Bluefin tuna longline fishery in the Mediterranean

Pre-assessment Report

Conformity Assessment Body (CAB)	Global Trust Certification Ltd
Assessment team	Lead Assessor, Gemma Quílez-Badia (TL and P2) Assessor, Giuseppe Scarcella (P1 and P3)
Fishery client	MSC Italy
Assessment Type	Pre-assessment
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2. Glossary

Acronym	Full Term
ABNJ	Areas Beyond National Jurisdiction
AIS	Automatic Identification System
BFT	Bluefin Tuna
BMSY	Biomass at Maximum Sustainable Yield
CA	Consequence Analysis (RBF)
CDS	Catch Documentation Scheme
CF	Common Fisheries Policy
CFR	Community Fishing Register
CoC	Chain of Custody
CPC	Contracting Party and Cooperating Non-Contracting Party
CPU	Catch per Unit of Effort
CPUE	Catch per Unit Effort
CSA	Consequence Spatial Analysis (RBF)
DCRF	Data Collection Reference Framework
DNV	Det Norske Veritas
DR	Dredge
EC	Exceptional Circurrence
EEZ	Exclusive Economic Zone
EFCA	European Fisheries Control Agency
EMS	Electronic Monitoring System
ETP	Endangered, Threatened, and Protected species
EU	European Union
eBCD	Electronic Bluefin Catch Document
FAD	Fish Aggregating Device
FCR	Fisheries Certification Requirements
FMSY	Fishing Mortality at Maximum Sustainable Yield
GBYP	Atlantic-wide Research Programme for Bluefin Tuna
GES	Good Environmental Status
GFCM	General Fisheries Commission for the Mediterranean
GN	Gillnet
GSA	Geographical Sub-Area
HCR	Harvest Control Rule
HMS	Highly Migratory Species
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
IUU	Illegal, Unreported and Unregulated (fishing)

Acronym	Full Term
LL	Longline
LTL	Low Trophic Level
MASAF	Ministero dell'Agricoltura, della Sovranità Alimentare e delle Foreste (Italy)
MEDAC	Mediterranean Advisory Council
MCRS	Minimum Conservation Reference Size
MLS	Minimum Landing Size
MP	Management Procedure
MSE	Management Strategy Evaluation
MSC	Marine Stewardship Council
MSFD	Marine Strategy Framework Directive
MSY	Maximum Sustainable Yield
NGO	Non-Governmental Organization
OPPAP	Organizzazione di Produttori della Pesca Ami e Palangari Soc. Coop.
PA	Principle Area
PEMAC	Direzione Generale Pesca Marittima (MASAF unit)
PI	Performance Indicator
PISG	Performance Indicator Scoring Guidepost
PRI	Point of Recruitment Impairment
PS	Purse Seine
PSA	Productivity-Susceptibility Analysis
RBF	Risk-Based Framework
RFMO	Regional Fisheries Management Organisation
RMU	Regional Management Unit
SBB	Spawning Stock Biomass
SG	Scoring Guidepost
SI	Scoring Issue
SIC	Sites of Important Communities
SPZ	Special Protection Zone
STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
TCM	Technical Conservation Measure
TN	Trammel Net
UoA	Unit of Assessment
UNCLOS	United Nations Convention on the Law of the Sea
VME	Vulnerable Marine Ecosystem
VMS	Vessel Monitoring System

3. Executive summary

3.1. Names and brief description of assessors/authors

This MSC pre-assessment report was drafted by the following team:

Assessment Team Members:
Lead Assessor, P2, and traceability: Gemma Quílez-Badia
P1 and P3 Assessor: Giuseppe Scarcella

Dr. GEMMA QUÍLEZ, holds a Biology degree from Barcelona University (Spain), an MSc in Natural Resource Management from Leicester University (UK) and a PhD in Marine Biology from Newcastle upon Tyne University (UK). She has over 20 years of experience working in Marine Biology, Marine Ecology, Marine Conservation Biology and Fisheries. In 1998, she did her MSc thesis on neritic and oceanic fish larvae from the Irish Sea. From 1999 to 2001 she worked at the ICM-CSIC (Marine Science Institute) of Barcelona (Spain) on trophic ecology of pelagic species larvae and participated in different oceanographic cruises on board the RV García del Cid. In 2004, while doing her PhD on Marine Invasive species, she was employed at the Fisheries Research Institute of Kavala, Greece, to conduct a study on trophic ecology of anchovy larvae. Also, during her PhD (2001-2006), she participated on several research cruises on board the RV Bernicia. Once she finished her PhD she went to work on marine invasive species for the Smithsonian Environmental Research Center (USA) until 2010.
From 2010 until 2016, she worked as fisheries policy officer for the Mediterranean Programme of WWF (World Wide Fund for Nature) in Barcelona, Spain. As such she worked on fisheries regional and international policy processes (e.g. GFCM, ICCAT, MedAC), mostly on Atlantic and Mediterranean bluefin tuna and at ICCAT, both at a scientific and policy level. She also participated in the creation and in the following functioning of the co-management committee of the Catalan sandeel fishery.
Since 2010 until 2019, she worked studying the biology, ecology and population dynamics of Atlantic and Mediterranean bluefin tuna and being deeply involved in the stock assessment of the species at ICCAT level.
In addition, from 2008 until 2018 she has been one of the two the Spanish representatives at two ICES working groups (WGBOSV - Working Group on Ballast and Other Ship Vectors, and WGITMO - Working Group on Introductions and Transfers of Marine Organisms).
Since 2018 and until present, she has been working as MSC Fisheries auditor and more recently as Fisheries Scheme Manager and Technical Scheme Lead. She's currently full-time employed by NSF.
Her experience (over 8 years) studying the biology, ecology and population dynamics of Atlantic bluefin tuna, deeply involved with ICCAT, as well as her previous work on trophic ecology of pelagic species larvae, proves her capacity to meet the qualification and competency criteria for PC3 (i) Fishing impacts on aquatic ecosystems. Her 6 years as WWF fisheries officer working on fisheries policy processes (mostly on Atlantic and Mediterranean bluefin tuna) and on the co-management of the Catalan sandeel, proves her capacity to meet the qualification and competency criteria for PC3 (ii) Fishery management and operations.
In addition she meets the qualifications for Team Leader as she has undertaken over 20 MSC fishery assessment or surveillance site visits as a team member in the last 5 years, passed the IRCA SO22000:2018 Lead Auditor training course on April 2022, and the ISO 19011: 2018 on April 2019.

Dr. Giuseppe Scarcella is an experienced fishery scientist and population analyst and modeller, with wide knowledge and experience in the assessment of demersal stocks. He holds a first degree in Marine Biology and Oceanography (110/110) from the Unversità Politecnica delle Marche, and a Ph.D. in marine Ecology and Biology from the same university, based on a thesis "Age and growth of two rockfish in the Adriatic Sea". After his degree, he was offered a job as project scientist in several research programs about the structure and composition of fish assemblage in artificial reefs, off-shore platform and other artificial habitats in the Italian National Research Council – Institute of Marine Science of Ancona (CNR-ISMAR), now Institute for Biological Resources and Marine Biotechnologies (IRBIM). During the years of employment at CNR-ISMAR first and CNR-IRBIM later he has gained

experience in benthic ecology, statistical analyses of fish assemblage evolution in artificial habitats, fisheries ecology and impacts of fishing activities, stock assessment, otolith analysis, population dynamic and fisheries management. Since 2018 Dr. Scarcella is in the permanent staff of CNR-IRBIM as researcher. During the same years, he attended courses of uni-multivariate statistics and stock assessment. He is also actively participating in the scientific advice process of FAO GFCM in the Mediterranean Sea as well as in the European context. He was member of the Scientific, Technical and Economic Committee for Fisheries for the European Commission (STECF) from 2012 to 2019 and was chair of the STECF-EWG Assessment of balance indicators for key fleet segments and review of national reports on Member States efforts to achieve balance between fleet capacity and fishing opportunities.
He is author of more than 70 scientific paper peer reviewed journals. He is also author of more than 150 national, and international technical reports, most of them focused on stock assessment of demersal species, using also the similar approaches as the ones used in the evaluation of P1 stocks and evaluation of fisheries management plans. For some years now, Dr Scarcella has been working in fisheries certification applying the Marine Stewardship Council standard for sustainable fisheries, currently concentrating on Principle 1 and Principle 3of the Standard. Furthermore, Dr Scarcella holds the credential as Fishery team leader (MSC v2.0).

3.2. Brief explanation of the process applied and summary of assessment activities

This MSC pre-assessment was carried out partly remotely as desktop type assessment, and in addition the assessment team organised meetings with various stakeholders as part of the on-site visit portion of the assessment, to collect additional information to what was publicly available and to better understand the dynamics of the fishery.

3.3. Main strengths and weaknesses of the client's operation

Main strengths and weaknesses of the fishery are listed briefly below.

Strengths

- Preliminary, it seems quite a selective fishery (although data are not accurate – see Weaknesses).
- Robust recovery of Eastern Atlantic bluefin tuna stock since the 2006 Recovery Plan, supported by strong scientific evidence and management interventions (ICCAT stock assessments show biomass increase).
- Adoption of a science-based Management Procedure (MP) and Harvest Control Rules (HCRs) that are precautionary and incorporate extensive scenario testing through Management Strategy Evaluation (MSE).
- Effective compliance by the Unit of Assessment (UoA) with ICCAT measures, using selective longline gear with minimal discards and high reporting compliance.
- Comprehensive monitoring and data systems in place (e.g., e-logbooks, eBCD system) at EU and national levels to support management decisions.

Weaknesses

- Persistent uncertainties in stock assessments related to recruitment variability and unreported catches hinder achieving the highest MSC performance level.
- Ecological considerations of the target stock's role in the marine ecosystem are insufficiently addressed in current management procedures.
- Recreational catch reporting and monitoring gaps limit the completeness of data used in stock assessments.

- Information on the bycatch data is not accurate. I.e., the data provided by the client and what the AT was told during the site visit was not exactly the same.
- ETP interactions are not recorded
- No observers (physical or EMS) are on board the vessels

More detailed information on the strengths and weaknesses of the fishery has been presented in the following pages.

3.4. Extent to which the fishery is or is not consistent with the MSC Fisheries Standard

The Unit of Assessment (UoA) under consideration here is generally consistent with the requirements of the MSC standard.

4. Report details

4.1. Aims and constraints of the pre-assessment

This pre-assessment does not attempt to duplicate a full assessment against the MSC Fisheries Standard. A full assessment involves a group of assessment team members and public consultation stages that are not included in a pre-assessment. A pre-assessment provides a provisional assessment based on a limited set of information provided by the client. In the case of this fishery data availability was weak and additional information (e.g., detailed catch information for all the bycatch species, and recording of ETPs interactions) could improve the evidence base and increase the provisional score applied.

4.2. Version details

The versions of the MSC fisheries program documents used for this assessment are outlined in **Table 1** below.

Table 1. Fisheries program documents versions

Document	Version Number
MSC Fisheries Certification Process	Version 2.3
MSC Fisheries Standard	Version 2.01
MSC General Certification Requirements	Version 2.7
MSC Pre-Assessment Reporting Template	Version 3.4

5. Unit(s) of Assessment

5.1. Units of Assessment

5.1.1. Determination of fishery's status with respect to scope of the MSC Fisheries Standard

In accordance with MSC FCP v2.3 §7.4, GTC-NSF verified that the fishery is within scope of the MSC Fisheries Standard (see table below).

Table 2. Target species and method	
1	The target species (Bluefin tuna, *Thunnus thynnus*) is not an amphibian, reptile, bird or mammal
2	The UoA does not use poisons or explosives.
3	The UoA is not conducted under a controversial unilateral exemption to an international agreement
4	Forced labour requirements have not been verified at this stage.
5	Shark finning violations have not been verified at this stage.
6	The UoA includes a mechanism for resolving disputes and disputes do not overwhelm the fishery
7	Is this fishery enhanced?
	No.
8	Does the fishery target an introduced species?
	No.

5.1.2 Possible Unit(s) of Assessment

Included in **Table 3** below is the possible Unit of Assessment if the fishery were to proceed to full assessment including a justification for choosing it.

Table 3. Unit of Assessment (UoA)	
UoA	Description
Species	Bluefin tuna – *Thunnus thynnus*
Stock	Atlantic and Mediterranean Bluefin tuna
Fishing gear type(s) and, if relevant, vessel type(s)	Pelagic longliners: • 30 vessels are under 12 m and are categorized as small-scale coastal fishing boats operating between the Aeolian Islands and the Gulf of Catania (GSA 10 and GSA 19), primarily active from May to July. • 9 vessels over 12 meters operate in wider areas (GSA 11, 17, 18) and over longer periods.
Client group	O.P. Ami e Palangari Sco. Coop.
Other eligible fishers	
Geographical area	Western and Central Mediterranean and Adriatic Sea FAO Major Fishing Area 37, Western/Central Mediterranean, GSA 10, 11, 17, 18, and 19.
Harvest method/gear	Pelagic longline
Justification for choosing the Unit of Assessment	UoA defined by the Client

6. Traceability

6.1. Traceability within the fishery

The Bluefin tuna longline fishery in Sicily is composed by a total of 39 boats. 30 vessels are under 12 meters and are categorized as small-scale coastal fishing boats operating between the Aeolian Islands and the Gulf of Catania (GSA 10 and GSA 19), primarily active from May to July. After fulfilling their individual quotas, they switch to other fishing activities. 9 vessels are over 12 meters and operate in wider areas (GSA 11, 17, 18) and over longer periods.

Fishing operations for the <12m boats are carried out during the day and last for less than 24h. These boats have the following authorized ports for landing: Riposto, Santa Maria la Scala, Catania, Messina. The larger boats, however, could be away for few days and are authorized to land in Sardinia ports (Cagliari or Calasetta) or in the Adriatic (Fano). The larger boats usually can fish their quota in 1 day. While the bigger boats have storage in their boats, the smaller ones do not.

The small boats, once they hail in, they have to wait for 4h to be able to enter the port, so Capitaneria can go to inspect their catch. At port, the inspector measures the fish (weight and length) and it is compared with the reported values. The final official weight is the weight inspected.

In addition to the above, as part of EU COUNCIL REGULATION (EC) No 1224/2009, Article 58 on traceability[1], several requirements apply to Italian fisheries. These traceability requirements include the following:

1. Without prejudice to Regulation (EC) No 178/2002, all lots of fisheries and aquaculture products shall be traceable at all stages of production, processing and distribution, from catching or harvesting to retail stage.

2. Fisheries and aquaculture products placed on the market or likely to be placed on the market in the Union shall be adequately labelled to ensure the traceability of each lot.

3. Lots of fisheries and aquaculture products may be merged or split after first sale only if it is possible to trace them back to catching or harvesting stage.

4. Member States shall ensure that operators have in place systems and procedures to identify any operator from whom they have been supplied with lots of fisheries and aquaculture products and to whom these products have been supplied. This information shall be made available to the competent authorities on demand.

5. The minimum labelling and information requirements for all lots of fisheries and aquaculture products shall include:

(a) the identification number of each lot;
(b) the external identification number and name of the fishing vessel or the name of the aquaculture production unit;
(c) the FAO alpha-3 code of each species;
(d) the date of catches or the date of production;
(e) the quantities of each species in kilograms expressed in net weight or, where appropriate, the number of individuals;

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32009R1224&from=EN

(ea) the identification number of each lot; the external identification number and name of the fishing vessel or the name of the aquaculture production unit; the FAO alpha-3 code of each species; the date of catches or the date of production; the quantities of each species in kilograms expressed in net weight or, where appropriate, the number of individuals;
(f) the name and address of the suppliers;
(g) the information to consumers provided for in Article 35 of Regulation (EU) No 1379/2013 of the European Parliament and of the Council[2];

6. Member States shall ensure that the information listed in point (g) of paragraph 5 is available to the consumer at retail sale stage.

7. The information listed in points (a) to (f) of paragraph 5 shall not apply to fisheries and aquaculture products imported into the Union with catch certificates submitted in accordance with Regulation (EC) No 1005/2008.

8. Member States may exempt from the requirements set out in this Article small quantities of products sold directly from fishing vessels to consumers, provided that these do not exceed the value of EUR 50 per day. Any amendment to this threshold shall be adopted in accordance with the procedure referred to in Article 119.

9. Detailed rules for the application of this Article shall be adopted in accordance with the procedure referred to in Article 119.

Table 4. Traceability within the fishery.

Factor	Description
Will the fishery use gears that are not part of the Unit of Certification (UoC)? If Yes, please describe: - If this may occur on the same trip, on the same vessels, or during the same season; - How any risks are mitigated.	Yes. Although they will only use the specific gear type for Bluefin tuna during Bluefin fishing. They only change fishing gears once they have fulfilled their individual quotas for Bluefin tuna and they switch to other fishing activities (i.e., albacore, swordfish, …),
Will vessels in the UoC also fish outside the UoC geographic area? If Yes, please describe: - If this may occur on the same trip; - How any risks are mitigated.	No. For the small boats, as they do daily trips, they would not be able to fish outside the UoC geographic area. The bigger boats, even though they could go outside the UoC geographic areas, once they are fishing in one GSA they remain there until they land, therefore, that could never happen on the same trip. Moreover, there are strict catch documentation requirements, including electronic logbooks, real-time VMS and AIS vessel tracking, mitigating any risk.
Do the fishery client members ever handle certified and non-certified products during any of the activities covered by the fishery certificate? This refers to both at-sea activities and on-land activities. - Transport - Storage - Processing	No. In the small boats, there is no storage. At landing (after hailing in and waiting for 4h to enter the port so Capitaneria can go to inspect their catch), the product is sold to a fish monger (change of ownership at that point). There could be transportation, but this always happens after being sold to the fish monger, therefore, not included in the fishery certificate.

[2] Regulation (EU) No 1379/2013 of the European Parliament and of the Council of 11 december 2013 on the common organisation of the markets in fishery and aquaculture products, amending Council Regulations (EC) No 1184/2006 and (EC) No 1224/2009 and repealing Council Regulation (EC) No 104/2000 (OJ L 354, 28.12.2013, p. 1).)

Table 4. Traceability within the fishery.	
- Landing - Auction If Yes, please describe how any risks are mitigated.	Even though the bigger boats have storing holds, the same procedure is applicable to them, therefore, the risk is minimal.
Does transhipment occur within the fishery? If Yes, please describe: - If transhipment takes place at-sea, in port, or both; - If the transhipment vessel may handle product from outside the UoC; - How any risks are mitigated.	No, this is extremely unlikely.
Are there any other risks of mixing or substitution between certified and non-certified fish? If Yes, please describe how any risks are mitigated.	No, there are no other risks aside from those identified above.

7. Pre-assessment results

7.1. Pre-assessment results overview

7.1.1. Overview

The key limitations of this fishery have been briefly summarised in earlier pages. Details resulting from this pre-assessment are shown in the following pages in the form of:

- Recommendations,
- Summary of potential conditions by Principle, and
- Summary of Performance Indicator level scores

7.1.2. Recommendations

Key recommendations resulting from this pre-assessment include:

- The need to increase the availability of catch information and interactions with ETPs.
- The need to implement an observer program.
- The need to check which species (some are overexploited) and exact quantities of bait the UoA are using.

7.2. Summary of potential conditions by Principle

Table 5. Summary of potential Performance Indicator level scores.

Principle of the Fisheries Standard	Number of PIs with draft scoring ranges <60
Principle 1 – Stock status	0
Principle 2 – Minimising environmental impacts	4
Principle 3 – Effective management	0

7.3. Summary of Performance Indicator level scores

Table 6. Summary of Performance Indicator level scores.

Performance Indicator	Draft scoring range	Data deficient?
Principle 1 – Stock status		
1.1.1 – Stock status	60 – 79	No
Rationale or key points		
The 2022 ICCAT stock assessment for Eastern Atlantic bluefin tuna shows a clear recovery trend in spawning stock biomass since the 2006 Recovery Plan, though recruitment and biomass uncertainties remain. Despite current fishing mortality likely being below the $F_{0.1}$ proxy for FMSY, uncertainty prevents confirming full compliance with SG80.		
1.1.2 – Stock rebuilding	≥80	Not applicable.
Rationale or key points		
ICCAT implemented a rebuilding plan for Eastern Atlantic bluefin tuna, achieving reduced fishing mortality and likely stock recovery by 2022, supported by increased TACs and robust monitoring. A new Management Procedure adopted in 2022 maintains TACs through 2025, with ongoing stock assessments and empirical harvest rules indicating the stock meets rebuilding targets.		
1.2.1 – Harvest Strategy	≥80	Not applicable.
Rationale or key points		
ICCAT adopted a science-based Management Procedure (MP) for Atlantic bluefin tuna in 2022 to ensure sustainable exploitation and reduce reliance on political negotiations. The MP, supported by EU and Italian		

Table 6. Summary of Performance Indicator level scores.		
Performance Indicator	Draft scoring range	Data deficient?
regulations, sets catch limits and is reviewed regularly using MSE. Monitoring tools like the eBCD system and GBYP research enhance traceability and stock assessments. The UoA uses selective longline gear, resulting in minimal discards and high compliance with reporting and conservation measures.		
1.2.2 – Harvest control rules and tools	≥80	Not applicable.
Rationale or key points		
ICCAT has adopted a robust Harvest Control Rule (HCR) for Atlantic bluefin tuna under Recommendations 22-09 and 23-07, using abundance indices and management strategy evaluation to guide TACs. The HCR is designed to maintain stocks near $F_{0.1}$, aligning with MSC criteria (SG60 and SG80), though SG100 is not achieved due to ecological and implementation uncertainties. While stock assessments show recovery and fishing mortality remains below targets, unreported catches and increased fishing capacity pose significant risks. European and Italian regulations enforce the HCR, but persistent IUU fishing and incomplete ecological considerations limit full effectiveness.		
1.2.3 – Information and monitoring	60 – 79	Not applicable.
Rationale or key points		
Extensive monitoring and scientific research coordinated by ICCAT provide a strong foundation for managing Eastern Bluefin tuna, including data on stock abundance, removals, and environmental factors. The EU and Italy have implemented robust control systems, such as e-logbooks, eBCD, and vessel tracking, to ensure compliance with harvest control rules. However, significant gaps remain, particularly in recreational catch reporting and recruitment monitoring, which hinder full data reliability. As a result, SG80 is not fully met due to persistent uncertainties and underreporting.		
1.2.4 – Assessment of stock status	≥80	Not applicable.
Rationale or key points		
The 2022 ICCAT stock assessment of Eastern Atlantic and Mediterranean bluefin tuna used three validated models (VPA, SS, ASAP) and a Management Strategy Evaluation (MSE) to ensure robust and precautionary management advice. All models showed consistent trends in spawning stock biomass and fishing mortality, supporting confidence in stock status. The reference point $F_{0.1}$ was used as a proxy for FMSY due to uncertainties in the stock-recruitment relationship. The assessment process, including rigorous peer review, meets high scientific standards.		
Principle 2 – Minimising environmental impacts		
2.1.1 – Primary Outcome	≥80	No
Rationale or key points		
As stated in **Section 7.5.1** – Primary and Secondary species (see **Table 10**), the assessment team identified three Main primary species from the data that the client shared with the AT, i.e., Albacore and Swordfish (from logbooks - **Table 11**) and Argentine squid (bait species - **Table 15**). During the site visit, however, Skipjack was mentioned by the client, although it does not appear in the data provided by them. To be precautionary, the AT has included it as Primary Main. The Mediterranean Albacore, and Mediterranean Swordfish are not likely to be above the PRI. For Albacore, total catches of the UoA compared to total catches in the Mediterranean show that the UoA does not hinder recovery and rebuilding of the Albacore. For Swordfish, the UoA and overlapping MSC UoA certified catches do not hinder recovery and rebuilding of the Albacore. The stock status of eastern Atlantic skipjack tuna in 2020 was estimated with a high probability (78%) to be in a sustainable condition (green quadrant), with that stock not overfished or subjected to overfishing. Argentine squid (bait) in 2025 showed values comparable to the historical records observed in 2006, 2012, and 2014, indicating a robust and healthy stock.		

