No 2847/93 and (EC) No 1627/94 and repealing Regulation (EC) No 331/94.

It is not understandable why the assessment team did not raise a flag and stopped the assessment when they overlooked the dimension of illegal non-reporting.

PCDR page 243
"PI 2.3.3: In accordance with Order AAA/658/2014, all interactions with any specimens of ETP species should be registered, recording the species (as far as possible), the result of the interaction (dead, live, released live specimen), date and position."

However, no interactions with ETP species have been recorded in the logbooks of any vessel included in any of the two UoAs between 2010 and 2014 (see Table 3 11 and Table 3 12). Mejuto et al. (2006) and ICCAT (2014) confirm interactions between the UoAs and sea turtles, and observer's IEO data (Table 3-10) confirms interactions with protected sharks. Therefore, it can not be ensured that interactions with ETPs are being properly recorded, and interactions with sea turtles and protected sharks may be underestimated. Taking this into consideration, the assessment team concludes that information available is not sufficient to assess the UoAs related mortality and impact and to determine whether the UoAs may be a threat to protection and recovery of the ETP species. In addition, it is important to consider that ETPs can only be monitored at sea, and the observer's coverage is low (1% in the North Atlantic and 3% in the South Atlantic)."

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