Table 6. Summary of Performance Indicator level scores.		
Performance Indicator	Draft scoring range	Data deficient?
The only minor primary species (although they are two different stocks) is the sardine used as bait, which come from the Adriatic and the North Tyrrhenian Sea. The Adriatic sardine, although in not likely to be above the PRI, it was found that the UoA does not hinder the recovery and rebuilding of the Adriatic sardine stock. The N Tyrrhenian stock was found "sustainably exploited".		
2.1.2 – Primary Management	60 – 79	Not applicable.
Rationale or key points		
All scoring issues, apart from Albacore would score ≥80. Mediterranean Albacore, however there are substantial uncertainties in the assessment (there are currently two scenarios providing very different perceptions of the stock status) and this is prevented the Committee (ICCAT) from providing specific TAC advice at this time.		
2.1.3 – Primary Information	<60	Not applicable.
Rationale or key points		
All species are not recorded in the logbook and detailed information needs to be available about the bait.		
2.2.1 – Secondary Outcome	60 – 79	Yes
Rationale or key points		
As explained in the background section for Primary and Secondary species (Section **7.5.1**) (**Table 10**), the following species were classified as Secondary minor: **Dolphinfish, Mediterranean spearfish, and round sardinella** (bait). In addition, during the site visit, talking to the client and the other skippers, they confirmed that very rarely they do catch **Blue shark (*Prionace glauca*)**, although, according to them, they are always release alive by cutting the line. However, these interactions are not reported in their logbooks. Being precautionary, the AT decided to assess the blue shark as main. Therefore, the only **Secondary main** species in this assessment is the **blue shark**. Blue shark: No interactions with/catches of blue shark are currently recorded in the UoA logbooks. In addition, the Mediterranean subpopulation has undergone a decline of 78–90% over the past 30 years (three-generation period). The Blue Shark is therefore listed as Critically Endangered in the Mediterranean Sea based on a past decline of up to 90% over three generations resulting from ongoing overfishing. Therefore, there is no evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding. Dolphinfish is fished within sustainable limits. However, the authors state that the stock assessment model can be improved in several of its aspects. Mediterranean spearfish: According to the PSA performed (**Table 19**) and the MSC PSA derived score (**Table 22**), Mediterranean spearfish **scores 97**. Round sardinella: According to the PSA performed (**Table 21**) and the MSC PSA derived score (**Table 22**), round sardinella **scores 98**.		
2.2.2 – Secondary Management	<60	Not applicable.
Rationale or key points		
UoA-related mortality of blue shark is not really known as not all catches/interactions are recorded in the logbooks. Therefore, there cannot be a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species.		
2.2.3 – Secondary Information	<60	Not applicable.
Rationale or key points		
Some species are not recorded in the logbook (including interactions with blue sharks), and no detailed information was provided for the bait species. Furthermore, there is no observer program or EM cameras on board to have fisheries-independent data.		
2.3.1 – ETP Outcome	60 – 79	No
Rationale or key points		

Table 6. Summary of Performance Indicator level scores.

Performance Indicator	Draft scoring range	Data deficient?
As explained in **Section 7.5.1** – Endangered, Threatened and Protected species, no ETPs are recorded in logbooks. However, according to the client and skippers interviewed during the site visit: - *Isurus oxyrinchus* (shortfin mako shark) are rarely caught and released alive by cutting the line. - Interactions with sea turtles are also extremely rare; and cetaceans and seabirds are absent. Shortfin mako: Based on information from MSC overlapping fisheries, the combined effects of the MSC UoAs on the shortfin mako are known and highly likely to be within the established limits. Sea turtles: According to the clients, sea turtle interactions do not appear to be a concern in this fishery. Consistent with the SELPAL study, interactions between sea turtles and the SATHOAN longline fishery were considered infrequent although they do exist. Known direct effects of the UoA are likely to not hinder recovery of ETP species. However, interactions with ETPs are not recorded in the logbooks, Best Practice protocol is not appropriately applied, and there are no observers or EM cameras on board.		
2.3.2 – ETP Management	60 – 79	Not applicable.
Rationale or key points		
There is a strategy in place for managing the UoA's impact on ETP species, however, as the UoA does not register interactions with ETPs, there are no physical or EM observers on board the vessels, and the Best Practice protocol is not being appropriately applied, there is not an objective basis for confidence that the measures/strategy will work, and the AT cannot know if the measures/strategy is being implemented successfully. There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species. However, these are not implemented as appropriate (i.e., no logbook records, no physical or EMS on board, and the Best Practice protocol is not being appropriately applied).		
2.3.3 – ETP Information	<60	Not applicable.
Rationale or key points		
No quantitative information is recorded by the UoA on interactions with ETPs and there are no physical or EMS observers on board.		
2.4.1 – Habitats Outcome	≥80	No
Rationale or key points		
The gear impact on the water column, i.e., the pelagic habitat (considered as the commonly encountered habitat for this UoA, **Table 17**), is considered negligible. There are no VMEs. Gear loss may consist of monofilament and/or hooks, which would interact with the commonly encountered habitat and eventually encounter the seabed. Interactions with benthic features, at a scale where irreversible impacts on habitat types becomes a risk, are only likely to occur when longlines are dragged across the seabed, which is extremely unlikely. Therefore, there is no evidence from the UoA.		
2.4.2 – Habitats Management	≥80	Not applicable.
Rationale or key points		
Considering that this fishery is extremely unlikely to impact benthic habitats, the term 'if necessary' applies here and management measures should not be required. The 'partial strategy' is the nature of the fishery (pelagic only). There is therefore high confidence that it works, based on information directly about the gear type and deployment. VMS data as well as the logbooks data give clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).		
2.4.3 – Habitats Information	≥80	Not applicable.
Rationale or key points		
The commonly encountered habitat impacted by the fishery is the water column on which the effect of a pelagic longline is negligible.		

Table 6. Summary of Performance Indicator level scores.		
Performance Indicator	Draft scoring range	Data deficient?
Since the gear does not interact with habitats, the (lack of) physical impacts on the main habitats are clear. The only commonly encountered habitat is the water column. VMS data and compliance with area closures enable any increase in risk to benthic features to be detected.		
2.5.1 – Ecosystems Outcome	60 – 79	No
Rationale or key points		
The UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. However, as explained above, the logbook is not properly filled in (there were by-catch species missing from the data provided by the client that were later indicated during the site visit; ETP interactions are not recorded in the lobooks), there are no observers (physical or EMS) on board, and the Best Practice protocol is not being appropriately applied.		
2.5.2 – Ecosystems Management	60 – 79	Not applicable.
Rationale or key points		
Overall, there are measures in place, if necessary which take into account the potential impacts of the UoA on key elements of the ecosystem. However, as explained in PI 2.5.1, the logbook is not properly filled in (there were by-catch species missing from the data provided by the client that were later indicated during the site visit; ETP interactions are not recorded in the lobooks), there are no observers (physical or EMS) on board, and the Best Practice protocol is not being appropriately applied. Therefore, as SG80 in PI 2.5.1 is only partially met, the AT cannot conclude that there is a partial strategy in place, if necessary, which takes into account available information and is expected to restrain impacts of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance. In addition, based on the above, the AT cannot have some objective basis for confidence that the measures/ partial strategy will work, neither that there is some evidence that the partial strategy is being implemented successfully.		
2.5.3 – Ecosystems Information	60 – 79	Not applicable.
Rationale or key points		
As explained in the PIs above, the information is only adequate to identify the key elements of the ecosystem. But due to the fact that the logbooks are not properly filled in (ETPs interactions are not registered), information on bycatch species is not accurate (evidenced in the site visit), and there are no observers (physically or EMS) on board, the AT **cannot** conclude that: - Information is adequate to broadly understand the key elements of the ecosystem, - Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail, - The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are known, or - Adequate data continue to be collected to detect any increase in risk level.		
Principle 3 – Effective management		
3.1.1 – Legal and customary framework	≥80	Not applicable.
Rationale or key points		
The fishery is governed by ICCAT, the EU, and Italy. ICCAT provides the legal framework but allows opt-outs, so SG100 is not fully met. The EU fully implements ICCAT rules through binding regulations, achieving SG100. Italy enforces these through national decrees, also meeting SG100, but overall, SG100 is not met across all jurisdictions.		
3.1.2 – Consultation, roles and responsibilities	≥80	Yes / No Not applicable.
Rationale or key points		

Table 6. Summary of Performance Indicator level scores.		
Performance Indicator	Draft scoring range	Data deficient?
ICCAT and the EU/Italy have well-structured governance systems ensuring transparency, stakeholder participation, and data use in line with SG60 and SG80 criteria. Despite broad coordination, inconsistent implementation across all CPCs prevents full achievement of SG100.		
3.1.3 – Long term objectives	≥80	Not applicable.
Rationale or key points		
ICCAT promotes sustainable tuna management through precautionary and ecosystem-based approaches, with binding recommendations like Rec. 22-08 for bluefin tuna. The EU's Common Fisheries Policy (Reg. 1380/2013) and MSFD require all member states to apply precautionary and ecosystem-based fisheries management. Italy's national law (Leg. Decree 4/2012) and ministerial measures implement EU and ICCAT obligations, supporting MSY and environmental protection. Through MASAF, Italy applies these frameworks via quota control, reporting, and monitoring, fulfilling SG60, SG80, and SG100 criteria.		
3.2.1 – Fishery specific objectives	≥80	Not applicable.
Rationale or key points		
ICCAT manages Atlantic tuna stocks through evolving recovery and management plans, including Recommendation 22-09 for bluefin tuna. It has adopted measures to reduce ecological impacts, including bycatch of sharks and ETP species, but lacks comprehensive targets under Principle 2. The EU and Italy implement ICCAT objectives via the CFP, with OPPAP applying sustainable practices, quota controls, and traceability. While SG60 and SG80 are met, incomplete targets for all ecosystem components mean SG100 is only partially achieved.		
3.2.2 – Decision making processes	≥80	Not applicable.
Rationale or key points		
ICCAT and the EU have established a robust governance system for bluefin tuna, based on scientific advice, precautionary principles, and consensus-based decision-making. These frameworks are implemented in Italy through MASAF and PEMAC, ensuring quota management, enforcement, and stakeholder participation. While SG60 and SG80 are achieved across governance and precautionary criteria, SG100 is not met due to structural and reporting gaps.		
3.2.3 – Compliance and enforcement	60 – 79	Not applicable.
Rationale or key points		
The ICCAT Monitoring, Control, and Surveillance (MCS) system relies heavily on national implementation, especially for small-scale fisheries like the Italian longline and handline fleet targeting bluefin tuna. In Italy, MASAF (formerly MIPAAF), through PEMAC, oversees compliance with ICCAT and EU regulations. Enforcement tools include logbooks, tagging, pre-landing notifications, and the electronic Bluefin Catch Document (eBCD). Multiple agencies — including the Coast Guard — carry out inspections, with documented enforcement actions in 2022 and 2023. The Producer Organisation (OPPAP) helps monitor quota use and supports compliance, but lacks transparent public reporting. MASAF control reports confirm active enforcement and some infractions, mainly involving traceability issues, undersized fish, or fishing during closed seasons — though these did not involve the UoA vessels. Overall, SG60 and SG80 are met due to the presence of structured national and EU frameworks, engagement of the PO, and enforcement records. However, SG80 is not met due to gaps in traceability and the failure of UoA vessels to record interactions with ETP species, as required by ICCAT Recommendation 11-10, EU Regulation 404/2011, and Italian law. This omission constitutes systematic non-compliance with international, EU, and national obligations, particularly regarding data collection under Principle 2. While general compliance is reported, transparency, recreational fishing oversight, and internal sanctioning processes remain areas for improvement.		
3.2.4 – Management performance evaluation	≥80	Not applicable.
Rationale or key points		

Table 6. Summary of Performance Indicator level scores.

Performance Indicator	Draft scoring range	Data deficient?
ICCAT, the EU, and Italy have established structured internal review systems for bluefin tuna management, meeting SG60 and SG80 criteria. ICCAT conducts compliance checks and scientific oversight, with periodic (but not regular) independent reviews. The EU enforces the Common Fisheries Policy and coordinates member state reporting to ICCAT, supporting adaptive governance. Italy, via MASAF, ensures national implementation, though external evaluations are limited, preventing full SG100 compliance.		

7.4. Principle 1

7.4.1. Biology of the stock

The Atlantic bluefin tuna (*Thunnus thynnus*) is a large, long-lived pelagic predator inhabiting temperate waters of the North Atlantic and the Mediterranean Sea. The Mediterranean represents the primary spawning area for the eastern Atlantic stock (eBFT), making it a biologically critical region for the species (Fromentin & Powers, 2005).

Atlantic bluefin tuna exhibit a life history strategy typical of large pelagic fish, characterized by rapid early growth, late maturity, and high fecundity. Larval development begins shortly after spawning, typically peaking from late May to July in the Mediterranean (Corriero et al., 2005). Juveniles grow quickly, reaching approximately 30–40 cm in length and about 1 kg in weight within their first six months (ICCAT, 2023). By age ten, individuals can measure around 2 meters in fork length (FL) and weigh approximately 170 kg, eventually reaching over 3 meters in length and exceeding 600–700 kg at full maturity (Rodriguez-Roda, 1967; ICCAT, 2023). Bluefin tuna are among the longest-lived tuna species, with a lifespan estimated at around 35–40 years, as confirmed by radiocarbon age validation studies (Neilson & Campana, 2008).

Eastern Atlantic bluefin tuna reach sexual maturity between four and five years of age, at lengths ranging from 105 to 140 cm (Corriero et al., 2005). Spawning occurs in warm, oligotrophic waters of the Mediterranean, particularly around the Balearic Islands, the Gulf of Sidra, and the Levantine Basin. Females are highly fecund, releasing several million buoyant eggs per spawning season (Medina et al., 2002). Spawning is typically concentrated between late May and July, when sea surface temperatures range between 22–27°C (Aranda et al., 2011).

Tagging and telemetry studies have demonstrated that eastern Atlantic bluefin tuna are highly migratory, with seasonal movements between spawning grounds in the Mediterranean and feeding areas in the North Atlantic (Block et al., 2005). While they are capable of diving to depths greater than 1000 meters, they spend most of their time in surface or near-surface waters, especially during feeding and spawning (Galuardi et al., 2010). Their ability to maintain a body temperature above ambient water temperatures (regional endothermy) allows them to exploit a wide thermal range (Blank et al., 2004).

Atlantic bluefin tuna are opportunistic predators feeding on a wide variety of prey. Their diet mainly consists of schooling pelagic fish such as anchovy (*Engraulis encrasicolus*), sardine (*Sardina pilchardus*), and mackerel (*Scomber* spp.), as well as cephalopods and crustaceans (Sarà & Sarà, 2007). Feeding behavior and diet composition vary with size, season, and geographic area. Juveniles in the Mediterranean typically prey on smaller forage species, while larger individuals feeding in the Atlantic target larger pelagic fishes and cephalopods (Battaglia et al., 2013). Taking into account the biological features of the stock it cannot be considered an LTL species.

7.4.2. Stock configuration

The stock structure of Atlantic bluefin tuna (*Thunnus thynnus*) has long been recognized as a key uncertainty in its management and conservation, as it directly influences stock assessments, quota allocations, and international fisheries policies. Traditionally, Atlantic bluefin tuna has been managed by ICCAT as two distinct stocks: the western stock, believed to spawn primarily in the Gulf of Mexico, and the eastern stock, spawning in the Mediterranean Sea (ICCAT, 2023). These two stocks were originally defined based on spatial and temporal differences in spawning behavior, as well as tag-recapture studies showing that individuals tended to return to their natal spawning grounds (Block et al., 2005; Rooker et al., 2007). Genetic studies have supported this separation by showing subtle but statistically significant genetic differentiation between fish sampled in the two spawning areas (Carlsson et al., 2007; Riccioni et al., 2010). However, both electronic tagging and otolith

microchemistry have revealed a more complex picture, with evidence of transatlantic migrations and mixing of individuals from both stocks in common feeding areas such as the North Atlantic and the Bay of Biscay (Block et al., 2005; Rooker et al., 2008; Fraile et al., 2014). These findings suggest that while spawning site fidelity appears strong, the two populations intermingle extensively outside the breeding season, creating management challenges in mixed-stock fisheries.

Further complicating the picture, recent research has identified additional potential spawning grounds outside the historically recognized areas. For example, observations of spawning-capable individuals and larval tuna have been reported in the Slope Sea off the northeastern United States (Richardson et al., 2016), as well as in the western Mediterranean and the Cantabrian Sea (Alemany et al., 2010; Reglero et al., 2018). However, the biological and demographic significance of these additional areas remains under investigation. ICCAT's Standing Committee on Research and Statistics (SCRS) has highlighted these uncertainties and stressed the need for further studies to clarify the extent and persistence of these newly identified spawning activities (ICCAT, 2023). The Atlantic-Wide Research Programme for Bluefin Tuna (GBYP), launched by ICCAT in 2010, has been specifically aimed at improving the understanding of stock structure, migration, and reproductive behavior through genetic analyses, electronic tagging, and larval surveys (ICCAT, 2023).

Despite progress, there is still no consensus on whether the Atlantic bluefin tuna should be considered as a two-stock system or a more complex meta-population with multiple interconnected spawning units. Some authors argue that the current two-stock management framework may oversimplify the biological realities of the species (Rooker et al., 2014; Fromentin & Lopuszanski, 2014), while others point out that, in the absence of more precise data, it remains a pragmatic approach for international management. Ongoing research efforts, particularly those coordinated by ICCAT and the GBYP, continue to refine our understanding of stock structure, which is essential to ensure effective and sustainable management of this economically and ecologically important species.

7.4.3. Data collection

All ICCAT contracting and cooperating parties (CPCs) are required to report detailed documentation for every Atlantic bluefin tuna (*Thunnus thynnus*) harvested, transported, or traded through the Bluefin Tuna Catch Documentation Scheme (eBCD). This electronic system, established under ICCAT Recommendation 11-20, requires verification by national authorities at each stage of the supply chain. Documentation includes catch details (vessel information, date, area, gear, and catch data), transfer operations, transshipment records, farm activities, harvest data, and trade movements. Each record is uniquely numbered, and all vessels, farms, traps, and exporters must be registered with ICCAT to participate in the fishery (ICCAT, 2023).

Complementing these monitoring efforts, ICCAT launched the Atlantic-Wide Research Programme for Bluefin Tuna (GBYP) in 2008 to advance scientific understanding of bluefin biology, ecology, and population dynamics. Key GBYP activities include aerial surveys targeting spawning and feeding aggregations in the Mediterranean Sea, large-scale tagging campaigns that have deployed over 32,000 tags on more than 24,000 fish (ICCAT_SCRS_DP, 2022), and extensive data mining to reconstruct historical catch records, including trap fishery data dating back to 1512 (García et al., 2017). Biological research has focused on genetic studies, otolith microchemistry, spine aging, and reproductive biology, while modeling efforts have supported the development of Management Strategy Evaluations (MSEs) to improve stock assessment and management advice (ICCAT_SCRS, 2024).

Since the 2017 assessment, ICCAT has formally included revised estimates of historical "inflated" catches during the period of widespread Illegal, Unreported, and Unregulated (IUU) fishing from 1998 to 2007. Estimated catches during that time ranged from 50,000 to 61,000 tonnes annually, significantly higher than reported landings (ICCAT_SCRS, 2024). While these adjustments improve the assessment’s accuracy, uncertainties remain, particularly regarding the reported growth of tuna in farming operations, which poses risks of misreporting and

laundering of illegal catches. ICCAT has therefore reviewed farm growth models and is considering the establishment of a Technical Sub-Group on Farm Operations to improve monitoring methodologies (ICCAT_SCRS, 2024).

For stock monitoring, ICCAT utilizes a suite of abundance indices, including trap-based indices (e.g., Morocco/Spain and Morocco/Portugal traps), longline and baitboat CPUE data, and fishery-independent surveys such as aerial and larval surveys conducted in the Mediterranean (ICCAT_SCRS, 2024). These indices have been expanded and reanalyzed to improve data reliability. Additional data on catch-at-size and catch-at-age have been refined, incorporating stereoscopic camera measurements from farms and new datasets from Portuguese, Spanish, and Gibraltarian fisheries (ICCAT_SCRS, 2024).

Ongoing efforts in age and growth studies have analyzed thousands of spines and otoliths collected since 1984. While spatial and temporal coverage is incomplete, mixed-effects and biphasic growth models have been applied to estimate age-at-size and age-at-maturity parameters (ICCAT_SCRS, 2024). A recent pilot study on epigenetic aging shows promise as a novel method to complement traditional age estimation techniques (ICCAT_SCRS, 2024).

Stock composition and mixing dynamics remain active areas of research. Genetic analysis, otolith microchemistry, and tagging studies have confirmed extensive transatlantic movements of bluefin tuna, with fish from both the Mediterranean and Gulf of Mexico mixing in feeding grounds. However, Mediterranean-origin fish appear to move westward more frequently than Gulf-origin fish move eastward (ICCAT_SCRS_DP, 2022). A Close-Kin Mark-Recapture (CKMR) program, using over 8,000 single nucleotide polymorphisms (SNPs), is being developed to provide absolute abundance estimates for both stocks (ICCAT_CKMR, 2023). This work is supported by the development of a spatially explicit CKMR model aimed at estimating the adult abundance of the eastern stock (ICCAT_SCRS, 2024).

Research on natural mortality (M) continues, with recent studies evaluating size-dependent mortality estimates derived from tagging data (Lauretta, 2017). Although variability over time is suspected, data remain insufficient to model time-varying mortality rates with confidence (ICCAT_SCRS, 2024).

Studies on distribution and environmental drivers are ongoing, with tagging data enhancing understanding of migration and habitat use. More than 24,000 individuals have been tagged with various types of tags, contributing to ICCAT's electronic tagging database (ICCAT_SCRS_DP, 2022). Stable isotope and genetic analyses confirm variable mixing patterns and support the view that migratory behaviors are highly dynamic (ICCAT_SCRS_DP, 2022). New genomic approaches, including whole-genome sequencing, are being explored to refine stock structure characterization and evolutionary divergence mechanisms (ICCAT_SCRS, 2024).

Finally, habitat modeling and studies on environmental drivers such as climate variability continue to inform understanding of larval survival, distribution, and recruitment dynamics (ICCAT_SCRS_DP, 2022; ICCAT_SCRS, 2024)

7.4.4. Status of the stock and Harvest Control Rules (HCRs)

ICCAT's 2022 full assessment of the Eastern Atlantic bluefin tuna confirmed a steady increase in stock biomass since 2007, though estimates varied depending on the assessment model used. The Virtual Population Analysis (VPA) indicated the most conservative biomass growth, while other models like Stock Synthesis and ASAP showed stronger trends (ICCAT_eBFT, 2022). Recruitment also appeared to rise in recent years, but the degree of this increase remained uncertain due to variability among models (Figure 1, ICCAT_eBFT, 2022).

Fishing mortality rates for both younger fish (ages 2–5) and older fish (age 10+) have declined markedly since 2007 (Figure 1, ICCAT_eBFT, 2022). However, models differ on whether current fishing mortality levels are sustainable. The VPA indicated potential overfishing with FCURRENT/F0.1 estimated at 1.16 (95% CI: 0.73–1.62), whereas Stock

Synthesis and ASAP results suggested fishing pressure was below reference levels, with FCURRENT/F0.1 estimates of 0.72 and 0.54, respectively (ICCAT_eBFT, 2022).

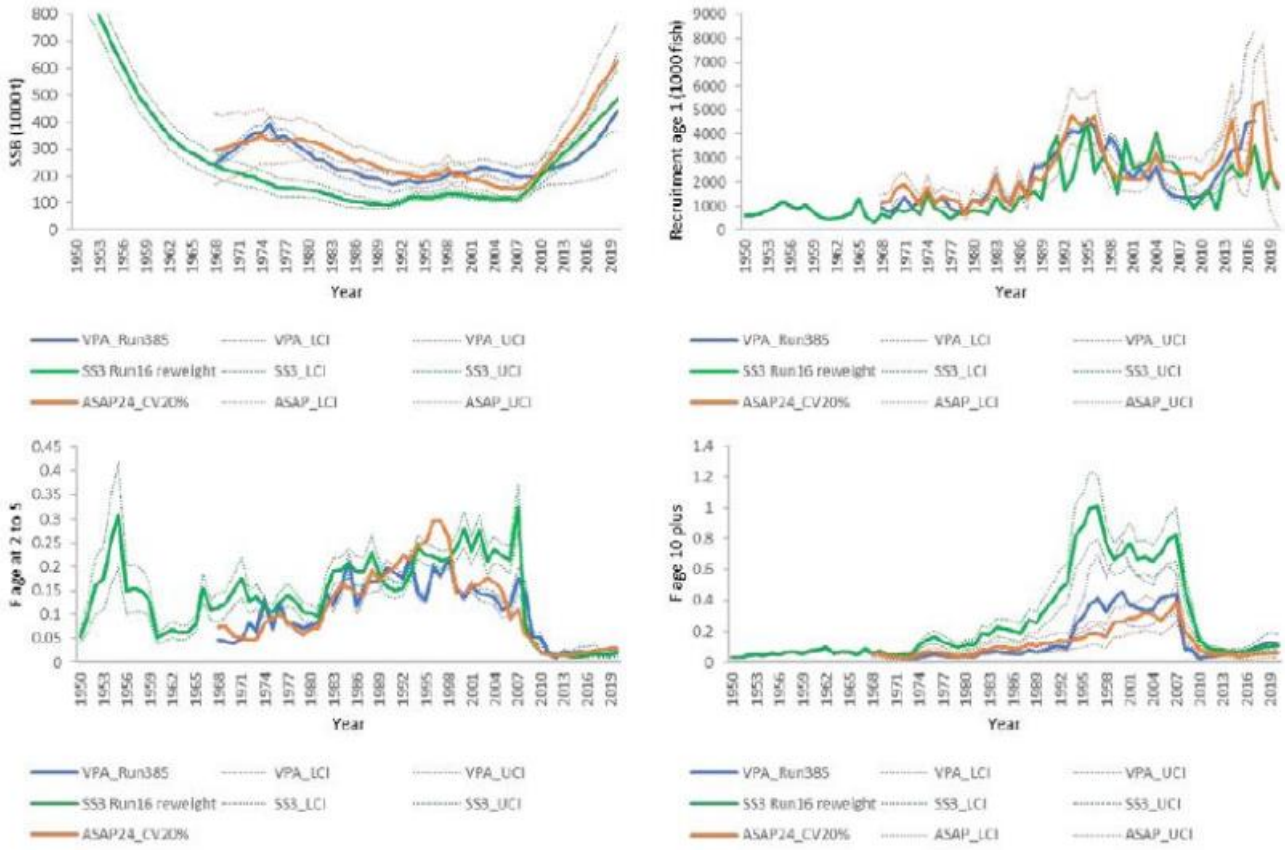

Figure 1. Comparisons of the trends in the eastern Atlantic bluefin tuna estimated spawning stock biomass (SSB), recruitment (age 1), F at age 2 to 5, and F at age 10 plus group between base cases by model platforms: VPA run 385 (blue lines), Stock Synthesis run 16 reweight (green lines), and ASAP run 24 with 20% CV (orange lines). Source: ICCAT_SCRS_DP (2022).

Management of bluefin tuna at ICCAT has evolved significantly since the introduction of the 2006 Recovery Plan (Rec. 06-05), culminating in the 2022 adoption of a Management Procedure (MP) through Recommendation 22-09 (ICCAT_SCRS, 2024a). This MP integrates both eastern and western Atlantic stocks under a unified framework, applying ecosystem-based and precautionary principles (ICCAT, 2023). The adopted MP specifies a Total Allowable Catch (TAC) of 40,570 tonnes for 2023–2025, with harvest control rules designed to maintain stock sustainability and catch stability (ICCAT_SCRS, 2024a).

In terms of minimum size regulations, the eBFT fishery requires a 30 kg or 115 cm fork length minimum, although a derogation allows retention of smaller individuals (down to 8 kg or 75 cm) under specific conditions, with a 5% bycatch limit (ICCAT_SCRS, 2024a).

The MSE process tested nine Candidate Management Procedures (CMPs) across 48 operating models and 12 robustness tests, ultimately narrowing to four key CMPs named FZ/FO, BR, LW, and TC (Peterson et al., 2022). These CMPs differ in how they calculate TACs, using various control rules based on indices or biomass estimates.

Performance analyses indicated all CMPs met the minimum management objectives, though options like BR and FZ/FO showed slightly better outcomes in balancing yield and stability (Peterson et al., 2022).

The MP uses empirical harvest control rules based on standardized and aggregated abundance indices, smoothed over time to reduce variability (Butterworth & Rademeyer, 2022). Annual reviews assess whether Exceptional Circumstances (ECs) exist that might warrant adjusting TACs or the MP itself. As of 2023, SCRS found no ECs that required changes to the TAC or management framework (ICCAT_SCRS, 2024; Table 7).

Table 7. Indicators for eBFT Exceptional Circumstances (EC) and timetable for conducting the evaluation. Source: ICCAT_SCRS_DP (2022).

Principle	*Indicator*	*Criterion*	*Frequency*
a. Stock and fishery dynamics	Indices	If either of the combined index values fall outside the 2.5% and 97.5% percentile range [4] in any year from the operating models used in the MSE when the accepted MP was tested.	Annually
	Abundance, life history and fishery dynamics	If there is evidence that the stock and/or fishery dynamics[5*] are in states not previously considered to be plausible in the context of the MSE; such evidence would need to be so consequential that it would meaningfully affect TAC advice from the MP.	After completion, presentation, and acceptance by the SCRS of a study as the new reference
b. Data availability for the MP	Indices	If three or more indices among the 10 are missing in a single year or if two or more indices are missing consecutively for two or more years.	Annually
c. Implementation of the TAC	Catch	If the total catch for either the West area or the East area is 20% or more above the TAC for the respective area set using the MP[6].	Annually

4 This range is the two-tailed 95% confidence interval, which is a standard for determining statistically significant deviations.
5 Fishery dynamics: Established spatial and temporal patterns that influence catchability, selectivity, targeting, and bycatch of Atlantic bluefin tuna.
6 This discussion focuses on excess catches which would constitute EC. Exceeding TAC set though an MP by catch levels that do not constitute EC still carries the same potential adverse consequences of exceeding TAC determined by other means. Sufficient mechanisms to prevent exceeding the TAC should be maintained.

The MP adopted by ICCAT in Recommendation 22-09 is empirical and primarily relies on abundance indices from the eastern and western Atlantic management areas (Butterworth & Rademeyer, 2022). These indices, five for each management area as detailed in Table 8, are first standardized to correct for magnitude differences, then combined using a weighted average to produce a single index for each area. To minimize the influence of year-to-year observation variability, these aggregated indices are smoothed over time (ICCAT_SCRS, 2024). Based on this smoothed trend, total allowable catches (TACs) are determined by applying a fixed exploitation rate proportional to the indicated stock abundance.

Table 8. List of the abundance indices, index periods (y^i_1 and y^i_2) and weights (w^i) used in the MP for the East and the West management areas and TAC formulations. Source: ICCAT Recommendation 22-09.

	East				West			
i	Index	y^i_1	y^i_2	w^i	Index	y^i_1	y^i_2	w^i
1	FR_AER_SUV2	2014	2017	1.33	GOM_LAR_SUV	2006	2017	1.33
2	MED_LAR_SUV	2012	2016	1.66	US_RR_66_144	2006	2018	2.55
3	GBYP_AER_SUV_BAR[3]	2015	2018	1.06	MEXUS_GOM_PLL2	2006	2018	1.39
4	MOR_POR_TRAP	2012	2018	1.43	JPN_LL_West2	2010	2019	3.96
5	JPN_LL_NEAtl2	2012	2019	1.33	CAN_SWNS	2006	2017	2.88

For the East area:

$$TAC_{E,y} = \begin{cases} \left(\frac{35032.31}{J^E_{2017}}\right) \cdot \alpha_y \cdot J^E_{av,y-2} & \text{for } J^E_{av,y-2} \geq T^E \\ \left(\frac{35032.31}{J^E_{2017}}\right) \cdot \alpha_y \cdot \frac{\left(J^E_{av,y-2}\right)^2}{T^E} & \text{for } J^E_{av,y-2} < T^E \end{cases}$$

$$\alpha_y = \begin{cases} \alpha_0 + \Delta\alpha(y - 2023) & \text{for } 2023 \leq y \leq 2027 \\ \alpha_0 + 4\Delta\alpha & \text{for } y > 2027 \end{cases}$$

For the West area:

$$TAC_{W,y} = \begin{cases} \left(\frac{2269.362}{J^W_{2017}}\right) \cdot \beta_y \cdot J^W_{av,y-2} & \text{for } J^W_{av,y-2} \geq T^W \\ \left(\frac{2269.362}{J^W_{2017}}\right) \cdot \beta_y \cdot \frac{\left(J^W_{av,y-2}\right)^2}{T^W} & \text{for } J^W_{av,y-2} < T^W \end{cases}$$

$$\beta_y = \begin{cases} \beta_0 + \Delta\beta(y - 2023) & \text{for } 2023 \leq y \leq 2030 \\ \beta_0 + 7\Delta\beta & \text{for } y > 2030 \end{cases}$$

Under this MP, the current TAC has been set at 40,570 tonnes per year for 2023–2025 (ICCAT_SCRS, 2024). The SCRS is tasked with providing management advice, drawing from the 2022 stock assessment and any additional relevant data, as no new stock assessment has been completed since.

In 2024, SCRS evaluated whether "exceptional circumstances" (EC) existed that might justify deviating from the MP, as outlined in Recommendation 23-07. Based on a structured review of key criteria, SCRS concluded that no such circumstances were present for the 2025 TAC (ICCAT_SCRS, 2024). This decision was based on the following findings:

Data Availability: For the 2023 evaluation, 8 out of 10 abundance indices were successfully updated and deemed acceptable (see Figure 2). The West Mediterranean larval survey was not updated with 2023 data, and the Moroccan-Portugal trap index could not be estimated using the current standardization method. Importantly, no index has been absent for two or more consecutive years.

Stock Dynamics: All combined abundance indices for 2023 remained within the 95% prediction intervals (see Figure 3), and no significant deviations in stock productivity, fishery behavior, or life-history parameters outside those considered in the operating models were identified. Preliminary results from Close-Kin Mark-Recapture (CKMR) analyses for the western stock were presented, highlighting stock mixing and spawner abundance patterns that merit further investigation in 2025 when finalized results become available.

Reported Catches: Catch reports from CPCs for 2023 align with the established TACs for both the eastern and western stocks. However, concerns remain regarding the existence of unreported or illegal catches, though their magnitude is not currently quantified.

Looking forward, ICCAT has outlined Terms of Reference to assess the effectiveness of the catch monitoring, control, and surveillance systems implemented by CPCs. This evaluation, scheduled for 2024, aims to determine whether these mechanisms provide reliable and accurate catch estimates, particularly for stocks regulated by TACs (ICCAT_SCRS, 2024).

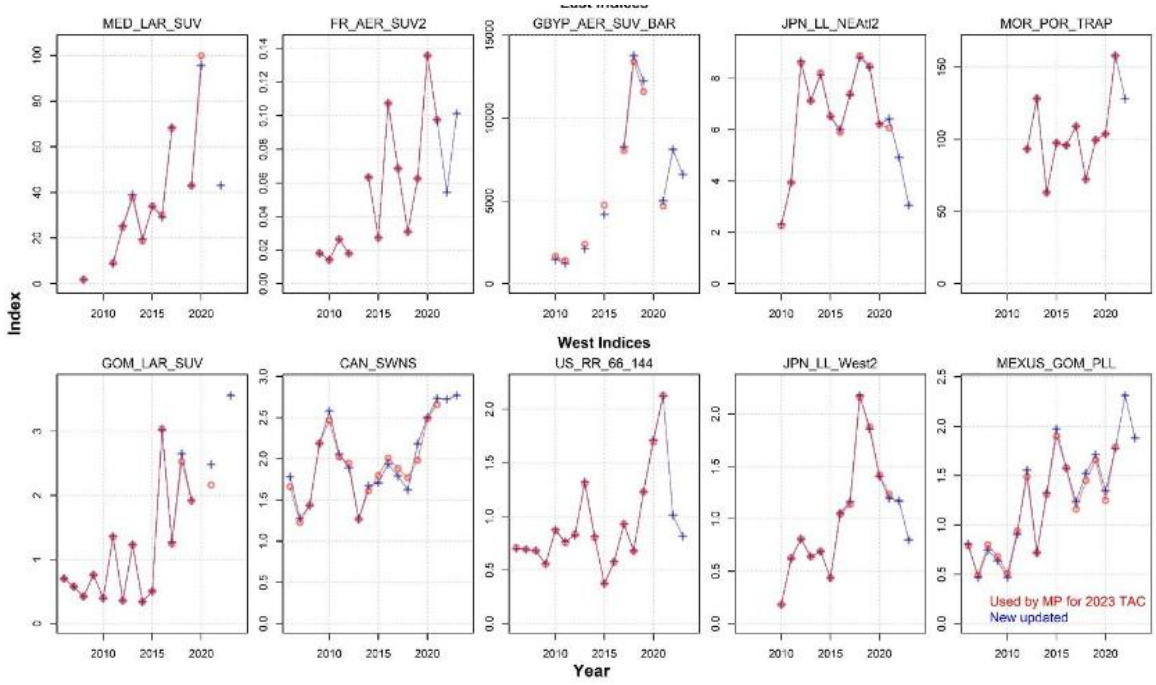

Figure 2. Plot of indices used in MP calculations (red) and the new updated indices (blue) that were rescaled by the factor k. Red values are original indices used to determine the 2023 TAC and in MSE conditioning; the blue values are strict updates of the indices through 2023. The West Mediterranean Larval survey was not available and the Moroccan-Portugal trap index data point for 2023 could not be effectively estimated. Source: ICCAT_SCRS (2024).

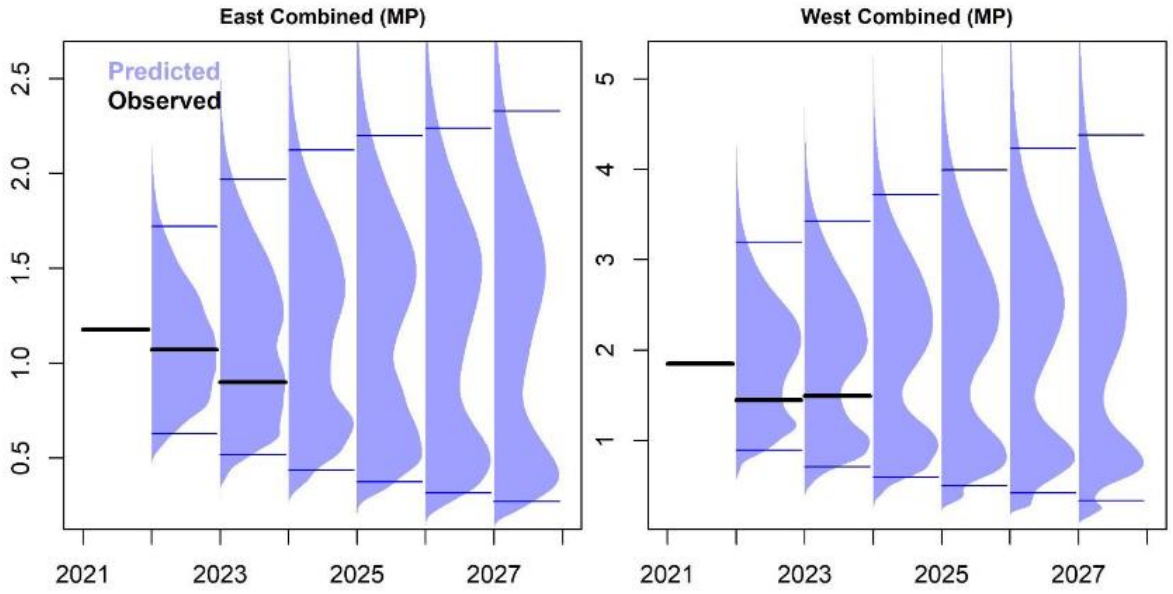

Figure 3. Standard marginal plots of observed composite indices (black bars) and distribution of predicted data (blue density distribution) for the reference grid of operating models (n =2304, 48 operating models, 48 simulations each). Blue bars represent the 95% prediction intervals. The West Mediterranean Larval survey was not available and the Moroccan-Portugal trap data point for 2023 could not be effectively estimated. Source: ICCAT_SCRS (2024).

7.4.5. Catch profiles

Eastern Atlantic bluefin catches have been subject to a high degree of misreporting between the mid-1990s and the recent past, although for the most recent few years, such misreported catch levels are thought to have diminished considerably. In 2023, reported catches were about 39,200 tonnes (Figure 4), a 12% increase from 2022 reported catches. Purse seiners take 62% of the catch, followed by traps (16%), longline (15%), and a variety of surface gears, including pole-and- line, handline and trolling. There is considerable uncertainty about its level of abundance. The TAC in place and strict controls have ended overfishing.

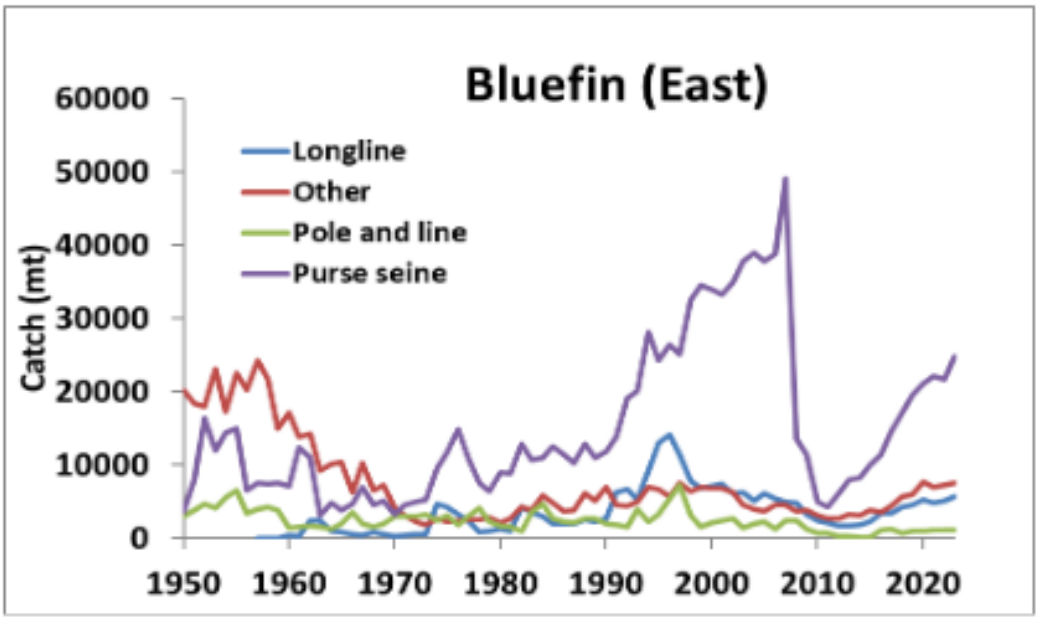

Figure 4. Catches of Eastern Atlantic and Mediterranean bluefin from 1950 to 2023, by gear type. Source: ICCAT_SCRS (2024).

7.4.6. Total Allowable Catch (TAC) and catch data

The overall TAC was increased from 36,000 t in 2021 and 2022 to 40,570 t annually for the 2023 – 2025 period (Table 9). As a result, the EU TAC share was increased to 21,503 t, and the Italian TAC was increased to 5,283 t. Within the established TAC, the European Union has specified special catch limits for juvenile Atlantic bluefin tuna (weighing 8–30 kg or measuring 75–115 cm).

Table 9. Total Allowable Catch (TAC) and catch data.

TAC	Year	2024	Amount	40,570 t
UoA share of TAC	Year	2024	Amount	1,031 t[3]
UoA share of total TAC	Year	2024	Amount	2.5%
Total green weight catch by UoC	Year (most recent)	2024	Amount	144.417 t
Total green weight catch by UoC	Year (second most recent)	2023	Amount	143.252 t

[3] Source: https://www.gazzettaufficiale.it/atto/serie_generale/caricaDettaglioAtto/originario?atto.dataPubblicazioneGazzetta=2024-05-21&atto.codiceRedazionale=24A02500&elenco30giorni=false; (LL + SSCF)

7.4.7. Principle 1 Performance Indicator scores and rationales – delete if not applicable

PI 1.1.1 – Stock status

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	**Stock status relative to recruitment impairment**			
	Guide post	It is **likely** that the stock is above the point where recruitment would be impaired (PRI).	It is **highly likely** that the stock is above the PRI.	There is a **high degree of certainty** that the stock is above the PRI.
	Met?	**Yes**	**Yes**	**No**

Rationale

The 2022 stock assessment of Eastern Atlantic bluefin tuna used three different modeling approaches to evaluate stock status: Virtual Population Analysis (VPA), Stock Synthesis (SS3), and the Age-Structured Assessment Program (ASAP) (ICCAT_SCRS, 2022). All three models provided consistent trends, showing a decline in spawning stock biomass (SSB) from the 1970s until the adoption of ICCAT's Recovery Plan in 2006 (ICCAT, 2006; Butterworth & Rademeyer, 2022). Since the late 2000s, all models indicated a significant increase in SSB, although the estimated magnitude of the recovery varied—VPA showing the most conservative estimates and ASAP suggesting the most optimistic rebound.

Despite this general agreement on trends, all models left key uncertainties unresolved, particularly regarding recruitment patterns and the stock-recruitment relationship (ICCAT_SCRS, 2022). Nevertheless, management has continued to rely on the fishing mortality reference point $F_{0.1}$ as a proxy for FMSY, a method validated as appropriate for Eastern Atlantic bluefin tuna management (Rademeyer & Butterworth, 2018).

The stock was estimated to be not currently overfished, with the ratio of recent fishing mortality to $F_{0.1}$ calculated at 0.81 (95% CI: 0.48–1.62). This estimate is based on data from 2017–2020 for the VPA and 2018–2020 for both the ASAP and SS3 models. These results, combined with short-term VPA projections, suggest that current fishing levels under the TAC of 36,000 tonnes are sustainable and unlikely to lead to overfishing (ICCAT_SCRS, 2022).

While all models indicate a positive trend in stock status, uncertainties remain concerning the rate and magnitude of the SSB increase, particularly in recent years. Historical fishing mortality rates for juveniles (age 2–5) and larger adults (age 10+) showed an increasing trend from the 1970s until the implementation of the 2006 Recovery Plan, after which fishing pressure declined markedly. Although recent fishing mortality shows a slight increase, it remains below the target reference point across all models.

The use of $B_{0.1}$ as a proxy for BMSY remains theoretical, as reliable estimation would require fishing at $F_{0.1}$ over an extended period while tracking relative biomass—conditions not yet achieved. One of the primary challenges in determining absolute biomass reference points is the legacy of historical underreporting and IUU fishing, which introduces considerable uncertainty (ICCAT_SCRS, 2022).

The base-case VPA and ASAP models indicate a recruitment peak between 1990 and 2000, coinciding with historically low SSB. Recruitment has generally increased since 2010 alongside the recovery in SSB. This pattern suggests the stock may be near $B_{0.1}$ levels, although a precise biomass limit reference point remains undefined.

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing

There is no evidence of recruitment impairment associated with low SSB levels, meaning that the lowest recorded SSB could be used as a proxy limit reference point ("Bloss"), indicating the stock is currently above the point of recruitment impairment (PRI) (ICCAT_SCRS, 2022).

In earlier analyses, SS3 projections for 2018 estimated SSB at 85% of BMSY, and ASAP assessments reported biomass above the SSB $F_{0.1}$ proxy, both exceeding MSC default PRI benchmarks of 50% or 75% of BMSY, although these estimates lacked formal probability quantification.

Despite these positive indications, the high uncertainty in biomass estimates, largely due to historical IUU fishing, limits confidence in more precise status evaluations. As a result, while the stock is assessed as "highly likely" to be above the PRI, meeting SG60 and SG80, the evidence does not support scoring at the highest certainty level (SG100), making a precautionary approach appropriate at this stage.

	Stock status in relation to achievement of Maximum Sustainable Yield (MSY)			
b	Guide post		The stock is at or fluctuating around a level consistent with MSY.	There is **a high degree of certainty** that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		**No**	**No**

Rationale

The ICCAT SCRS has recognized $F_{0.1}$—the fishing mortality rate at which the increase in yield per recruit begins to level off—as a practical proxy for FMSY, the fishing mortality that produces maximum sustainable yield (Butterworth & Rademeyer, 2022; ICCAT_SCRS, 2024). However, this approximation carries uncertainty because the stock-recruitment relationship remains poorly understood. Due to this, the SCRS does not consider biomass-based reference points to be reliable indicators of stock health, largely because future recruitment levels are unpredictable (ICCAT_SCRS, 2024a).

The 2022 stock assessment reported a ratio of $F_{current}/F_{0.1}$ = 0.81 (95% Confidence Interval: 0.48–1.62), suggesting that fishing mortality may be below the target level, but considerable uncertainty remains. The three stock assessment models used—Virtual Population Analysis (VPA), Statistical Catch-at-Age (SS), and Age-Structured Assessment Program (ASAP)—produced a wide range of estimates:

- VPA suggested slight overfishing ($F/F_{0.1}$ = 1.16),
- SS indicated fishing below the target ($F/F_{0.1}$ = 0.72), and
- ASAP showed even lower fishing pressure ($F/F_{0.1}$ = 0.54) (ICCAT_SCRS, 2024a).

Despite these variations, all models agree that fishing pressure is substantially lower than during the overfished period of 1998–2007, and stock biomass appears to be stabilizing. Under MSC Fisheries Certification Requirements v2.0 (FCR2.0), a score of SG80 can be awarded if fishing mortality has stayed at or below FMSY for at least two generation times, or at least four years if this period is longer. For Eastern Atlantic bluefin tuna, generation time has been estimated at 16.7 years based on the methodology of Goodyear (1995), which considers growth in weight as used in spawning stock biomass (SSB) estimates (ICCAT_SCRS, 2024).

Therefore, achieving SG80 requires fishing mortality to be controlled at or below FMSY for about 34 years (until approximately 2040). However, the MSC framework allows for halving the recovery period if fishing is reduced to 60% of FMSY, which would require maintaining fishing below 60% of $F_{0.1}$ (ICCAT_SCRS, 2024).

PI 1.1.1	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing

Although available data suggest that fishing pressure may have remained below $F_{0.1}$ since the 2006 recovery plan, uncertainties related to recruitment and other stock dynamics make this difficult to confirm with confidence. Present estimates indicate that fishing mortality is just over 80% of the target, with a notable risk that actual mortality could be higher. This casts doubt on whether MSC's SG80 criteria have been met. Projections indicate that, if fishing mortality remains below 60% of $F_{0.1}$, the fishery could meet SG80 for younger fish (F2-5) by 2025, and for older fish (F10+) by 2027. However, given the uncertainties and risks, current conditions do not fully justify awarding SG80 based on fishing mortality alone (ICCAT_SCRS, 2024).

References

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Stock status relative to reference points

	Type of reference point	Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to PRI (SIa)	$B_{LOSS.}$	*SS3: 88,160 t* *ASAP: 157,23 t* *VPA: 171,050 t*	*SS3: 5.7* *ASAP: 4.1* *VPA: 2.5*
Reference point used in scoring stock relative to MSY (SIb)	$F_{0.1}$		*F recent /FMSY (using the F 0.1 proxy) was estimated at 0.81 (95% CI:0.48-1.62)*

Overall Performance Indicator (PI) Rationale

Draft scoring range	60-79
Information gap indicator	Information sufficient to score PI
Data-deficient? (Risk-Based Framework needed)	No

PI 1.1.2 – Stock rebuilding

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue		SG 60	SG 80	SG 100
	Rebuilding timeframes			
a	Guide post	A rebuilding timeframe is specified for the stock that is the **shorter of 20 years or 2 times its generation time**. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed **one generation time** for the stock.
	Met?	Yes		Yes

Rationale

ICCAT implemented a rebuilding plan for the Eastern Atlantic and Mediterranean bluefin tuna stock in 2007 through Recommendation 06-05 (ICCAT, 2006). This plan aimed to rebuild the stock to BMSY with a 60% probability within 15 years, setting a target year of 2022.

The main control on exploitation has been the Total Allowable Catch (TAC), which increased stepwise to 36,000 tonnes by 2020 and was maintained through 2022. With the adoption of Recommendation 22-08 in 2022, ICCAT implemented a new management procedure based MSE, setting the TAC for 2023–2025 at 40,570 tonnes (ICCAT, 2022a). This management procedure includes technical measures such as minimum size limits, gear-specific fishing seasons, and rigorous monitoring, reporting, and inspection protocols to ensure compliance with the TAC and associated rules.

Despite uncertainties in stock assessments, SCRS concluded in 2017 that the stock had likely been rebuilt (ICCAT, 2023). Consequently, ICCAT transitioned from a rebuilding to a multi-annual management plan, which is now in effect. The 2022 stock assessment suggested that biomass is stabilizing, though with persistent uncertainties (ICCAT, 2024). The fishery has adopted an empirical harvest control rule based on average abundance indices—a proxy for biomass. This rule, tested through simulations (ICCAT PA2_609/2024), links target fishing mortality to biomass indices. If applied consistently through 2025, and with stable relative biomass and fishing mortality maintained below target levels, this could support the conclusion that rebuilding is complete.

The 15-year rebuilding timeframe was shorter than the generation time. Fishing mortality has been estimated to remain below F0.1 through 2022 under existing TACs. The implementation of the rebuilding plan and subsequent multi-annual management plan reduced fishing mortality to levels consistent with rebuilding targets. Since the plan was designed to achieve rebuilding within 20 years, SG60 is met. Because the plan aimed to rebuild within one generation (estimated at about 16.7 years, Goodyear, 1995) and minimized fishing mortality where practicable, SG100 is also met.

b	**Rebuilding evaluation**

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is **evidence** that the rebuilding strategies are rebuilding stocks, **or it is likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**.	There is **strong evidence** that the rebuilding strategies are rebuilding stocks, **or it is highly likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**.
	Met?	Yes	Yes	Yes

Rationale

ICCAT has implemented a comprehensive monitoring and management strategy to assess and support the rebuilding of the Atlantic bluefin tuna stock. Monitoring is in place to determine whether the rebuilding strategy has been effective. Stock assessments are conducted every three years, and annual indicators are compiled to detect significant changes in the fishery (ICCAT, 2023). Monitoring includes the Bluefin Tuna Catch Documentation Scheme (BCD), which ensures traceability and regulatory compliance across fleets.

Additional sources of monitoring data include the Atlantic-Wide Research Programme for Bluefin Tuna (GBYP), which supports tagging programs, abundance indices, and biological studies on age and growth. As of 2024, GBYP is in Phase 14, continuing efforts in aerial surveys, electronic tagging, and biological sampling (ICCAT, 2024). This robust monitoring meets the SG60.

Evidence from multiple stock assessment models indicates a reduction in exploitation rates consistent with rebuilding goals. Biomass estimates and abundance indices suggest the stock has increased in size in recent years. Simulation modelling using ASAP, SS3, and VPA frameworks supports projections that the stock either has rebuilt or is on track to rebuild within the specified 15-year timeframe ending in 2022 (ICCAT, 2023), meeting SG80.

A new Management Procedure (MP) was adopted in 2022 and implemented in 2023 for both western and eastern stocks, including those in the Mediterranean. This MP sets TACs and includes an Exceptional Circumstances protocol for flexibility under uncertainty (European Commission, 2022). The 2022 assessments show that fishing mortality (F) has likely remained below $F_{0.1}$ since 2007. While the VPA model provides a more conservative estimate (suggesting F may slightly exceed $F_{0.1}$), other models indicate it remains below that threshold. All assessment models show an increase in spawning stock biomass (SSB), although the rate of increase has slowed. SCRS interprets this as the stock being rebuilt (ICCAT, 2023), meeting SG100.

References

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PI 1.1.2	Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe

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Overall Performance Indicator (PI) Rationale	
Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI

PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	**Harvest strategy design**			
	Guide post	The harvest strategy is **expected** to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy **work together** towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is **designed** to achieve stock management objectives reflected in PI 1.1.1 SG80.
	Met?	Yes	Yes	Yes

Rationale

ICCAT was established in 1966 with the primary objective of maintaining tuna and tuna-like fish populations in the Atlantic Ocean at levels that permit the maximum sustainable yield (MSY), as stated in the preamble of its Convention (ICCAT, 1966). In 2022, ICCAT adopted its first Management Procedure (MP) for Atlantic bluefin tuna, marking a significant shift toward science-based, pre-agreed frameworks for setting TACs (ICCAT Rec. 22-09). This approach aims to reduce the influence of annual political negotiations on quota settings. The MP, amended by ICCAT Rec. 23-07, establishes TACs for 2023–2025 at 2,726 metric tons for the western Atlantic stock and 40,570 metric tons for the eastern Atlantic and Mediterranean stock (ICCAT Rec. 23-07).

The MP was developed through extensive MSE approach, which addressed key uncertainties such as unreported catches and stock mixing. The procedure is subject to performance reviews every six years (ICCAT MSE, 2022).

ICCAT's conservation measures are further specified in Recommendations 22-08 (eastern stock) and 22-10 (western stock), detailing TACs, reporting requirements, and technical measures like minimum size limits and gear-specific rules. Notably, Rec. 23-06 updated farming capacity controls for the eastern stock, reflecting the complex nature of these fisheries, including the role of tuna farms (ICCAT Rec. 22-08; ICCAT Rec. 22-10; ICCAT Rec. 23-06; ICCAT, 2024).

To combat illegal, unreported, and unregulated (IUU) fishing and improve traceability, ICCAT mandates implementation of a Bluefin Tuna Catch Documentation Scheme (BCD) under Rec. 18-13. This scheme enables traceability throughout the supply chain and aims to ensure all bluefin mortality is recorded (ICCAT Rec. 18-13).

Overall, the Atlantic bluefin harvest strategy reflects an integrated approach involving data collection, stock assessments, and coordinated management efforts. The adoption of the MP and supporting measures signify a robust, evolving system designed to align with best practices in international fisheries management and ensure long-term sustainability of Atlantic bluefin tuna stocks (ICCAT Rec. 23-07; ICCAT MSE, 2022).

Therefore, the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together to achieve stock management objectives and thus both SG60 and SG80 are reached. Furthermore, since the MSE work was finalised and the several options agreed, the harvest strategy is designed to achieve stock management objectives and SG100 is also met

b	**Harvest strategy evaluation**

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
	Guide post	The harvest strategy is **likely** to work based on prior experience or plausible argument.	The harvest strategy may not have been fully **tested** but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been **fully evaluated** and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	Ye	Yes	No

Rationale

The target stock has experienced a significant recovery over the past decade, attributed to stringent management measures implemented by ICCAT. These measures include the establishment of minimum catch sizes and the enforcement of TACs. Notably, the TAC for the eastern stock was increased to 40,570 metric tons for the years 2023–2025, reflecting the stock's improved status (ICCAT, 2023).

In 2022, ICCAT adopted a comprehensive Management Procedure (MP) for Atlantic bluefin tuna, marking a pivotal shift from annual quota negotiations to a pre-agreed, science-based framework for setting catch limits. This MP, developed through rigorous MSE, aims to ensure the long-term sustainability of the stock by accounting for various uncertainties in stock assessments and management.

The implementation of the MP has led to a stabilization of fishing mortality rates across different age classes of bluefin tuna, contributing to the stock's rebuilding. Current assessments indicate that the biomass of the Eastern Atlantic bluefin tuna has increased since the late 2000s and remains high, with no immediate concerns of overfishing under the current management regime (ICCAT, 2022).

The adoption of the MP and the observed stock recovery suggest that the exploitation objectives of the harvest strategy are being met, aligning with sustainability benchmarks. The MP's successful implementation, underpinned by MSE, reflects a significant advancement in fisheries management, meeting SG60 and SG80.

Although the new joint management procedure for Eastern Atlantic bluefin tuna stocks is designed to maintain or rebuild stocks and has been tested through MSE, it was only implemented in 2023 and has not yet been fully evaluated in practice. As a result, it cannot yet be confirmed that the plan will reliably maintain the stock at target levels, and SG100 is not met.

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

Rationale

Monitoring systems are in place to effectively evaluate the harvest strategy for Eastern Atlantic bluefin tuna. These systems encompass comprehensive data collection and assessment programs, ensuring that the harvest strategy's performance is closely tracked and managed.

PI 1.2.1	There is a robust and precautionary harvest strategy in place

The Electronic Bluefin Tuna Catch Document (eBCD) System is a mandatory, electronic platform that records every stage of bluefin tuna handling—from capture to trade. Implemented under ICCAT Recommendation 22-16, it ensures traceability and compliance by documenting landings, transfers, and trade activities. In exceptional cases, such as technical difficulties, paper-based BCDs are permitted temporarily.
Moreover, the Atlantic-Wide Research Programme for Bluefin Tuna (GBYP) aims to enhance the scientific understanding of bluefin tuna through data collection, tagging, aerial surveys, and genetic studies. As of Phase 14 (initiated in February 2024), the program focuses on developing databases for electronic tags and biological data, conducting aerial surveys in the Mediterranean, and implementing electronic tagging campaigns.
ICCAT SCRS utilizes data from the eBCD system and GBYP to perform regular stock assessments. These assessments analyze size composition, abundance, and other critical metrics to evaluate the effectiveness of the harvest strategy. The integration of these data sources ensures that management decisions are informed by the most current and comprehensive information available.
Given the robust monitoring framework—including the mandatory eBCD system, the extensive research conducted by the GBYP, and the rigorous stock assessments by the SCRS, SG60 is met.

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

Rationale

The harvest strategy employed by ICCAT undergoes regular review and refinement to ensure sustainable management of tuna stocks. Notably, the recovery management plan for Northern albacore was reviewed, leading to the adoption of a harvest control rule (HCR) in 2017. This HCR has been successfully applied, demonstrating ICCAT's commitment to adaptive management. The MSE plays a crucial role in assessing and improving harvest strategies. ICCAT have developed and implemented state-of-the-art harvest strategies, including conducting MSEs through collaborative efforts and continuous evaluations, with the aim to enhance its harvest strategies, meeting SG100.

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

Rationale

Not applicable to this assessment as the P1 species is not a shark.

f	**Review of alternative measures**

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	NA	NA	NA

Rationale

Unwanted catch of the target stokc is minimal due to the high commercial value of the species, which incentivizes fishers to retain all individuals caught. Moreover, ICCAT explicitly prohibits the discarding of dead bluefin tuna under its regulatory framework, thereby reinforcing full utilization of the catch (ICCAT, 2023). This regulatory measure helps ensure that all mortality is accounted for and reduces waste within the fishery. For the Unit of Assessment (UoA), there is currently no evidence of unwanted catch of bluefin tuna. This is supported by the selective nature of the fishing gear used and strict monitoring and reporting requirements in place, which further minimize the potential for discards. As such, the Scoring Indicator (SI) concerning unwanted catch does not apply in this case.

During the site visit has been evidenced that the UoA targeting Atlantic Bluefin Tuna employs highly selective longline gear that captures predominantly large individuals over 50 kg. As confirmed also by the coast guard and fishermen, discards of undersized or unwanted Bluefin Tuna are extremely rare due to the gear's selectivity and the individual quotas assigned to each vessel. In the exceptional case of discard due to quota unavailability, fish are legally required to be landed and are not used for human consumption. These procedures, coupled with strict monitoring via electronic logbooks and coast guard-supervised landings, support the conclusion that UoA-related mortality of unwanted catch of the target stock is negligible.

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PI 1.2.1	There is a robust and precautionary harvest strategy in place

iccat.int

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Overall Performance Indicator (PI) Rationale	
Insert sufficient rationale to support the conclusion for the Performance Indicator, making direct reference to each scoring issue (delete if not appropriate – e.g. rationale is provided for each Scoring Issue).	
Draft scoring range	≥80
Information gap indicator	More information sought about UoA unwanted catches.

PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
a	**HCRs design and application**			
	Guide post	**Generally understood** HCRs are in place **or available** that are **expected** to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	**Well defined** HCRs are **in place** that **ensure** that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock **fluctuating around** a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock **fluctuating at or above** a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, **most** of the time.
	Met?	Yes	Yes	No

Rationale

ICCAT has implemented a comprehensive management procedure (MP) for Atlantic bluefin tuna, encompassing both the eastern and western stocks. This MP, established under Recommendation 22-09 and subsequently refined by Recommendation 23-07, introduces a harvest control rule (HCR) designed to maintain sustainable fishing practices from 2023 onwards.

The HCR outlines explicit management objectives, detailing the methodology for evaluating its performance and the formulas for calculating Total Allowable Catches (TACs). TACs are determined using five aggregated abundance indices for each stock, averaged over the three most recent years with available data. These indices are weighted based on estimated observation errors and autocorrelation, ensuring a robust assessment of stock abundance. Adjustments to TACs are made relative to the fixed observed catch in 2020, employing a parabolic adjustment shape that decreases TACs more rapidly if abundance indices fall below reference levels. To prevent overreactions to anomalous index values, year-to-year changes in TACs are capped.

The implementation of the HCR is supported by separate recommendations addressing TAC implementation and other controls. For the eastern stock, Recommendation 22-08, updated by Recommendation 23-06, provides detailed management measures. For the western stock, Recommendation 22-10 outlines specific conservation and management plans.

The HCR is designed to reduce exploitation rates as stock levels decline, aiming to maintain stocks at levels consistent with the F0.1 target, a proxy for Maximum Sustainable Yield (MSY). This approach aligns with the MSC criteria, satisfying both SG60 and SG80 performance indicators also considering that F0.1 is usually more precautionary than FMSY (FAO, 1996).

However, since the HCR's implementation is recent, its practical effectiveness, particularly in rebuilding the western stock, has yet to be fully evaluated. Challenges in stock assessment may complicate this evaluation, and additional management procedures are needed to address exceptional circumstances. Consequently, while the HCR is expected to maintain stocks around target fishing mortality levels, uncertainties in recruitment and other variables mean that the highest MSC performance level, SG100, has not yet been met.

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
b	**HCRs robustness to uncertainty**			
	Guide post		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a **wide** range of uncertainties including the ecological role of the stock, and there is **evidence** that the HCRs are robust to the main uncertainties.
	Met?		Yes	No

Rationale

The Harvest Control Rule (HCR) for the target stock has undergone extensive evaluation through Management Strategy Evaluation (MSE) across a wide range of scenarios, including varying degrees of stock mixing, uncertainties in catch data, and recruitment variability. These assessments have incorporated additional factors such as uncertainties in biological parameters, migration patterns, and model structure uncertainties to ensure a comprehensive robustness check (ICCAT, 2023a; Butterworth & Rademeyer, 2022).

The provisional Total Allowable Catches (TACs) established up to 2020 were also retrospectively tested within these MSE frameworks. Results demonstrated that the TACs, despite inherent data and biological uncertainties, were effective in promoting stock recovery, with the eastern Bluefin Tuna stock showing measurable improvements in biomass indicators (ICCAT, 2023b; Duprey & Hanke, 2022).

The agreed HCR has been rigorously tested under challenging conditions including scenarios of low recruitment, varying migration hypotheses, and data-model uncertainties. It has consistently shown robustness within the established operational parameters—specifically, the biomass reference point (BR) set at a Management Procedure (MP) tuned to 60% Probability of going below Limit Reference Point (PGK 60%), a limit depletion level (LD*) at 15%, and TAC adjustments allowed within a 20–35% range over a 3-year management cycle (Butterworth & Rademeyer, 2022; Peterson et al., 2022; ICCAT, 2023a). Consequently, this robust performance shows that the HRCs are likely to be robust to the main uncertainties, meeting SG80.

Despite these strengths, the MSE scenarios have predominantly focused on uncertainties related to population dynamics and fisheries data. They do not explicitly incorporate ecological considerations, such as the role of target stock within the marine ecosystem or its interactions with other species and habitats. This ecological dimension remains insufficiently addressed, and SG100 is not met.

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

PI 1.2.2	There are well defined and effective harvest control rules (HCRs) in place

Rationale

The primary instrument for implementing HCR within ICCAT's management framework is the establishment of Total Allowable Catches (TACs). The stock assessments underpinning these TACs generally assume full reporting of catches; however, this assumption does not hold entirely true in practice. Although monitoring, reporting, and enforcement mechanisms are relatively stringent compared to many other fisheries, there remains a substantial incentive for unreported catches. Indeed, evidence suggests that some portion of the catch continues to be unreported, contributing to discrepancies in stock status evaluations (ICCAT, 2024a).

The TAC initially set at 36,000 tonnes for the period 2020–2022 (ICCAT Rec. 19-04, 2019; Rec. 21-08, 2021) has been revised upwards to 40,570 tonnes for 2023–2025 following the adoption of a new management procedure (ICCAT Rec. 22-08, 2022). While reported catches align closely with these TAC levels, unquantified illegal, unreported, and unregulated (IUU) fishing persists, complicating the accurate assessment of stock exploitation rates (ICCAT, 2024b).

The SCRS has acknowledged that regulations such as minimum size limits and overall catch reductions have positively influenced stock abundance, contributing to a notable recovery in biomass (ICCAT SCRS Report, 2023). Additionally, the presence of IUU catch has been explicitly integrated into the current management procedure, improving the robustness of the harvest strategy against illegal activities (ICCAT Rec. 22-08, 2022).

The stock assessment confirms that fishing mortality has been maintained below the target levels stipulated in the rebuilding plan, reflecting effective control over exploitation rates (ICCAT SCRS Report, 2023). Beyond TACs, a suite of complementary management measures supports the harvest strategy, including minimum landing sizes (MLS), seasonal closures, and requirements imposed on Contracting Parties (CPCs) to manage fishing capacity. These measures collectively enhance the effectiveness of the HCR by reducing fishing pressure and protecting spawning biomass (ICCAT, 2024a).

All stock assessment models consistently indicate biomass recovery, supporting the conclusion that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs, meeting SG60 and SG80.

However, the stock assessment retains considerable uncertainty, and the ongoing presence of unquantified illegal catches hinders definitive conclusions (ICCAT, 2024b). Moreover, an underlying increase in fishing capacity presents a risk of exerting additional pressure on TACs, potentially pushing exploitation beyond precautionary limits. This capacity growth challenges the effectiveness of existing controls and raises concerns about the long-term sustainability of the stock if not properly managed (ICCAT, 2024a). Consequently, SG100 is not met.

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Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI

PI 1.2.3 – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
a	Range of information			
	Guide post	**Some** relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	**Sufficient** relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy.	A **comprehensive range** of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Yes	Yes	Yes

Rationale

A comprehensive suite of information relevant to the management of the Eastern Bluefin tuna stock is currently available, reflecting extensive research and monitoring efforts coordinated by ICCAT. This information spans multiple domains critical to understanding the stock's status and guiding management decisions, including stock structure, productivity, fleet composition, stock abundance, fishery removals, and environmental factors.

Firstly, detailed knowledge on stock structure has been developed through genetic studies and tagging programs, confirming the distinctiveness of the Eastern stock and supporting the design of spatially explicit management measures (ICCAT SCRS Report, 2023). This foundational understanding enables tailored assessments that account for stock mixing and migratory behaviors.

Secondly, the stock's productivity parameters, such as growth rates, natural mortality, and recruitment variability, are continuously updated through biological sampling and modeling efforts (ICCAT SCRS Report, 2023). These inputs are essential for reliable stock assessments and the calibration of harvest control rules.

Thirdly, data on fleet composition — including the diversity of fishing gears, fishing capacity, and the geographical distribution of fleets — are systematically collected from Contracting Parties (CPCs). This information allows for assessments of fishing pressure and capacity trends, which are crucial for evaluating compliance and potential impacts on stock dynamics (ICCAT Compliance Report, 2024).

Moreover, stock abundance indices are derived from a variety of sources, including fishery-dependent data (catch per unit effort, CPUE) and fishery-independent surveys, providing multiple lines of evidence for stock status evaluation (ICCAT SCRS Report, 2023). These indices underpin the scientific advice for TAC setting and other conservation measures.

Fishery removals data, comprising reported catches by CPCs, discards, and estimates of illegal, unreported, and unregulated (IUU) fishing, are integrated into stock assessments. Although unreported catches remain a challenge, ICCAT continues to improve catch verification and enforcement mechanisms to enhance data accuracy (ICCAT Technical Document, 2024).

PI 1.2.3	Relevant information is collected to support the harvest strategy

Finally, ICCAT incorporates environmental information — such as oceanographic conditions and climate variability — recognizing their influence on recruitment success and stock productivity. While not always directly linked to harvest control strategies, this environmental context enriches understanding of stock fluctuations and supports adaptive management approaches (ICCAT SCRS Report, 2023).

Taken together, these diverse data streams create a comprehensive knowledge base that informs the ongoing management and conservation of the Eastern Bluefin tuna stock. The integration of biological, fishery, and environmental data exemplifies ICCAT's commitment to an ecosystem-based approach and continuous improvement of the harvest strategy (ICCAT Rec. 22-08, 2022), meeting SG60, SG80 and SG100.

b	Monitoring			
	Guide post	Stock abundance and UoA removals are monitored and **at least one indicator** is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest control rule**, and **one or more indicators** are available and monitored with sufficient frequency to support the harvest control rule.	**All information** required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent **uncertainties** in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Yes	Yes	No

Rationale

Stock abundance and removals, including total removals and those broken down by gear type and country, are systematically monitored in accordance with the provisions outlined in ICCAT Recommendation 22-08, as subsequently updated by Recommendation 23-06 (ICCAT, 2023a; ICCAT, 2024a). The implementation of the electronic Bluefin Catch Documentation system (eBCD) has significantly enhanced the coverage and accuracy of catch reporting. However, despite these advances, certain removal estimates, particularly recreational catches, may still carry some degree of uncertainty due to variable reporting rates and monitoring challenges.

The Scientific Committee on Research and Statistics (SCRS) conducts an annual review of stock status indicators, supported by periodic comprehensive stock assessments conducted in 2014, 2017, 2020, and 2022 (ICCAT, 2015; ICCAT, 2018; ICCAT, 2021; ICCAT, 2023b). These assessments utilize a suite of 10 abundance indices derived primarily from fishery-dependent data, specifically standardized Catch Per Unit Effort (CPUE) indices, which collectively span the full geographic and operational range of the fisheries. These are complemented by fishery-independent data sources, such as larval surveys and aerial monitoring of spawning aggregations, particularly in the western Mediterranean basin.

As evidenced during the site visit, removals by the UoA of longline fishery targeting bluefin tuna are regularly monitored through a structured and well-established control system coordinated by the Italian Coast Guard (Guardia Costiera), acting as the National Fisheries Control Centre (CCNP). This system ensures a level of accuracy and coverage aligned with the requirements of the applicable harvest control rule (HCR) under the ICCAT framework and EU fisheries regulations. Bluefin tuna landings are subject to strict catch documentation requirements, including electronic logbooks, real-time VMS and AIS vessel tracking, port inspections, and mandatory landing declarations, all of which provide a reliable basis for quantifying removals. In addition, the

PI 1.2.3	Relevant information is collected to support the harvest strategy

ICCAT eBCD (electronic Bluefin Catch Documentation) system ensures traceability from catch to final market, minimizing the risk of unreported removals. Moreover, since May 2025, the Italian Ministry of Agriculture, Food Sovereignty and Forests (MASAF) has mandated the application of a "seal of guarantee" on every bluefin tuna landed via longline in Sicilian—and now all Italian—ports at the time of electronic catch document (eBCD) validation. This measure, rolled out gradually from Sicilian ports starting in May and extended nationwide from May 26th, ensures traceability throughout the supply chain. The seal, produced by the Istituto Poligrafico e Zecca dello Stato and distributed to maritime authorities, displays origin information and other critical data. This initiative strengthens the fight against illegal fishing and enhances the quality and safety of seafood products delivered to consumers (see: https://www.efanews.eu/it/item/50405-pesca-masaf-scatta-il-sigillo-di-garanzia-per-il-tracciamento.html). The control reports for 2022 and 2023 (MASAF, 2022; 2023) confirm that frequent inspections, both at sea and on land, are carried out in the Eastern Sicily region (CCAP Catania), with infractions being rare and promptly sanctioned. These inspections provide real-time cross-checks of catch data against declared quotas, ensuring alignment with HCR provisions.

In summary, the monitoring system in place provides accurate, timely, and comprehensive data on removals and indicators, supporting the effective operation of the harvest control rule for bluefin tuna in this fishery. Over the past several years, considerable improvements have been achieved in both the quantity and quality of data collected. Notably, since 2014, the deployment of stereo-video cameras in the Mediterranean fisheries has improved the precision of size composition data. Nonetheless, significant gaps remain in temporal and spatial data coverage, particularly regarding detailed size and catch-effort statistics for some Mediterranean fisheries prior to the camera implementation.

For the 2022 stock assessment, revisions were made to catch-at-size (CAS) and catch-at-age (CAA) datasets for the non-estimated international (NEI) catch during 1998-2007, reflecting ongoing efforts to refine historical data inputs (ICCAT, 2023b). Therefore, stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, more indicators are available and monitored with sufficient frequency to support the harvest control rule, meeting SG60 and SG80.

The current HCR, as detailed in ICCAT Recommendation 23-07, relies heavily on abundance indices due to concerns over the reliability of other data sources, particularly recruitment estimates (ICCAT, 2024b). Recruitment remains a key source of uncertainty in stock assessments and the performance of the HCR, as predictive indicators of recruitment levels are poorly understood. Recruitment is monitored through multiple approaches, including aerial surveys of spawning aggregations, larval surveys in the western Mediterranean, and fisheries targeting smaller juvenile individuals. However, the environmental and biological drivers influencing recruitment variability are still largely unresolved. Further uncertainties exist around the estimation and monitoring of fishing capacity, which is critical to controlling fishing mortality and ensuring sustainable management. Because essential information to improve the HCR's precision is still lacking, SG 100 is not met.

c	Comprehensiveness of information			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		No	
Rationale				

PI 1.2.3	Relevant information is collected to support the harvest strategy

While data collection for artisanal fisheries has improved, providing relatively reliable catch information, significant gaps persist in the monitoring of recreational fisheries, particularly in the Mediterranean region. The ICCAT Scientific Committee on Research and Statistics (SCRS) has highlighted that recreational fisheries are not consistently or comprehensively sampled, leading to underreporting of catches. Stakeholder reports indicate instances where recreational fishing activities in the Mediterranean are occurring without proper documentation, resulting in unaccounted catches.

The SCRS acknowledges the ongoing challenges posed by illegal, unreported, and unregulated (IUU) fishing activities, which remain unquantified but are recognized as a significant impediment to accurately assessing stock productivity and providing reliable Total Allowable Catch (TAC) advice. These IUU activities undermine conservation efforts and the effectiveness of management measures.

Efforts to combat IUU fishing are being intensified through regional collaborations. As an example General Fisheries Commission for the Mediterranean (GFCM) has implemented a Regional Plan of Action to Combat IUU Fishing, promoting harmonized measures and strengthening national legislation among member countries. Initiatives include specialized training for fisheries inspectors and the deployment of innovative monitoring technologies to enhance enforcement capacity across the Mediterranean.

Despite these efforts, the persistent data deficiencies and the prevalence of unreported recreational catches mean SG80 is not met.

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Overall Performance Indicator (PI) Rationale	
Draft scoring range	60-79
Information gap indicator	Information sufficient to score PI

PI 1.2.4 – Assessment of stock status

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
a	Appropriateness of assessment to stock under consideration			
	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		Yes	Yes

Rationale

In the 2022 stock assessment of Eastern Atlantic and Mediterranean bluefin tuna, ICCAT employed a comprehensive suite of modeling approaches to evaluate stock status and inform management decisions. The assessment integrated three primary modeling platforms: Virtual Population Analysis (VPA), Stock Synthesis (SS), and the Age-Structured Assessment Program (ASAP). These models were rigorously tested and validated through an extensive Management Strategy Evaluation (MSE) process, ensuring that the assessment accounted for key biological characteristics of the species and the complexities of the fishery.

- Virtual Population Analysis (VPA): The VPA model, specifically VPA2Box version 4.01, was updated with data spanning from 1950 to 2020. This model incorporated revised catch-at-age matrices and fishing mortality estimates across 16 fishing fleets. Despite challenges in fitting length composition data, the model provided stable estimates of spawning stock biomass (SSB) and fishing mortality trends. The VPA results indicated a significant decline in SSB from 1950 to the 1970s, followed by a period of stability and a notable increase since 2010 .
- Stock Synthesis (SS): The SS model, utilizing version 3.30, was configured to analyze data from 1950 to 2020. It incorporated length composition data, conditional age-at-length data, and 11 indices of abundance. Growth was modeled using a Richards growth function, and a Beverton-Holt stock-recruitment relationship was applied. While the model faced challenges in fitting length composition data, it successfully tracked most abundance indices, revealing similar trends in SSB as observed in the VPA model .
- Age-Structured Assessment Program (ASAP): The ASAP model provided an additional perspective by analyzing catch-at-age data and abundance indices. This model contributed to cross-validation efforts, ensuring consistency and robustness across different modeling approaches.

To address uncertainties and enhance the robustness of management advice, ICCAT implemented a Management Strategy Evaluation (MSE) process. This involved testing various management procedures against a range of operating models to evaluate their performance under different scenarios. The MSE process culminated in the adoption of a Management Procedure (MP) in 2022, marking a significant advancement in the sustainable management of Atlantic bluefin tuna stocks.

The integration of multiple modeling platforms, coupled with a rigorous MSE process, has provided a comprehensive assessment of the Eastern Atlantic and Mediterranean bluefin tuna stock. The consistency of results across models and the adoption of a Management Procedure underscore the robustness of the assessment and its alignment with best scientific practices, meeting both SG80 and SG100.

b	Assessment approach

PI 1.2.4		There is an adequate assessment of the stock status		
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	Yes	Yes	
Rationale				
The stock assessment utilizes the reference point F0.1 as a proxy for FMSY, instead of relying on maximum sustainable yield (MSY) reference points. This approach is taken because a reliable estimate of the stock-recruitment relationship is not currently feasible. F0.1 is considered suitable as it reflects a precautionary level of fishing pressure and can be derived from the stock's specific growth and natural mortality parameters. In the long term, fishing at F0.1 is expected to maintain the stock at a corresponding biomass level (B0.1), even though the current estimate of B0.1 may have uncertainties. Since the assessment employs reference points that are appropriate for the biology and data availability of this stock, SG60 and SG80 are met.				
c	Uncertainty in the assessment			
	Guide post	The assessment **identifies major sources** of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a **probabilistic** way.
	Met?	Yes	Yes	Yes
Rationale				
The 2022 stock assessment of Eastern Atlantic and Mediterranean bluefin tuna (eBFT), conducted by the Standing Committee on Research and Statistics (SCRS) of ICCAT, utilized three independent modeling frameworks to ensure robustness and transparency in evaluating stock status. These models included: Virtual Population Analysis (VPA), Stock Synthesis (SS), and the Age-Structured Assessment Program (ASAP). Each of these platforms brings different structural assumptions and analytical strengths, allowing for a more comprehensive evaluation of the stock's dynamics. The assessment explicitly incorporated various sources of uncertainty across multiple biological and fishery parameters. These included variability in recruitment patterns, uncertainties in biomass estimates, differences in growth parameters, and assumptions regarding gear selectivity. By incorporating these elements into the modeling frameworks, the assessment accounts for key uncertainties that could influence stock projections and management outcomes. Importantly, the convergence of findings across all three models—in terms of stock status and trends—provides a strong basis for confidence in the assessment results. Because the models are designed to identify and incorporate the main sources of uncertainty, the assessment meets both SG60 and SG80 Furthermore, the assessment includes a probabilistic evaluation of fishing mortality in relation to the F0.1 reference point, which is used as a precautionary proxy for FMSY. This probabilistic approach ensures that uncertainty around fishing pressure is explicitly considered, enhancing the scientific credibility and precautionary nature of the advice. As a result, the assessment also meets SG100				

PI 1.2.4		There is an adequate assessment of the stock status		
d	Evaluation of assessment			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			Yes
Rationale				
As previously discussed, a broad array of stock assessment methodologies has historically been applied to evaluate the status of the eastern Atlantic and Mediterranean bluefin tuna. These have included updated versions of Virtual Population Analyses (VPAs), statistical models based on catch-at-length and catch-at-age data, as well as integrated assessment frameworks such as Stock Synthesis (SS3), the Age-Structured Assessment Program (ASAP), and other model configurations. This diverse modeling history reflects ongoing efforts to improve understanding of the stock's dynamics in light of data availability and biological complexity. In the most recent 2022 stock assessment, three core modeling platforms were utilized: VPA, SS, and ASAP. These models were selected for their capacity to incorporate the broadest range of available data and to address key biological and fishery dynamics. Several factors continue to influence the robustness and interpretation of the bluefin tuna stock assessment. These include shifts in fishing practices and strategies, evolving patterns in gear selectivity, and persistent uncertainties regarding recruitment levels, particularly the strength and variability of recent year classes. Additionally, there remains a relatively broad range of estimates for stock status in relation to the $F_{0.1}$ reference point across the three modeling approaches. Despite these uncertainties, all three assessment models indicated broadly consistent trends in spawning stock biomass (SSB), fishing mortality (F), and recruitment. Importantly, retrospective analyses demonstrated that the models were internally consistent, exhibiting stable estimates when subjected to re-fitting after the removal of recent data. Furthermore, the suite of models underwent rigorous testing through the Management Strategy Evaluation (MSE) process, which was integral in selecting and validating an appropriate Management Procedure (MP) for the fishery. This process confirmed that the models were sufficiently robust to support precautionary and effective management under a range of potential scenarios. Given the use of multiple, independently validated assessment tools, the incorporation of precautionary reference points, and the models' demonstrated consistency and fit to the available data, the assessment process reflects a high level of scientific rigor. Therefore, SG100 is met.				
e	Peer review of assessment			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been **internally and externally** peer reviewed.
	Met?		Yes	Yes
Rationale				

PI 1.2.4	There is an adequate assessment of the stock status

SCRS implements a rigorous, multi-tiered peer review process to ensure the scientific integrity of its stock assessments, including those for Atlantic bluefin tuna. This process encompasses internal evaluations during SCRS plenary sessions, specialized species group meetings, and dedicated workshops. These forums provide platforms for critical examination of data inputs, modeling assumptions, and analytical methodologies, fostering transparency and scientific rigor. Such comprehensive internal scrutiny meets SG80.

Additionally, SCRS developed a system of bringing on external scientists for key issues on the SCRS agenda. This indicates that reviewing is extensive, but reviews are mainly internal by scientists linked to interested parties in the process. Comments from the Eastern Atlantic stock assessment reviewer are included in the report (ICCAT E-BFT SA 2022). Collectively, the SCRS's commitment to rigorous internal and external peer review processes, coupled with its dedication to publishing scientific findings. These practices ensure that stock assessments for Atlantic bluefin tuna are both credible and aligned with internationally recognized benchmarks for fisheries science, meeting SG100.

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Overall Performance Indicator (PI) Rationale

Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI

7.5. Principle 2

7.5.1. Principle 2 background

Principle 2 of the MSC standard sets requirements for fishing operations that allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. Principle 2 is designed to specifically assess the outcome, management and information aspects relating to all the key ecosystem components: primary and secondary species (i.e., species where management tools and measures are in place, or not, respectively), Endangered, Threatened, or Protected (ETP) species, habitats and ecosystems. Each P2 species is considered within only one of the primary species, secondary species or ETP species components. Primary and Secondary Species are accidental or unwanted catches associated with the target fishery. Those making up more than 5% of the overall catch profile of a UoA are classified as Main, while anything below it is classified as Minor. However, if a minor species is defined "less resilient" as per MSC specifications, these species can be classified as Main.

Table 10 shows the Scoring elements in this fishery.

Table 10. Scoring elements.

Component	Scoring elements	Designation	Data-deficient
P1	Atlantic and Mediterranean bluefin tuna		No
Primary	Albacore	Main	No
Primary	Swordfish	Main	No
Primary	Argentine squid	Main	No
Primary	Skipjack	Main*	No
Primary	Sardine (Adriatic or N. Tyrrhenian Sea)	Minor	No
Secondary	Dolphinfish	Minor	No
Secondary	Mediterranean spearfish	Minor	Yes
Secondary	Blue shark	Main*	Yes
Secondary	Round sardinella	Minor	Yes
ETP	Shortfin mako shark	NA	No

*As these species were not recorded in the logbook, being precautionary, they have been assessed as Main.

Primary and Secondary species

Table 11 shows the catches of the UoA during 2022-2024 provided by the client. No other fisheries-independent data were provided to the assessment team, as there is no observer program or EM cameras on board to gather this type of data.

Table 11. Weight (in kg) of the species caught by the UoA during 2022-2024 and their percentage over the whole catch. Source: Client.

Common name (EN)	Species code	Common name (IT)	Scientific name	2022 kg	2023 kg	2024 kg	2022 %	2023 %	2024 %
Bluefin tuna	BFT	Tonno rosso	*Thunnus thynnus*	82,709	140,752	142,917	44.06	46.42	39.85
Albacore	ALB	Alalunga	*Thunnus alalunga*	107,463	225,650	217,063	33.91	28.95	26.24
Swordfish	SWO	Pesce spada	*Xiphias gladius*	34,887	101,938	169,284	14.30	20.97	31.08

Common dolphinfish	DOL	Lampuga	*Coryphaena hippurus*	7,321	5,131	3,276	3.00	1.06	0.60
Mediterranean spearfish	MSP	Aguglia imperiale	*Tetrapturus belone*	882	2,014	1,507	0.36	0.41	0.28

According to the above table, apart from Bluefin tuna (which is the target species), there are two **Main Primary** species, i.e., the Albacore and the Swordfish. The Common dolphinfish and the Mediterranean spearfish, on the other hand are classified as **Minor Secondary**.

PRIMARY SPECIES

According to the logbooks, there are two Main Primary species (and no minor): Albacore and Swordfish.

Albacore[4]

The status of the Mediterranean albacore stock is based on the 2024 assessment using 2022 as the terminal year for catch data. Complete information is found in the Report of the Intersessional Meeting of the Albacore Species Group including the Mediterranean Albacore Stock Assessment (ICCAT, 2021) and the Report of the 2024 ICCAT Mediterranean Albacore Data Preparatory and Stock Assessment Meeting (ICCAT, 2024a).

In 2024, the stock assessment for Mediterranean albacore was conducted using catch and catch per unit effort (CPUE) data up to 2022. A Bayesian state space surplus production model (JABBA) was used for assessment purposes. Eight indices were used: Spanish, Ionian, Ligurian, Med-South, and historical Italian longline indices, western Mediterranean larval index (providing information on the trends of the spawning biomass), and the Spanish Tournament index and the Greek longline index (new). These indices (expressed in fish number or weight) showed a general noisy but rather constant trend over time. Comparatively, the larval survey suggests the largest decrease in biomass during the 2000s and early 2010s (**Figure 5**). The historical part of the index used data collected with a different gear and was calibrated to be consistent with the latter data. However, there was uncertainty as to whether this calibration was appropriate for ALB. Thus, it was decided to consider two scenarios: a continuous series and one splitting the index into two time series (2001-2005/2012-2022).

Overall, the data inputs to the model remain uncertain, including: possible underreporting of the catch; limitations both in spatial and temporal coverage of available indices of abundance; the fact that most indices are limited to the most recent years of the fisheries; and, conflicting trends among these indices. In fact, the treatment of the larval index (split or not) proved crucial when characterizing the current state of the stock.

The results from these two scenarios provided very different perceptions of the stock status (see **Table 12**). Under scenario 1 that considered the larval index as a continuous index like in the 2021 assessment (referred to as "scenario S12" in the detailed report), estimated current fishing mortality levels (2022) are above FMSY (1.22; 0.66-2.10, median and 95% Confidence Interval (CI)), and the current biomass is below the BMSY level (0.58; 0.31-1.10, median and 95% CI) (**Figure 6**). The probability of being in the red, yellow, orange and green quadrants of the Kobe plot is 74.2%, 21.2%, 0.4% and 4.2%, respectively (**Figure 6**). In contrast, under scenario 2 (splitting the larval index, referred to as "scenario S19" in the detailed report) results indicate that current fishing mortality levels (2022) are below FMSY (0.42; 0.13-1.17, median and 95% CI), and the current biomass is above the BMSY level (1.44; 0.59-2.64, median and 95% CI) (**Figure 6**). The probability of being in the red, yellow, orange and green quadrants of the Kobe plot is 5.5%, 15.2%, 0.2% and 79.1%, respectively (**Figure 6**).

[4] https://www.iccat.int/Documents/SCRS/ExecSum/ALB_MED_ENG.pdf

The Committee emphasized that the substantial uncertainties in the assessment, which resulted in two very different stock statuses, prevent the provision of a clear outlook for the stock at this time. The two alternative scenarios considered would support substantially different TAC values in the future and the Committee is unable to judge which one reflects the most appropriate scenario. The two alternative scenarios considered in the assessment were projected to 2036 using the current TAC (2,500 t) and probabilities of B>BMSY were at or above 60% by the end of the projection period for both scenarios. While the Committee is unable to judge which one of the scenarios was the most appropriate it appears that the current TAC will recover the stock and achieve B>BMSY with a probability higher than 60% regardless of which is the most appropriate scenario.

In 2021, the Commission enacted the Recommendation by ICCAT to establish a Rebuilding Plan for Mediterranean Albacore (Rec. 21-06[5]), initiating a 15-year rebuilding plan commencing in 2022 and extending until 2036, aimed at achieving BMSY with at least minimum 60% likelihood. Subsequently, in 2022, the Commission replaced Rec. 21-06 with the Recommendation by ICCAT amending the Recommendation 21-06 to establish a Rebuilding Plan for Mediterranean albacore (Rec. 22-05[6]), the one currently in force. Recommendation 22-05 confirms the 15-year recovery plan and includes various provisions such as: a 2,500 t Total Allowable Catch (TAC) for the years 2022, 2023, and 2024; a restricted number of fishing vessels (based on 2017 or 2018 data); a census of licensed sport and recreational vessels (with a maximum catch limit of three albacore specimens per vessel per day); and a seasonal closure spanning three months from 1 October to 30 November, along with an additional month between 15 February and 31 March, or alternatively, from 1 January to 31 March. The Committee was not able to test the effectiveness of these recent regulations.

The Committee reiterates that the substantial uncertainties in the assessment prevent from providing specific TAC advice at this time. However, the Committee noted that, in both scenarios, the current TAC (2,500 t) would allow to meet the management objectives to recover the stock above BMSY with a probability higher than 60% by the end of the projection period (i.e., 2036). Further work is required to address the key issues identified, including the treatment of the western Mediterranean larval index and the reliability of the catch data, before the Committee can provide robust management recommendations for the Mediterranean albacore stock. The Committee emphasized that the uncertainty in total catch is of paramount importance in production models and was not adequately addressed in the models presented. To the extent that the reported catches are inaccurate or incomplete, the ability of these models to reflect the stock dynamics accurately is undermined. The Committee concluded that the previous assessments of 2021 and 2017 (ICCAT, 2017a) were likely affected by the same issues. Therefore, the Committee suggests re-evaluating the stock status only after addressing the main concerns expressed.

[5] https://www.iccat.int/Documents/Recs/compendiopdf-e/2021-06-e.pdf
[6] https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-05-e.pdf

Table 12. Mediterranean Albacore stock status summary table. Source: ICCAT, 2024a.

MEDITERRANEAN ALBACORE SUMMARY TABLE	
Maximum Sustainable Yield	Scenario 1: 3,564 t (2,584 - 4,663) Scenario 2: 4,174 t (2,831 - 7,936)[1]
Current (2023) Yield	2,286 t
Yield in last year of assessment (2022)	2,295 t
B_{2022}/B_{MSY}	Scenario 1: 0.58 (0.31-1.10) Scenario 2: 1.44 (0.59-2.64)[1]
F_{2022}/F_{MSY}	Scenario 1: 1.22 (0.66-2.10) Scenario 2: 0.42 (0.13-1.17)[1]
Stock Status	Overfished: Scenario 1: YES Scenario 2: NO Overfishing: Scenario 1: YES Scenario 2: NO
Management measures in effect:	Rec. 22-05: 15-year Rebuilding plan (2022-2036); TAC for years 2022, 2023 and 2024: 2,500 t Limited number of vessels (reference year 2017 or 2018); Census of authorized sport & recreational vessels (maximum three albacore specimens/vessel/day); Time closure: 01/10-30/11 + 1 month between 15/02-31/03; alternatively, 01/01-31/03.

[1] Median and 95% credibility intervals for the Bayesian surplus production model under the two alternative scenarios considered.

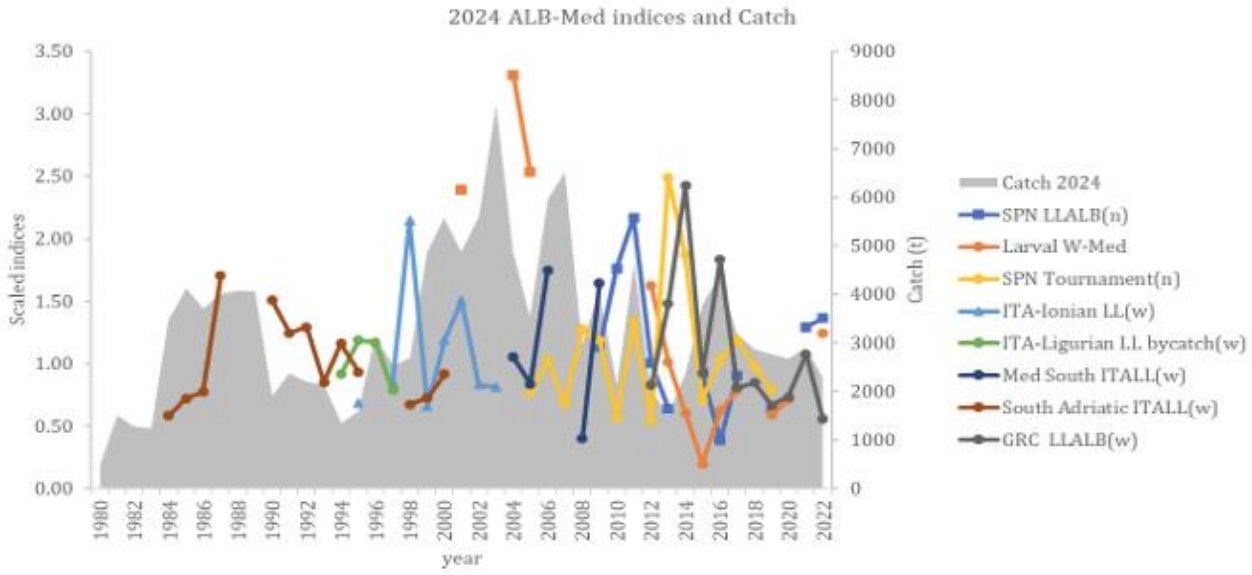


Figure 5. Mediterranean albacore. Abundance indices used in the 2024 Mediterranean Albacore Stock Assessment n and w refer to abundance indices in number and weight, respectively. Source: ICCAT, 2024a.

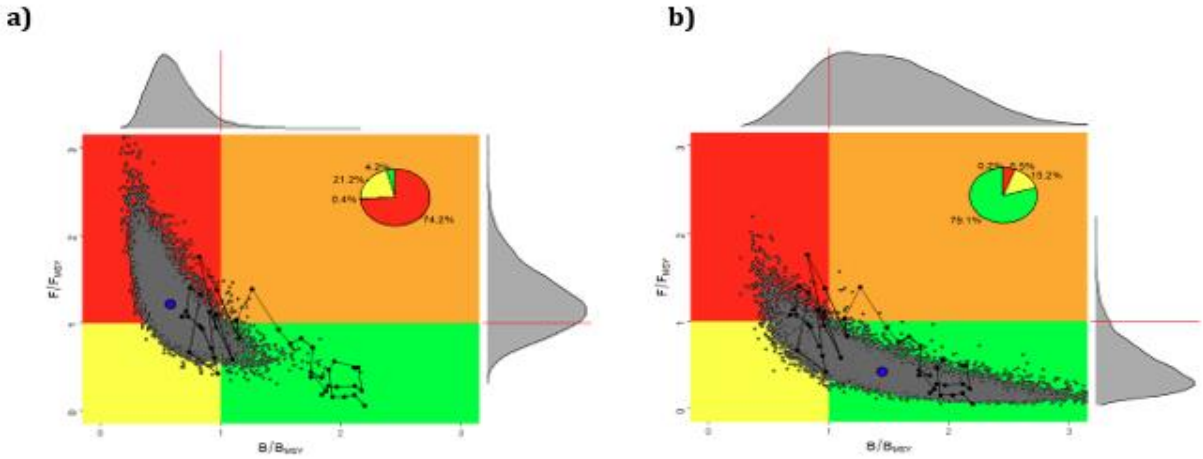


Figure 6. Mediterranean albacore. Stock status trajectories of B/B_{MSY} and F/F_{MSY} over time (1980-2022) with uncertainty around the current estimate (Kobe plots) for Bayesian surplus production model, as well as probability of being overfished and overfishing (red), of being neither overfished nor overfishing (green), of being overfished but not overfishing (yellow) and of overfishing but not overfished (orange), for scenarios 1 a) and 2 b). The probability distributions shown in each axis represent uncertainty around current B/B_{MSY} and F/F_{MSY}. Source: ICCAT, 2024a.

Mediterranean Swordfish[7]

Research results based on genetic studies have demonstrated that Mediterranean swordfish compose a unique stock separated from the Atlantic ones, although there is incomplete information on stock mixing and boundaries and further work is needed on this aspect. The Mediterranean swordfish have different biological characteristics compared to the Atlantic stocks. The growth parameters are different, and the sexual maturity is reached at younger ages than in the Atlantic (ICCAT, 2024b).

Since 1989 and up to 2011, the reported landings of swordfish in the Mediterranean Sea have declined fluctuating mostly between 12,000 to 17,000 t. Since 2012 and up to 2022, following the implementation of the three-month fishery closure and the establishment of the list of authorized vessels, overall nominal fishing effort has been decreasing with catches below 10,000 t since 2018.
(**Figure 7**).

In recent years (2008-2023), the main fishing gears used are longlines (on average, representing around 97% of the annual catches) and gillnets. Since 2003, gillnets have been gradually eliminated following ICCAT recommendations for a general ban of driftnets in the Mediterranean. Minor catches are also reported from harpoon, trap and fisheries targeting other large pelagic species (e.g. albacore). From 1999 a deep longline (100-600 m depth; mesopelagic longline) gear has been gradually introduced and nowadays has partially replaced the surface longline gears in several Italian, French and Spanish swordfish fleets. This is particularly noteworthy, as these fisheries are among the largest within the stock area, and the changes have implications for the use of catch rates as indices of abundance in the stock assessments.

[7] https://www.iccat.int/Documents/SCRS/ExecSum/SWO_MED_ENG.pdf

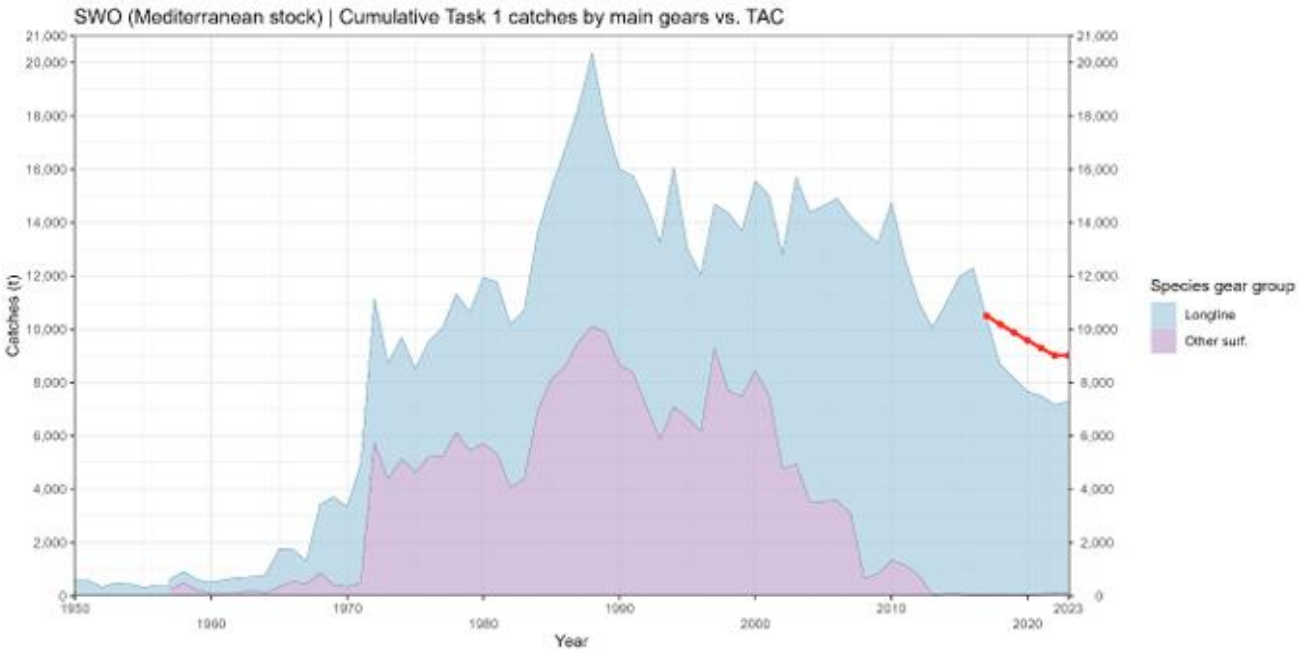


Figure 7. Estimates of Task 1 swordfish catches (t) in the Mediterranean by major gear types, for the period 1950-2023, and corresponding annual TACs since 2017 (Rec. 16-05). The red dotted line represents the TAC. Source: ICCAT, 2024b.

Since the 2016 assessment[8], there have been several changes both in fisheries operations and in the data available as input to the assessment models, which have undergone substantial revisions and the integration of new information. In addition, in 2020 stock assessment a Bayesian surplus production model, using a long series of data (1950-2018), was examined and was chosen for providing the scientific advice for the Mediterranean swordfish stock. Until 2016, advice was based on age structured models which were re-examined again. However, due to lack of indices of abundance for the earlier period, the input data for the age-structured models started in 1985, when the stock was already under high exploitation. From the age-structured models it was estimated that the stock was already overfished in 1985, although total catches had never exceeded MSY estimates from either age-structured or surplus production models prior to 1985. This was considered biologically implausible and it was deduced that these models were unable to properly estimate stock productivity due to data limitations (insufficient data series).

Under different assumptions about reporting levels of undersized fish in the catch, age-structured analysis including data from 1985-2018 indicated that current SSB levels are much lower than those in the 80s, while recruitment shows a declining trend in the last decade. Due to limited data for the earlier period of the fishery (See data catalogue in the Report of the 2020 Mediterranean Swordfish Stock Assessment[9], Table 2), the age structured analysis failed to provide reliable estimates of stock productivity, and conclusions on the state of the stock were based on the surplus production model approach.

[8] https://www.iccat.int/Documents/CVSP/CV073_2017/n_3/CV073031005.pdf
[9] https://www.iccat.int/Documents/CVSP/CV077_2020/n_3/CV077030179.pdf

Results of the Bayesian surplus production model that used the whole catch series from 1950 to 2018, assuming also discard under-reporting in the last decade, indicated that stock biomass started declining from 1970 onwards, while fishing mortality starting exceeding FMSY in the late 1980s when catches peaked (**Figure 8**). The stock became overfished in the early 1990s following the full development of the fishery and the relatively high catches observed in middle-late 1980s. The analysis concluded that there is a 41.1% probability that the stock is overfished and overfishing is still occurring (red) and a 45.6% probability that the stock is overfished but overfishing is not occurring (yellow) (**Figure 9**).

The Committee again noted the large catches of swordfish less than 4 years old and the relatively low number of large individuals in the catches. Fish less than four years old usually represent more than 70% of the total yearly catches in terms of numbers.

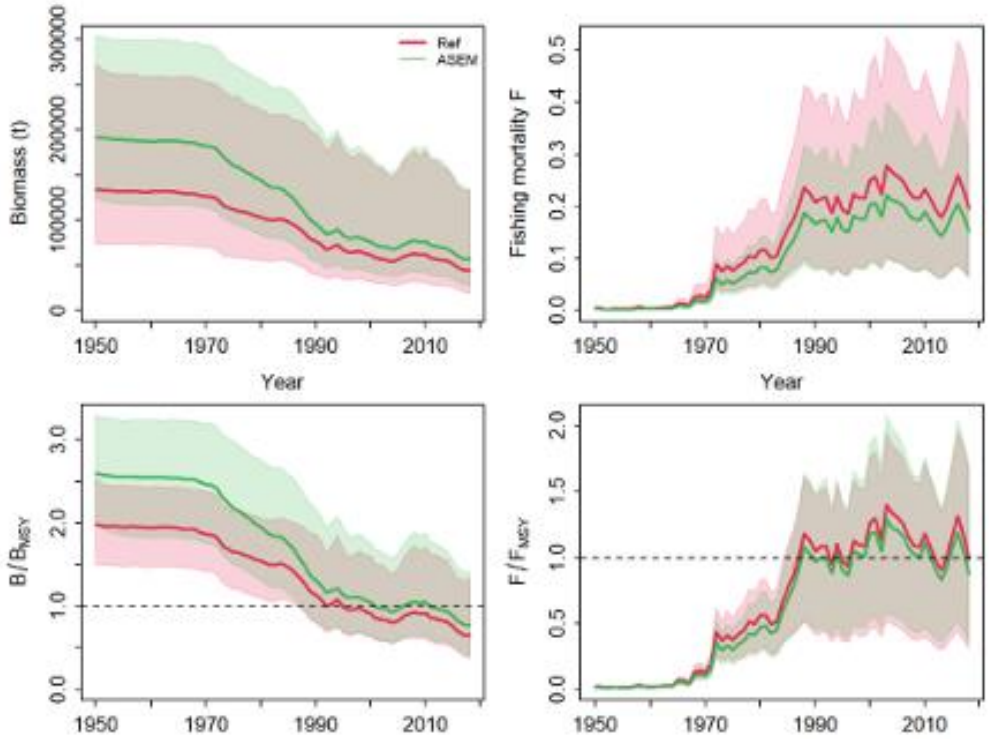


Figure 8. Trends in biomass and fishing mortality (upper panels) and biomass relative to BMSY (B/BMSY) and fishing mortality relative to FMSY (F/FMSY) (bottom panels) for each scenario from the Bayesian state-space surplus production model fits to Mediterranean swordfish. Source: ICCAT, 2024b.

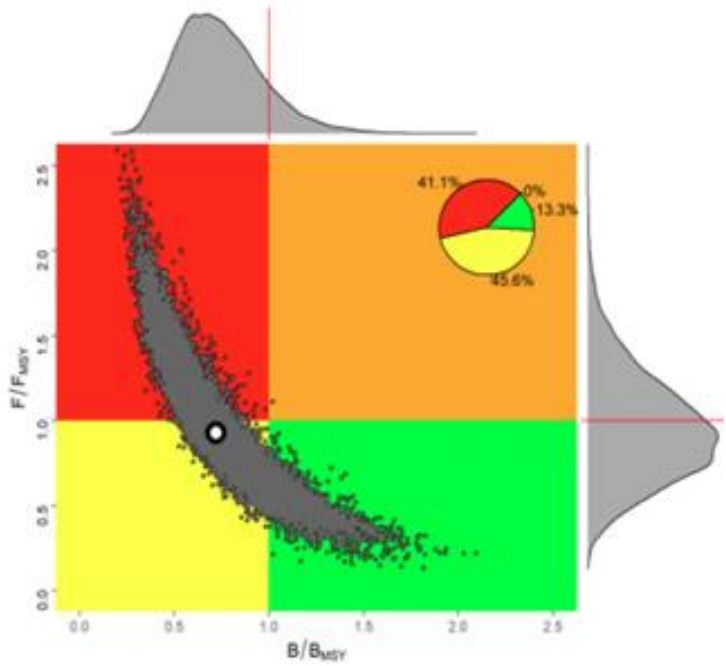


Figure 9. Kobe phase plot showing the combined posteriors of B2018/BMSY and F2018/FMSY presented in the form of joint MCMC posteriors of JABBA model runs for Mediterranean swordfish. The probability of posterior points falling within each quadrant is indicated in the pie chart. Source: ICCAT, 2024b.

Effect of current regulations

ICCAT imposed a Mediterranean-wide one-month fishery closure for all gears targeting swordfish in 2008, followed by a two-month closure since 2009. Through Rec. 11-03[10] and Rec. 13-04[11] the Commission has adopted additional management measures intended to bring the stock back to levels that are consistent with the ICCAT Convention objective. Those measures include an additional one-month closure accompanied by minimum catching size regulations, a list of authorized vessels, specifications on the technical characteristics of the longline gear, and onboard domestic observers on a given percentage of longline vessels. Recently, through Rec. 16-05[12], which replaced Rec. 13-04, a 15-year recovery plan has been adopted. In addition, increased catching size, and fishing capacity limitations were established, accompanied by TACs (10,500 t in 2017 Rec. 16-05, with a 3% annual reduction over the period 2018-2022) and a seasonal closure of the albacore fishery to reduce juvenile swordfish bycatches. The European Union introduced a driftnet ban for highly migratory species in 2002 and in 2003 ICCAT adopted a recommendation for a general ban of this gear in the Mediterranean (Rec. 03-04[13]). Rec. 04-12[14] forbids the use of various types of nets and longlines for sport and recreational fishing for tuna and tuna-like species in the Mediterranean.

After the adoption of the aforementioned ICCAT Recommendations, reported catches have decreased significantly from the 2000s' level, making the catches of the period 2012-2023 among the lowest of the last three

[10] https://www.iccat.int/Documents/Recs/compendiopdf-e/2011-03-e.pdf
[11] https://www.iccat.int/Documents/Recs/compendiopdf-e/2013-04-e.pdf
[12] https://www.iccat.int/Documents/Recs/compendiopdf-e/2016-05-e.pdf
[13] https://www.iccat.int/Documents/Recs/compendiopdf-e/2003-04-e.pdf
[14] https://www.iccat.int/Documents/Recs/compendiopdf-e/2004-12-e.pdf

decades. In addition, reported catches of undersized swordfish have also decreased more than 50%, compared with the levels of the decade of 2000s. Importantly, based on observations onboard, the recent increase of the minimum catching size from 90 to 100 cm (through Rec 16-05) has resulted in discard increases of undersized swordfish (up to 600%) in some fisheries. Though an attempt has been made to statistically estimate discard levels and consider them in stock assessment models, the real volume of total discards is unknown due to this under-reporting. Such under-reporting leads to false estimates of the overall catch volume and consequently bias stock status estimates and projections of future stock size under different management measures.

Both hooking and post-release mortality are unknown for this stock but scientific work is ongoing on this issue. However, for the Atlantic very high values of hooking mortality (ranging between 78-88%) have been reported for swordfish less than 125 cm LJFL, and it is possible that similar high values also occur in the Mediterranean. The Committee showed concern that such discards are not being fully reported and reiterated that all dead discards should be reported in Task 1 nominal catches for all fisheries. Additionally, they should be included in the analysis of CPUE data trends.

Management recommendations

Over the last 50 years stock biomass shows declining trends (**Figure 8**), starting with the period around 1970-1990, when the fishery was in a strong developing phase. In the following period until about 2010, declining trends were rather modest accompanied by small-scale fluctuations. In the most recent period, the stock biomass has continued to decline. As expected, fishing mortality followed an opposite trend with sharper increases during the 1980s. Current stock biomass is about 30% lower than that corresponding to MSY, while fishing mortality is around FMSY (see **Table 13**).

Table 13. Mediterranean Swordfish stock status summary table. Source: ICCAT, 2024b.

MEDITERRANEAN SWORDFISH SUMMARY	
Maximum Sustainable Yield	13,325 t (10,899 – 17,346 t)[1]
Current (2023) Yield	7,314 t
B_{MSY}	71,319 t (42,562 – 113,758)[1]
F_{MSY}	0.19 (0.12 - 0.34)[1]
Relative Biomass (B_{2018}/B_{MSY})	0.72 (0.38 - 1.29)[1]
Relative Fishing Mortality (F_{2018}/F_{MSY})	0.93 (0.42 - 1.68)[1]
Stock Status (2018)	Overfished: YES Overfishing: NO
Management Measures in Effect:	Driftnet ban, Rec. 03-04: Three-month fishery closure, gear specifications (number and size of hooks and length of gear), minimum catching size regulations, list of authorized vessels, fishing capacity restrictions, domestic observers onboard on longlines. TAC, Rec. 16-05: 10,500 t in 2017, 10,185 t in 2018, 9,879 t in 2019, 9,583 t in 2020, 9,296 t in 2021 and 9,017 t in 2022 and 2023.

[1] 95% credibility intervals of 30,000 Markov chain Monte Carlo (MCMC) iterations from Bayesian surplus production models.

According to the Commission objectives the stock requires rebuilding and relevant scenarios were simulated assuming different levels of TACs. Analysis indicated that the probability of stock rebuilding by the end of the projection period (2028) is 60% if a TAC equal to 10,000 t is implemented (**Figure 10**). The probability increases if

lower TACs levels are selected. As there are uncertainties on stock productivity, these estimates may be optimistic and should be interpreted with caution.

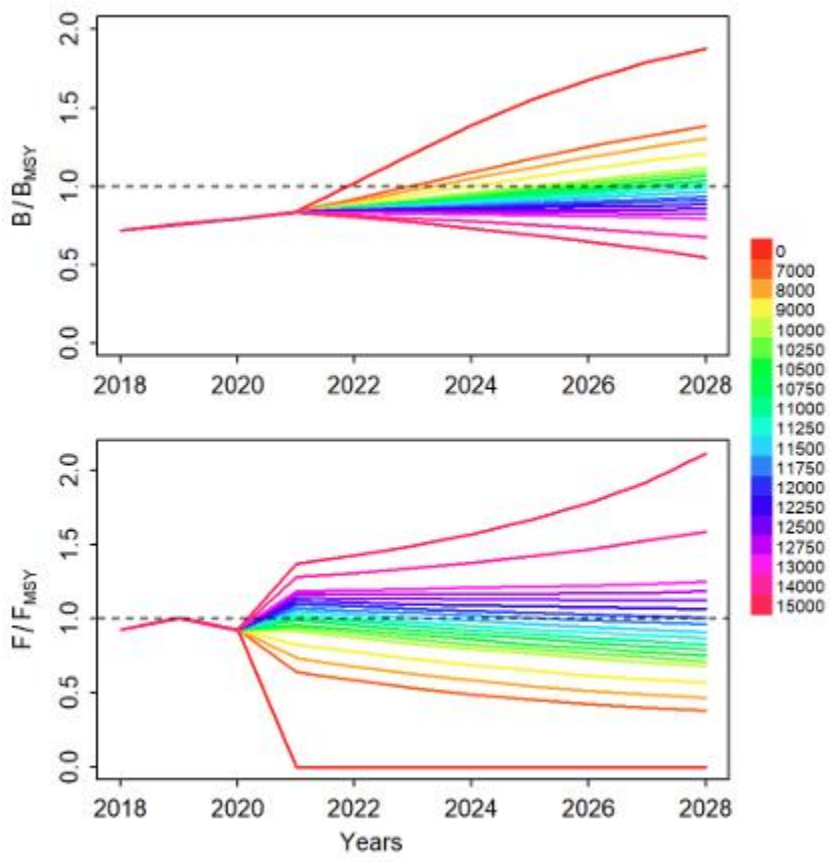


Figure 10. Trends of projected relative stock biomass (at begin of year, upper panel, B/BMSY) and fishing mortality (at end of year, bottom panel, F/FMSY) of Mediterranean swordfish under different TAC scenarios (0-15,000 t), based upon the combined projections of JABBA model runs. Each line represents the median of 30000 MCMC iterations by projected year. Source: ICCAT, 2024b.

During the site visit, Skipjack was mentioned by the client, although it does not appear in the data provided by them. To be precautionary, the AT has included it as Primary Main:

Skipjack:[15]
The most recent stock assessment for skipjack (both eastern and western stocks) was carried out in 2022, which is an update from 2014 (ICCAT 2022a). For the eastern stock, three models were tried by the stock assessment group: an age-based statistically integrated model (SS3) and two surplus production models (JABBA and MPB; MPB was however not taken forward due to lack of stability). At the stock assessment meeting, the group were not able to agree on a reference model, so the results were finalised intersessionally (informal remote meetings).

[15] https://www.iccat.int/Documents/SCRS/ExecSum/SKJ_ENG.pdf

The final results and advice are presented in the 2022 SCRS meeting report which is what is used as a basis for this summary. The assessment results are based on an uncertainty grid incorporating the SS3 and JABBA models with various sensitivities thought to cover the plausible bounds of uncertainty in the assessment.

According to the median estimates from the grid, the stock status for eastern skipjack relative to MSY reference points is appropriate (B2020/BMSY = 1.60, F2020/FMSY = 0.63). The median MSY estimate was 216,617 t (consistent with catch in 2020 and 2021, but below catch from 2015-2019). The probability of B>BMSY, as estimated from the uncertainty grid, was 83%, but the group noted the high uncertainty in estimates of B/BMSY reflected in the long tails of the distribution (95% confidence interval for B/BMSY of 0.5-5.79; i.e., a 2.5% probability of the stock biomass being <50% BMSY).

The summary status table for the stock is given in **Table 14**. Time series of biomass and fishing mortality relative to MSY reference points are given in **Figure 11**.

The stock status of eastern Atlantic skipjack tuna in 2020 was estimated with a high probability (78%) to be in a sustainable condition (green quadrant), with that stock not overfished or subjected to overfishing (**Figure 12**). According to the Kobe II Strategy Matrix (K2SM), a future constant catch using the median MSY of 216,617 t will have about 55% probability of maintaining the stock in the green quadrant of the Kobe plot through 2028. Assuming a constant catch at MSY, the probability of the stock biomass being below 20% of BMSY in 2028 was about 17%, and the probability of stock biomass being below 10% in 2028 was about 14%.

Table 14. Eastern Atlantic Skipjack stock status summary table. Source: ICCAT, 2022a.

ATLANTIC SKIPJACK SUMMARY	
	Eastern Atlantic
Maximum Sustainable Yield (MSY)[1]	216,617 t (172,735 – 284,658 t)
Yield for 2020 at the Stock Assessment	217,874 t
Current yield for 2023	219,874 t
Relative Biomass (B_{2020}/B_{MSY})[2]	1.60 (0.50 – 5.79)
Relative Fishing Mortality (F_{2020}/F_{MSY})[2]	0.63 (0.18 – 2.35)
Stock Status (2020)	
Overfished:	No
Overfishing:	No

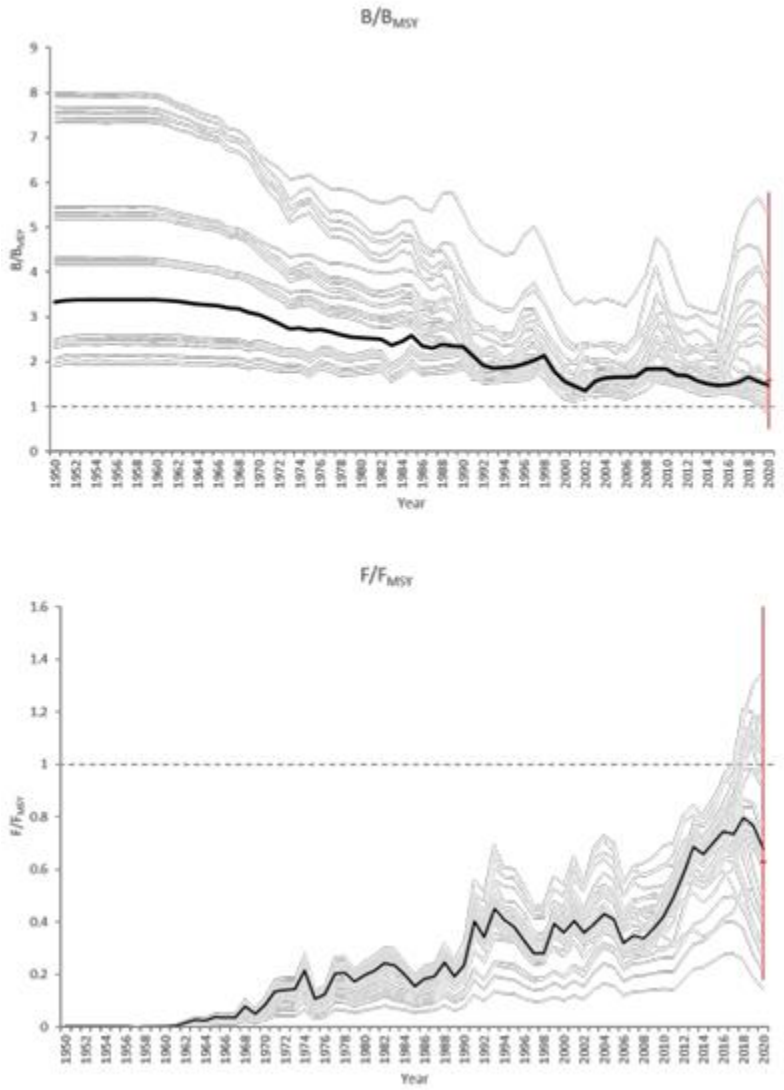


Figure 11. Relative abundance (B/BMSY) (top) and fishing mortality (F/FMSY) (bottom) historic median trends for the eastern skipjack stock estimated by each model from the uncertainty grid, solid line represent the median of the trends plotted, and the vertical red line in 2020, the 95% confidence bound of the stochastic combined results. Source: ICCAT, 2022a.

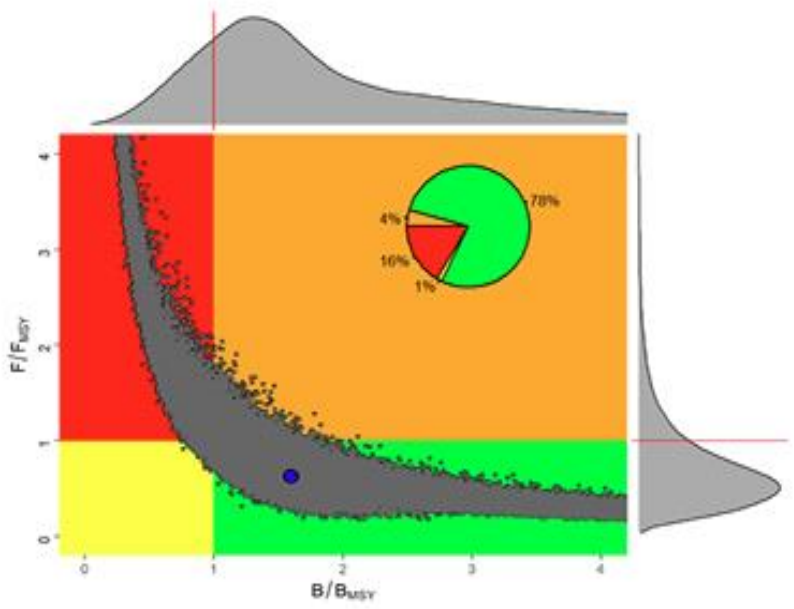


Figure 12. Joint Kobe phase plot for the 18 Stock Synthesis uncertainty grid runs and 18 JABBA uncertainty grid runs for the eastern Atlantic skipjack stock. For each run the benchmarks are calculated from the year-specific selectivity and fleet allocations, and based on 90,000 MVLN iterations for Stock Synthesis and 90,000 MCMC iterations for JABBA. The blue point shows the median of 180,000 iterations for SSB2020/SSBMSY or B2020/BMSY and F2020/FMSY for the entire set of runs in the grid. Grey points represent the 2020 estimates of relative fishing mortality and relative spawning stock biomass for 2020 for each of the 180,000 iterations. The upper graph represents the smoothed frequency distribution of SSB2020/SSBMSY or B2020/BMSY estimates for 2020. The right graph represents the smoothed frequency distribution of F2020/FMSY estimates for 2020. The inserted pie graph represents the percentage of each 2020 estimate that fall in each quadrant of the Kobe plot. All SSB for Stock Synthesis showed the values at the end of years. Source: ICCAT, 2022a.

Effect of current regulations

The current regulations for tropical tunas, in Rec. 23-01[16], only entered into force in June 2024, and the impacts on the SKJ stock and fisheries are not yet evident in the available scientific data. However, the previous Recommendations, Rec. 22-01[17] and Rec. 21-01[18], included several measures that impacted fishing for the eastern stock, including the first Atlantic-wide, temporal closure on fishing for schools associated with FADs, limits to the number of FADs that can be actively managed by individual purse seiners, changes in FAD design, and others. In addition, taking into consideration the multi-species nature of tropical tuna fisheries, the Total Allowable Catch (TAC) and catch limits adopted for other tropical tuna stocks, mainly bigeye tuna, may also explain the drop in skipjack catches in recent years.

SECONDARY SPECIES

[16] https://www.iccat.int/Documents/Recs/compendiopdf-e/2023-01-e.pdf
[17] https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-01-e.pdf
[18] https://www.iccat.int/Documents/Recs/compendiopdf-e/2021-01-e.pdf

According to the logbooks, there are two Minor Secondary species (and no main): Dolphinfish and Mediterranean spearfish.

Dolphinfish[19]

The common dolphinfish (*Coryphaena hippurus*) is a GFCM priority species of regional importance. It's present all over the Mediterranean, so it needs to be managed at basin level. People usually fish for the species using anchored fish aggregating devices (FADs), whose impacts on the environment have been the focus of increasing attention in recent years. In order to reduce the harm caused to ecosystems by FADs and to maintain common dolphinfish stock levels, a series of transitional measures have been adopted (although they are for common dolphinfish fisheries using FADs) while a multiannual management plan is being developed.

Moltó et al. (2022) developed a multiannual five-fleet generalized depletion model applicable to a monthly database of effort, catch, and mean weight from 2008 to 2019 for Mediterranean common dolphinfish (*Coryphaena hippurus*) fishery. Results showed a high natural mortality rate (0.25 month^{-1}) and wide intra-season fluctuations in biomass. Annual recruitment fluctuates around 10 million individuals, and it has been stable along the analysed period. Exploitation rate only exceeded 40% during the peak month of catches, being much lower the rest of the season, indicating that this stock is fished within sustainable limits.

Mediterranean spearfish

Because Mediterranean spearfish is considered a minor species and as it is data-deficient a PSA analysis has been carried out for this stock, as per MSC requirements. Results of the PSA are shown in **Section 8.3.1**.

Blue shark

From the catch data provided by the client and summarized above in **Table 11**, no other species are caught as bycatch. However, during the site visit, talking to the client and the other skippers, they confirmed that very rarely they do catch **Blue shark (*Prionace glauca*)**, although, according to them, they are always release alive by cutting the line. These interactions are not reported in their logbooks.

To be precautionary, the assessment team is including it in this pre-assessment as Secondary main.

The Blue Shark (*Prionace glauca*) is found throughout pelagic waters of the Mediterranean Sea from the surface to as deep as 1,160 m. It is a large (up to 380 cm total length), relatively fast-growing and fecund oceanic shark, with one of the highest maximum annual rates of population increase of all commercially-fished oceanic shark species (at 29% per year). Despite this, the Mediterranean subpopulation has undergone a decline of 78–90% over the past 30 years (three-generation period). The Blue Shark is therefore listed as Critically Endangered in the Mediterranean Sea based on a past decline of up to 90% over three generations resulting from ongoing overfishing (Sims et al., 2016).

The latest stock assessment for blue shark (*Prionace glauca*) was conducted for both Atlantic stocks in 2023 through a process that included the Blue Shark Data Preparatory Meeting (hybrid/Olhão, Portugal, 17-21 April 2023) and the Blue Shark Stock Assessment Meeting (hybrid/Madrid, Spain, 17-21 July 2023). The complete description of the stock assessment process and the development of management advice is found in the Report of the 2023 Blue Shark Data Preparatory Meeting (ICCAT, 2023c) and the Report of the 2023 Blue Shark Stock

[19] https://www.fao.org/gfcm/managementplan-dolphinfish/en/

Assessment Meeting (ICCAT, 2023d). The previous Blue Shark Stock Assessment Session was held in Lisbon, Portugal, 27-31 July 2015 (ICCAT, 2016).

At that time, the Atlantic population was considered to be composed of two stocks; a north Atlantic population and a south Atlantic population. However, there have been several new sources of published information since the initial consideration of the stock delineation of blue shark in the Atlantic, including tagging data and genetic analyses which support a small degree of mixing between the northern and southern stocks and a small degree of mixing between the northern and Mediterranean stocks (ICCAT, 2023). In particular, genetic information has provided statistically significant differences between the Mediterranean and the North Atlantic individuals (Carlson et al., 2023; Dolfo et al., 2024; Leone et al., 2024).

During the last stock assessment, it was also noted that Mediterranean Sea catch series remain incomplete. To permit future stock assessments, ICCAT (2023) recommended that CPCs that catch blue sharks in the Mediterranean Sea provide the required Task 1 nominal catches (including estimates of dead and live discards) and Task 2 size and catch-effort data including historical time series. It was also recommended that CPCs endeavour to increase their efforts to collect blue shark biological samples in the Mediterranean Sea.

The North Atlantic stock assessment therefore only considered North Atlantic data. Recent research, however, raises the question as to whether there is a separate blue shark stock in the Mediterranean. The Group recognized that this question warranted further research, as well as an evaluation of the available data from the Mediterranean, and that this should be considered in the development of the shark working plan as well as being addressed in the new SCRS Strategic Plan. Due to the current data limitations that preclude conducting stock assessments for the blue shark Mediterranean stock, the Group discussed the potential use of alternative methodologies such as Ecological Risk Assessment (ERA), Productivity and Susceptibility Analysis (PSA) or Sustainability Assessment for Fishing Effect (SAFE) (ICCAT, 2023).

The assessment team, therefore, has decided to work from the assumption that blue shark in the Mediterranean is a separate stock. In the absence of a stock assessment or any stock-specific management against reference points, this species has been assessed as a secondary species using the RBF. Results of the PSA are shown in **Section 8.3.1**

BAIT SPECIES

During the site visit, the client stated that:

- Main bait: Frozen Argentine squid (*Illex argentinus*), approx. 30 kg/day; total seasonal use: 150–300 kg per boat
- Other baits: Local *Sardinella aurita*, sardines (*Sardina pilchardus*) (from the Tyrrhenian or Croatia); total seasonal use: 50 kg approx. per boat.
- Usual bait ratio: 70% squid / 30% sardine/sardinella (for small boats) and around 90% squid / 10% other baits (for the bigger boats)

Based on these quantities, the following table (**Table 15**) was produced by the Assessment team to classify these species as Primary or Secondary and main or minor:

Table 15. Classification of bait species estimated by the AT.

Common name (EN)	Species code	Common name (IT)	Scientific name	2022 kg	2023 kg	2024 kg	2022 %	2023 %	2024 %
Argentine squid	SQA	Totano	*Illex argentinus*	9930	9930	9930	4.07	2.04	1.82
Other bait (local – *S. aurita* - or from Croatia or N. Tyrrhenian Sea – *S. pilchardus*)			*Sardinella aurita,* and *Sardina pilchardus*	720	720	720	0.30	0.15	0.13

According to the above table, the Argentine squid was classified as Primary main, the sardine as Primary minor, and the round sardinella as Secondary minor (see **Table 10**).

Argentine squid

Official Technical Report No. 11/2025 of the National Institute for Fisheries Research and Development (INIDEP), based on the assessment campaign VA-02/25, estimates an abundance of 376,098 tons and 1.622 million individuals of the species.[20] These values are comparable to the historical records observed in 2006, 2012, and 2014, indicating a robust and healthy stock.

Adriatic Sardine[21]

Through the General Fisheries Commission for the Mediterranean (GFCM), this stock is subject to a minimum conservation reference size of 11cm total length, with a joint catch limit of 3,979 t for sardine and anchovy combined, as specified in Recommendation GFCM/46/2023/5[22] and in accordance with the multiannual management plan for the sustainable exploitation of small pelagic stocks in the Adriatic Sea (geographical subareas 17 and 18) (Rec. GFCM/44/2021/20[23]). These catch limits take into account the latest scientific advice from the Scientific Advisory Committee (SAC) and benchmark assessment (GFCM_SAC, 2023, 2024).

A surplus production model SPiCT was used to benchmark sardine in the Adriatic Sea (GSAs 17 and 18) for reference year 2022 (GFCM_SAC, 2023). To estimate the biomass index, a combined approach from GSAs for West and East applying a Bayesian approach (JARA) was used. All the resulting evaluated scenarios and their diagnostics indicated comparable and robust advice, with sardine in GSA 17 and 18 being considered to be at increased risk of being overexploited SSBcurr/Bmsy ratio: 0.68; SSBcurr/Bpa ratio: 1.35, SSBcurr/Blim ratio: 2.25) and in overexploitation (Fcurr/FMSY ratio: 1.44). At an updated assessment in May 2024 (GFCM_SAC, 2024), the SPiCT model was run again with an additional year (2023) of data, showing a continued decrease in biomass in the last 12 years that is not favourable for the stock status. Fishing mortality showed a sharp decrease in the last year from very high levels in the previous few years, despite a steady decrease in landing value (**Figure 13**).

[20] https://seafood.media/fis/worldnews/worldnews.asp?monthyear=4-2025&day=1&id=134119&l=s&country=&special=&ndb=1&df=1
[21] https://www.fao.org/gfcm/technical-meetings/detail/en/c/1696873/
[22] https://gfcm.sharepoint.com/:b:/g/CoC/EYbw8Utij6FOgne8vZiAmHIBltJm7XB-I6PzWs8T6YCecg
[23] https://gfcm.sharepoint.com/:b:/g/CoC/Ef9RxVoefwNApHhFQoA5MAoBmTIDTmryQVgfnJqHQdgfFA

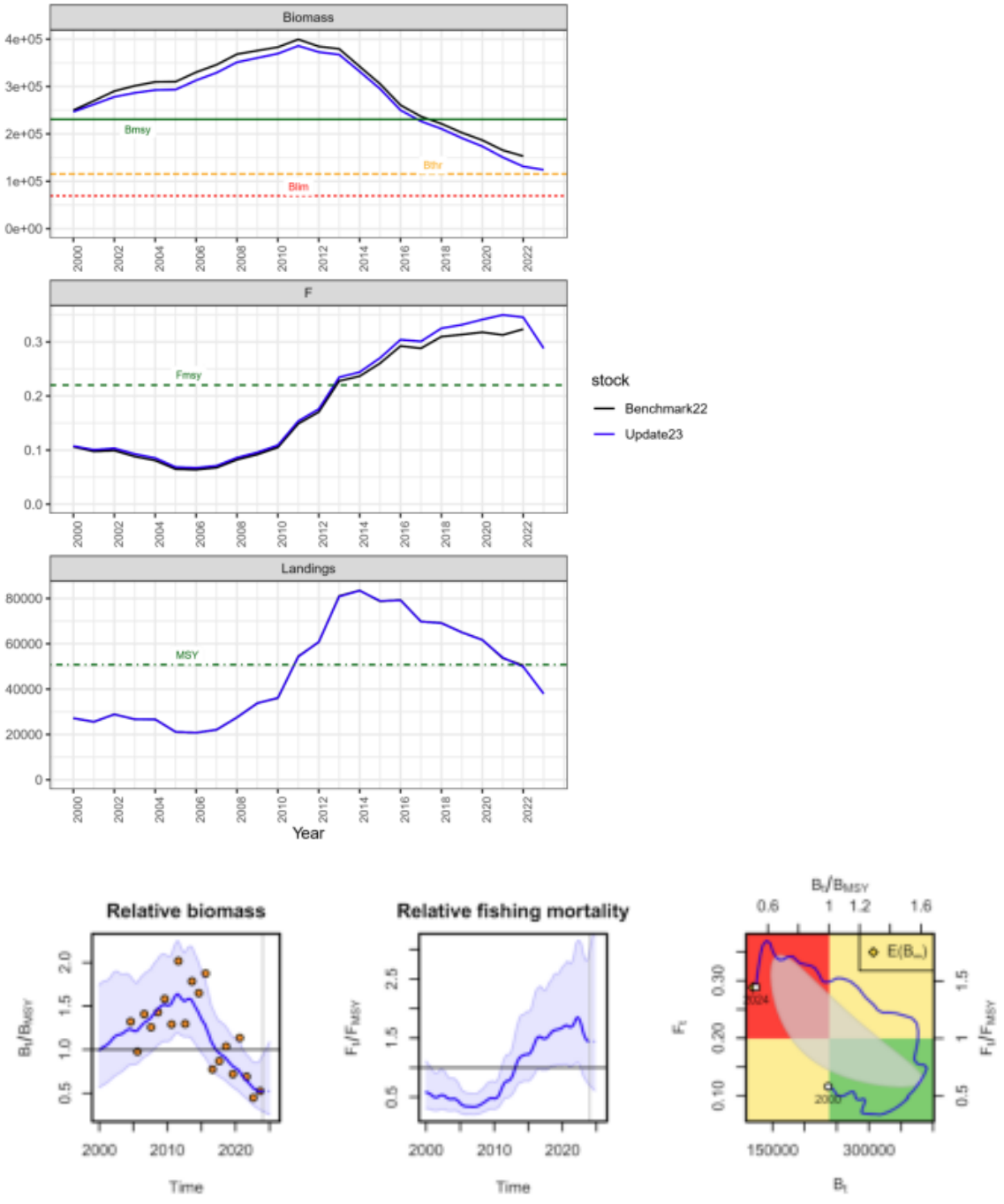


Figure 13. Sardine in the Adriatic (GSA 17/18): advice from stock assessment for the reference case, with relative indicators of stock status, relative biomass (B/B_{MSY}), relative fishing mortality (F/F_{MSY}) and Kobe plot from the sensitivity analysis. Source: GFCM_SAC (2024).

North Tyrrhenian sardine: [24]

The latest European sardine (*Sardina pilchardus*) stock assessment in GSAs 09, 10 was carried out using the Stochastic Production model in Continuous Time (SPiCT) model. The new model including GSAs 9 and 10 gave results consistent with the ones obtained in 2023 for GSA9. The stock was found "sustainably exploited" (**Figure 14**) and advised to "evaluate potential fishing opportunities". The WG stressed the need for further exploration of the priors. The use of other models like SS3 was suggested for the future to assure the comparison with the SPiCT model results.

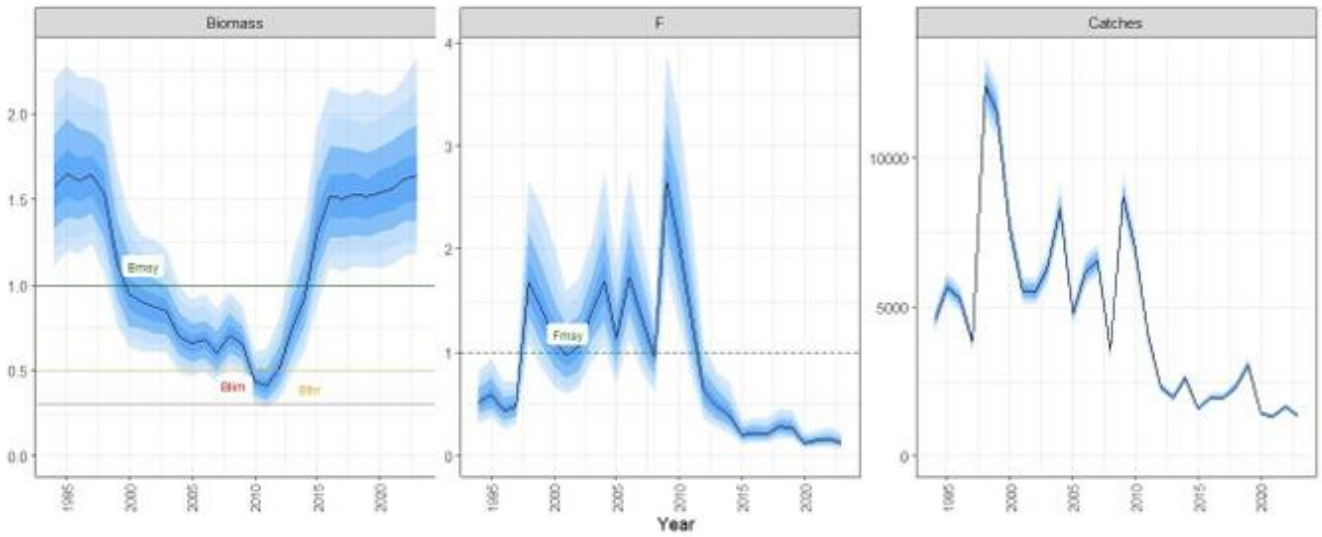


Figure 14. Sardine (*Sardina pilchardus*) in GSAs 9 and 10. Summary of assessment results, showing the estimated stock trajectories for biomass as ratio to Bmsy, fishing mortality (F) as ratio to Fmsy and total catches. Darker and lighter blue shaded areas illustrated the 80% and 90% Confidence Intervals. Source: GFCM_SAC, 2024.

Round sardinella:
Because the round sardinella is considered a minor species and as it is data-deficient a PSA analysis has been carried out for this stock, as per MSC requirements. Results of the PSA are shown in **Section 8.3.1**.

Endangered, Threatened and Protected Species
Based on the MSC v2.01 Fisheries Standard, Endangered, Threatened or Protected (ETP) species are defined as:

1. Species that are recognised by national ETP legislation;
2. Species listed in the binding international agreements given below:
   a. Appendix 1 of the Convention on International Trade in Endangered Species (CITES), unless it can be shown that the particular stock of the CITES listed species impacted by the UoA under assessment is not endangered.

[24] https://www.fao.org/gfcm/technical-meetings/detail/en/c/1696873/

b. Binding agreements concluded under the Convention on Migratory Species (CMS), including:
   i. Annex 1 of the Agreement on Conservation of Albatross and Petrels (ACAP);
   ii. Table 1 Column A of the African-Eurasian Migratory Waterbird Agreement (AEWA);
   iii. Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS);
   iv. Annex 1, Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS);
   v. Wadden Sea Seals Agreement;
   vi. Any other binding agreements that list relevant ETP species concluded under this Convention.

3. Species classified as 'out-of scope' (amphibians, reptiles, birds and mammals) that are listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE).

No ETPs are recorded in logbooks. However, according to the client and skippers interviewed during the site visit:

- *Isurus oxyrinchus* (shortfin mako shark) are rarely caught and released alive by cutting the line.
- Interactions with sea turtles are also extremely rare; and cetaceans and seabirds are absent.

Shortfin mako shark

Shortfin mako shark (*Isurus oxyrinchus*) is considered an ETP as they are included in Annex II of the SPA/BD Protocol and in ICCAT Rec. 21-09.

According to ICCAT, the 2017 and 2019 SCRS assessments concluded that there is a 90% probability of the **North Atlantic shortfin mako** stock being overfished and experiencing overfishing (ICCAT, 2019) (see **Table 16** and **Figure 15**). ICCAT Rec. 21-09[25] on the conservation of the North Atlantic stock of shortfin mako shark states that CPCs shall implement a rebuilding programme for North Atlantic shortfin mako shark starting in 2022 to end overfishing immediately and gradually achieve biomass levels sufficient to support maximum sustainable yield (MSY) by 2070 with a probability of a range of between 60 and 70% at least. As a first step in rebuilding the stock, CPCs shall implement a prohibition on retaining on board, transhipping, and landing, whole or in part, North Atlantic shortfin mako caught in association with ICCAT fisheries in 2022 and 2023. In addition, the Recommendation states that the total fishing mortality tonnage (the sum of any retention, dead discards, and post-release mortality of live discards) for this stock shall be no more than 250 tonnes until new SCRS advice is provided to the Commission. During 2022 and 2023 the SCRS and Panel 4 shall work together to test and confirm the appropriateness of the approach to determine possible retention presented in Annex 1 of Rec 21- 09, or alternative approaches, for determining the amount of permissible retention of North Atlantic shortfin mako in the future. Checking other already MSC bluefin tuna certified fisheries, they concluded that these 250 tonnes constitute a limit in the MSC context[26, 27, 28].

Table 16. North Atlantic shortfin mako stock status summary table. Source: ICCAT, 2019.

[25] https://www.iccat.int/Documents/Recs/compendiopdf-e/2021-09-e.pdf
[26] https://fisheries.msc.org/en/fisheries/sathoan-french-mediterranean-bluefin-tuna-artisanal-longline-and-handline-fishery/@@view
[27] https://fisheries.msc.org/en/fisheries/jc-mackintosh-greenstick-handline-and-fishing-rod-bluefin-tuna-fishery/@@assessments
[28] https://fisheries.msc.org/en/fisheries/usufuku-honten-northeast-atlantic-longline-bluefin-tuna-fishery/@@assessments

NORTH ATLANTIC SHORTFIN MAKO SUMMARY TABLE		
Current Yield (2023)		1,108 t[1]
Yield (2015)		3,227 t[2]
Relative Biomass	B_{2015}/B_{MSY}	0.57-0.95[3]
	B_{2015}/B_0	0.34-0.57[4]
Relative Fishing Mortality	F_{MSY}	0.015-0.056[5]
	F_{2015}/F_{MSY}	1.93-4.38[6]
Stock Status (2015)	Overfished	YES
	Overfishing	YES
Management Measures in Effect:		Rec. 21-09, Rec. 04-10, Rec. 07-06

[1] Task 1 catch as of 22 September 2024.
[2] Task 1 catch used in the stock assessment.
[3] Range obtained from 8 Bayesian production and 1 SS3 model runs. Value from SS3 is SSF/SSF_{MSY}. Low value is lowest value from 4 production model (JABBA) runs and high value is from the SS3 base run.
[4] Range obtained from 8 Bayesian production and 1 SS3 model runs. Value from SS3 is SSF/SSF_0. Low value is lowest value from 4 production model (JABBA) runs and high value is highest value from 4 production model (BSP2JAGS) runs.
[5] Range obtained from 8 Bayesian production and 1 SS3 model runs. Value from SS3 is SSF_{MSY}. Low value is lowest value from 4 production model (JABBA and BSP2JAGS) runs and high value is from the SS3 base run.
[6] Range obtained from 8 Bayesian production and 1 SS3 model runs. Values from the production models are H (harvest rates). Low value is lowest value from 4 production model (BSP2JAGS) runs and high value is from the SS3 base run and highest value from 4 production model (JABBA) runs.

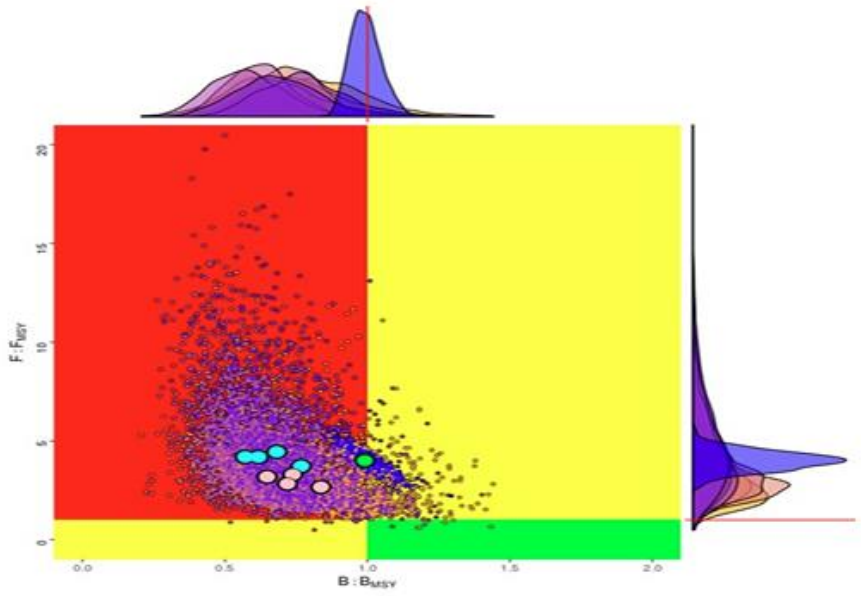


Figure 15. Stock status (2015) of North Atlantic shortfin makos based on Bayesian production models (4 BSP2JAGS and 4 JABBA runs) and 1 length-based, age-structured model (SS3). The clouds of points are the bootstrap estimates for all model runs showing uncertainty around the median point estimate for each of nine model formulations (BSP2JAGS: solid pink circles; JABBA: solid cyan circles; SS3: solid green circle). The marginal density plots shown are the frequency distributions of the bootstrap estimates for each model with respect to relative biomass (top) and relative fishing mortality (right). The red lines are the benchmark levels (ratios equal to 1). Source: ICCAT, 2019.

Sea turtles:

Two species of turtle nest in the Mediterranean, the Loggerhead turtle (*Caretta caretta*) and the Green turtle (*Chelonia mydas*). The Leatherback turtle (*Dermochelys coriacea*) is recorded fairly regularly in this sea, while the other two species (*Eretmochelys imbricata*, *Lepidochelys kempii*) are very rarely encountered.[29]

Marine turtles Regional Management Units (RMUs)[30] were updated in 2023 in a paper by Wallace et al., 2023. A total of 48 RMUs for 6 of 7 marine turtle species and 166 distinct genetic stocks for all 7 species are presented herein. The boundaries, originally published in 2010, incorporate expert knowledge and expanded and improved data and are therefore more refined and more accurately represent sea turtle populations. RMUs were developed using nesting sites, satellite telemetry, genetic stocks (MUs), and expert knowledge to fill the need for a globally consistent, biologically relevant framework for defining marine turtle populations below the species level and above individual stocks or rookeries. RMUs have allowed conservation efforts to focus population evaluations and conservation action at a more useful scale than the species level, which, for migratory, geographically widespread, long-lived animals such as marine turtles caused a slew of complications and debates. The IUCN has adopted RMUs for red list assessments and has been cited widely within and beyond the marine turtle literature.

The fishery under assessment overlaps with the RMUs of three of the species abovementioned, i.e., Loggerhead turtle (*Caretta caretta*), the Green turtle (*Chelonia mydas*), and the Leatherback turtle (*Dermochelys coriacea*) (**Figure 16**), indicating interactions are likely.

[29] https://www.rac-spa.org/sites/default/files/action_plans/marine_turtles_ap_fr_en.pdf
[30] https://www.iucn-mtsg.org/regional-management-units

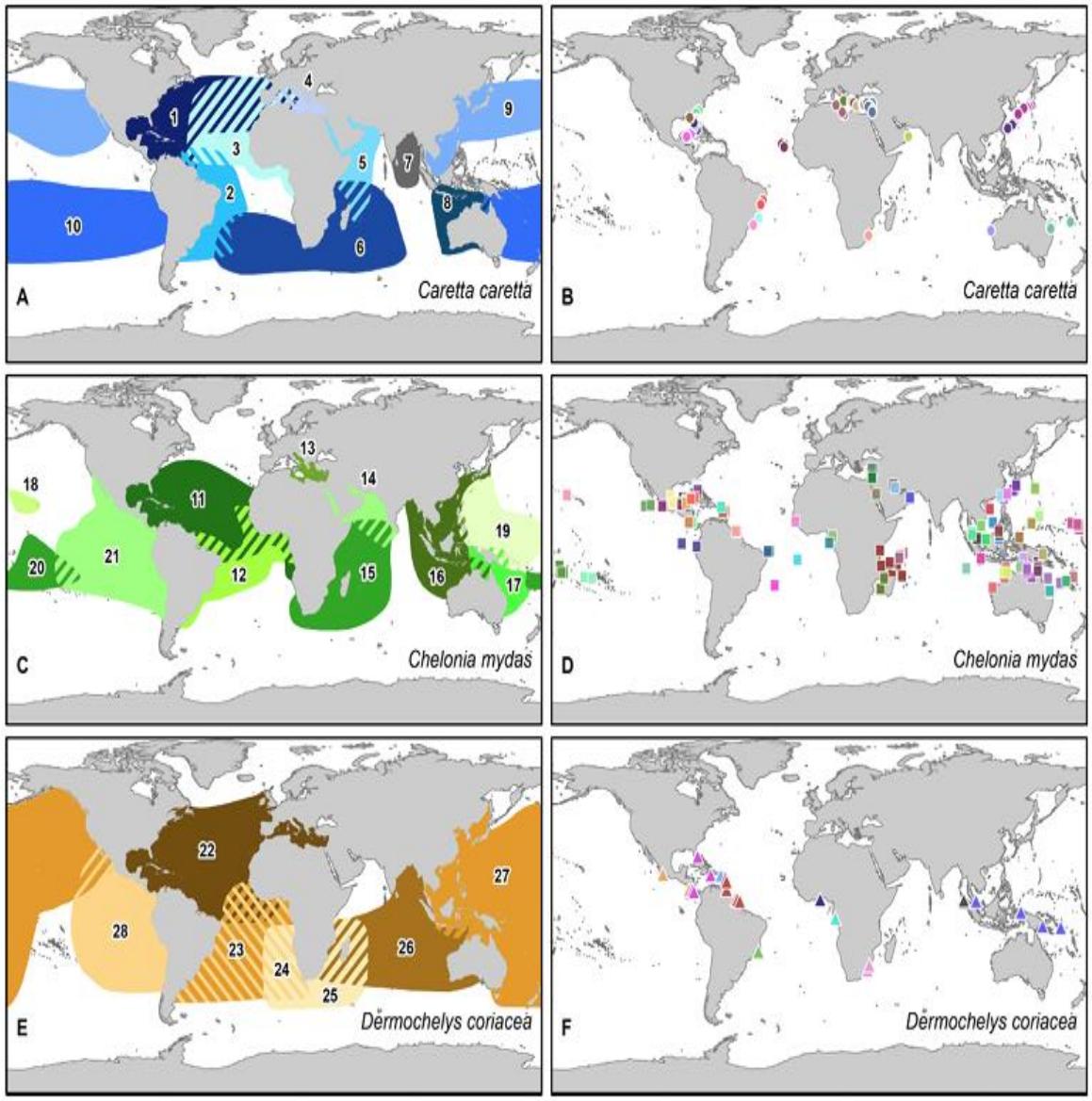


Figure 16. Regional management units (RMUs) and (B,D,F,H,J) mtDNA genetic stocks for marine turtles. Species RMUs are displayed in different color series to easily discriminate between species. Diagonal lines represent areas of overlap between more than one RMU. Genetic stocks are presented using a repeating color palette to allow discrimination between adjacent stocks, as there were too many to label individually. Genetic stocks of different species are displayed as different shapes to facilitate discrimination between species. Assumed RMUs and genetically sampled sites unassigned to stocks are displayed in shades of grey. (A) Loggerhead turtle *Caretta caretta* RMUs. 1: Northwest Atlantic, 2: Southwest Atlantic, 3: Northeast Atlantic, 4: Mediterranean, 5: Northwest Indian, 6: Southwest Indian, 7: Northeast Indian (assumed), 8: Southeast Indian, 9: North Pacific, 10: South Pacific. (B) Loggerhead turtle genetic stocks (n = 26). (C) Green turtle *Chelonia mydas* RMUs. 11: North Atlantic, 12: South Atlantic, 13: Mediterranean, 14: Northwest Indian, 15: Southwest Indian, 16: East Indian and Southeast Asia, 17: Southwest Pacific, 18: North Central Pacific, 19: West Central Pacific, 20: South Central Pacific, 21: East Pacific. (D) Green turtle genetic stocks (n = 73, 1 unassigned). (E) Leatherback turtle *Dermochelys coriacea* RMUs. 22: Northwest Atlantic, 23: Southwest Atlantic, 24: Southeast Atlantic, 25: Southwest Indian, 26: Northeast Indian, 27: West Pacific, 28: East Pacific. (F) Leatherback turtle genetic stocks (M n = 9, 2 unassigned). Source: Wallace et al., 2023.

Habitat

At the site visit, the client provided the assessment team with a clear description of the Gear:

- Hook size: No. 4 (6 cm)
- Branch line: 200 diameter, 10 fathoms (approx. 4 meters)
- Mainline: 230 diameter
- Gear typically fishes at depths between 50 and 200 meters never touching the seabed
- 500 hooks deployed over 10 nautical miles, with radar buoys for detection

Therefore, the Bluefin tuna longline fishery is strictly a pelagic fishery and does not have habitat effects of any kind as the gear type employed does not come into contact with the seabed. For the same reason, no habitat management is required specific to this fishery.

The commonly encountered habitat is the water column (pelagic habitat - **Table 17**). There are no VMEs or minor habitats.

Table 17. Habitats Scoring elements

Component	Scoring elements	Designation	Data-deficient
Habitats	Pelagic habitat	Commonly encountered	No

Ecosystem

Piroddi et al. (2022) developed a spatial–temporal Ecopath with Ecosim (EwE)[31] model for the Mediterranean Sea for the period 1995–2016 to identify spatial patterns and mean temporal changes of marine biodiversity, community biomasses and trophic indices in the region. The spatial biomass distribution of all the functional groups in the model (from planktonic-habitat groups to invertebrates, pelagic and demersal fish, sea turtles, marine mammals and marine birds) was hindcasted, for the 1995–2016 period, considering their ecological niche and their trophic interactions with prey and predators (**Figure 17**). The study constitutes the first attempt to build a coupled spatial–temporal hydrodynamic biogeochemical (GETM-MedERGOM) and full food-web model (EwE) for the whole Mediterranean Sea, using multiple trophic levels (spanning from phytoplankton to marine mammals) over a long timespan (decades) and spatial scale (~8×8 km). Unless otherwise indicated, the following findings were extracted from Piroddi et al. (2022):

[31] Ecopath with Ecosim (EwE) is a free ecological/ecosystem modeling software suite. EwE has three main components: Ecopath – a static, mass-balanced snapshot of the system; Ecosim – a time dynamic simulation module for policy exploration; and Ecospace – a spatial and temporal dynamic module primarily designed for exploring impact and placement of protected areas (https://ecopath.org/).

- Estimated spatial patterns were heterogeneous among the different functional groups of the Mediterranean Sea: for example, top predators like cetaceans, tunas or swordfish, being highly mobile, were predicted to distribute widely across the basin as well as multispecies groups such as mesopelagic fish, mesopelagic cephalopods, bathy-demersal fish and plankton (e.g. zooplankton and jellyfish). For the majority of the other functional groups, which included demersal and pelagic fish, invertebrates and habitat-formers (e.g., seagrass), the model predicted a distribution mainly along the Mediterranean coastline and continental shelf.

- The model confirms the importance of coasts and shelves in supporting high marine biodiversity, total biomass of commercial and non-commercial species and important ecosystem services like fisheries in the Mediterranean Sea. Coastal and shelf areas, due to high levels of primary production and specific physical (e.g. depth) and environmental (e.g. temperature, salinity) properties, are sites where most of the marine biodiversity and species biomass are confined and where most of human interest and exploitation reside.

- The model shows that the Western Mediterranean Sea is the area with the highest total biomass and trophic level of the communities, mostly due to high levels of production (**Figure 18**); decreasing gradients of biomass were instead observed towards the mostly oligotrophic east side of the basin, following the west to east pattern, as previously reported by other studies (see Piroddi et al. (2022) and references therein). These patterns confirm the important role of bottom-up processes (primary and secondary production) in driving biomass distribution of high-trophic-level organisms in the Mediterranean Sea.

- In terms of catches and discards, the Western Mediterranean and the Adriatic Seas were the two sub-regions with the highest level of marine resources exploitation and removals, particularly along the coasts and the continental shelf. Trophic level of the catches evidenced catches of higher TL (above 3.5) species (e.g. tunas) in offshore waters and catches with a lower TL (below 3.5) along the coasts and the continental shelf.

- As shown in previous studies (see Piroddi et al. (2022) and references therein), the Mediterranean biodiversity and its marine resources continue to show signs of deterioration. In particular, coasts (except if close to estuaries) and shelves seem to be the most negatively affected areas by changes in climate (e.g. temperature, salinity), environment (e.g. nutrients, primary production) and fishing pressure as compared to offshore and deeper waters. Coastal areas, being at the interface between land and sea, are subjected to a variety of anthropogenic pressures, e.g., eutrophication, fishing pressure, pollutants, that, if acting synergistically, may worsen the decrease in marine resources/biodiversity due to the spatial heterogeneity of these ecosystems. However, certain estuaries seem to play an important role in maintaining high level of biomass and biodiversity in the surrounding environment. In some areas, inorganic nutrients from rivers run-off are responsible for a large fraction of the pelagic primary production, possibly impacting also the biomass levels of high-trophic-level marine organisms.

- Conversely, patterns of biomass increase in offshore-deeper waters were observed for composite biomass indicators, like the commercial biomass (CB), demersal/pelagic biomass (D/P), and slightly for total biomass (TB). These could be traced back to increases in the biomass of the commercially important bluefin tuna (for CB and TB), and also to increases in biomass of non-commercially important groups like the mesopelagic (for TB) and bathy-demersal fishes (for D/P and TB). Evidence that showed an increase in the biomasses of these functional groups has been observed in other studies, which pointed to changes in environmental conditions and a reduction in fishing effort for bluefin tuna, and to environmental

conditions, low fishing pressure, removals of predators and/or competitors for mesopelagic and bathy-demersal fishes. However, caution should be taken with these results as most of the information (e.g. distribution and biomass) available for these groups at regional and spatial and temporal scales comes from modelling applications. The validation of these outputs is not trivial and more effort should be put in place to reduce this knowledge gap. Furthermore, the increases in offshore catches and discards, mainly in the Western Mediterranean and Eastern Seas, could also be associated with a redistribution of fishing effort into offshore waters to counteract the decrease in resources along the coast and shelf areas.

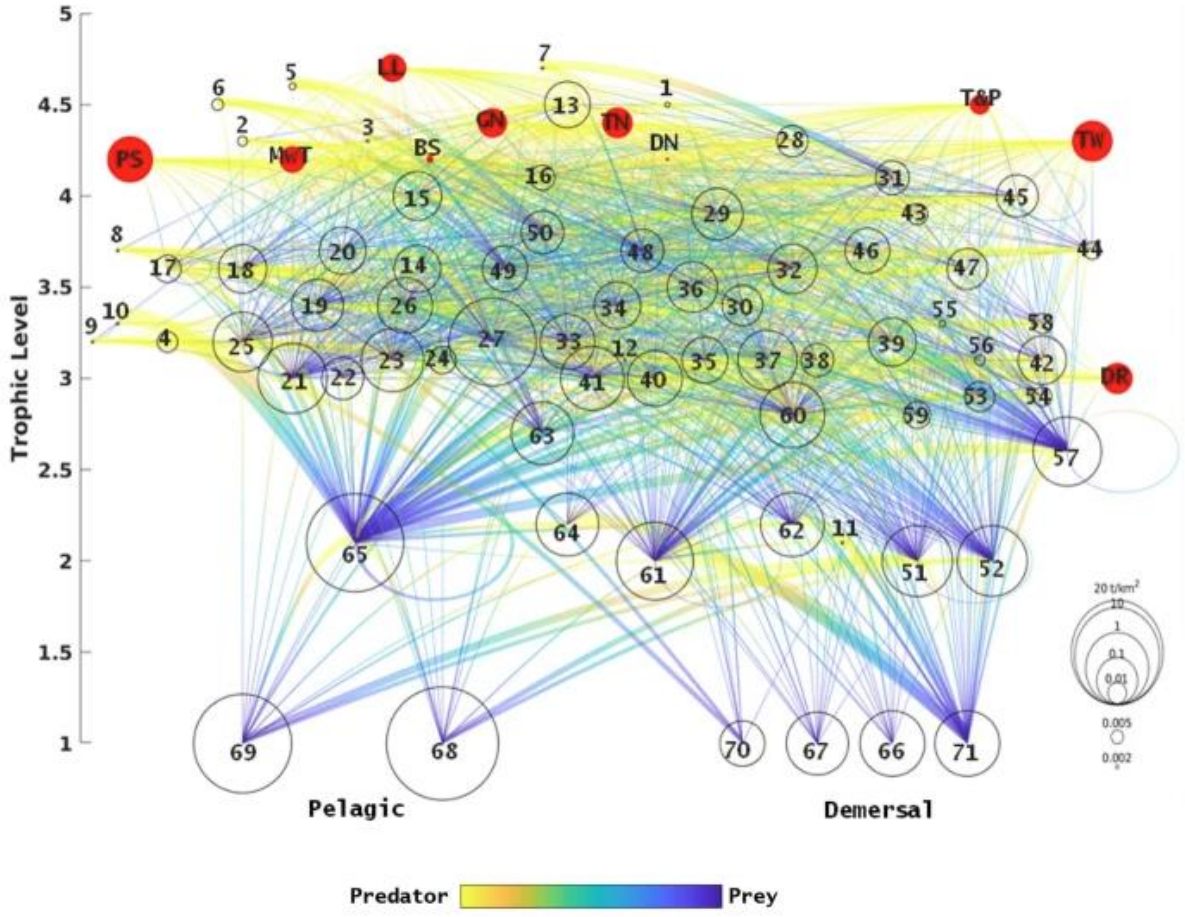


Figure 17. Flow diagram of the Mediterranean Sea ecosystem (1995 period). Each functional group is shown as a bubble and its size is proportional to the log of its biomass. The functional groups are ordered by their trophic levels (y-axis) and their preferred habitat (Pelagic vs Demersal). Predator–prey relationships are expressed with a gradient yellow (predator)-to blue (prey) line. Red bubbles represent fishing fleets (*LL* Longline, *PS* Purse Seine, *MwT* Midwater Trawl, *BS* Beach Seine, *GN* Gillnet, *TN* Trammel net, *DN* Driftnet, *T&P* Traps and pods, *TW* Trawler, *DR* Dredge). Numbers refer to functional groups (see supplementary Table S2 in Piroddi et al. (2022) for the full name list). The updated model represents the entire Mediterranean basin and consists of 71 functional groups, ranging from phytoplankton and invertebrates to top predator species, and up to 10 different types of fishing gears divided in the main Mediterranean MSFD divisions (Western Mediterranean Sea (W); Adriatic Sea (A); Ionian and Central Mediterranean Sea (I); and Aegean Sea and Levantine Sea (E)). Source: Piroddi et al. (2022).

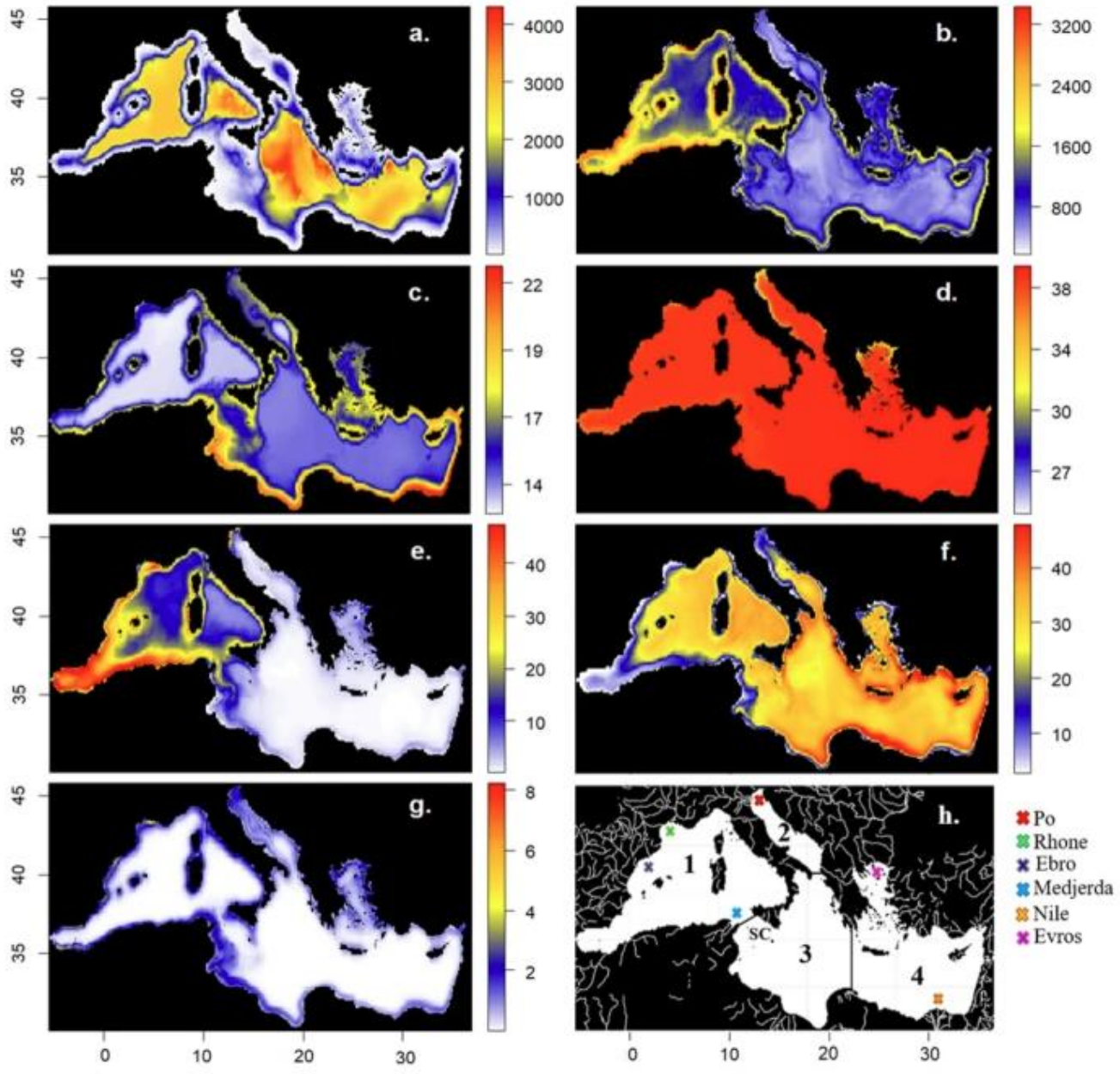


Figure 18. The hydrodynamic-biogeochemical model outputs: (a) bathymetry (m); (b) primary production (PP, t/km2/year); (c) temperature (°C); (d) salinity (psu); (e) large phytoplankton biomass (t/km2); (f) small phytoplankton biomass (t/km2); (g) detritus biomass (t/km2) used to drive the Mediterranean Sea Ecospace module. Maps 2b–2g are presented as mean for the period 1995–2016 and for the entire water column. Map 4h shows the river loads (white lines and coloured crosses) included in GETM-MedERGOM, the Sicilian Channel (SC), and the four main divisions of the Mediterranean Sea accordingly to the European MSFD (Western Mediterranean Sea (1); Adriatic Sea (2); Ionian and Central Mediterranean Sea (3); Aegean and Levantine Sea (4)) to facilitate the visualization of main rivers and areas mentioned in text. Source: Piroddi et al. (2022).

In Europe, the adoption of ecosystem-based management (EBM) is embedded in four main policy instruments for marine governance (Piroddi et al., 2022):

- The Marine Strategy Framework Directive (MSFD; EU (2008)), which aims to achieve or maintain 'Good Environmental Status' (GES) of the European marine waters;
- The EU Biodiversity Strategy to 2030 (EU, 2020, 2021), which aims at halting the loss of biodiversity and ecosystem services by protecting at least 30% of the sea and establishing a network of marine protected areas (MPAs);
- The Common Fishery Policy (CFP, EU (2013)), which aims, among other targets, at moving from the traditional single stock management towards an Ecosystem-Based Fisheries Management (EBFM); and
- The Maritime Spatial Planning Directive (MSP, EU (2014)), which aims at promoting the sustainable growth of maritime economies, the sustainable development of marine areas and sustainable use of marine resources.

When developing their marine strategies, Member States are required to coordinate with each other and third countries though existing regional cooperation structures. In the Mediterranean, the *Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean* was adopted in 1995 and builds on UNEP's Mediterranean Action Plan (MAP) established in 1975. The aim is to protect the Mediterranean marine and coastal environment while boosting regional and national plans to achieve sustainable development (the latest Conference of the Parties was held in November 2024 - COP29). The objectives of the current MAP Medium-Term Strategy (MTS) 2022-2027[32] are as follows:

- The MTS 2022-2027 aims at contributing to the long-term goals and objectives of the Barcelona Convention including Article 4, General Obligations:
    - "(1)… to prevent, abate, combat and to the fullest possible extent eliminate pollution of the Mediterranean Sea Area and to protect and enhance the marine environment in that Area so as to contribute towards its sustainable development" and
    - "(2)… to pursue the protection of the marine environment and the natural resources of the Mediterranean Sea Area as an integral part of the development process, meeting the needs of present and future generations in an equitable manner".

- The Long-Term Goals to which the MTS 2022-2027 is contributing are *the achievement and maintenance of Good Environmental Status (GES) of the Mediterranean Sea and Coast, achieving sustainable development through the SDGs, and living in harmony with nature*.

- The MTS 2022-2027 Overall Objectives are:
    - To drive transformational change in enhancing the impact of the "delivery as one" of the MAP-Barcelona Convention system, and its contribution to the region;
    - To ensure that the Good Environmental Status (GES) of the Mediterranean Sea and Coast, the relevant SDGs and their targets, and the post-2020 global biodiversity goals and targets are achieved, through concrete actions to effectively manage and reduce threats and enhance marine and coastal resources;
    - To contribute to strengthening Mediterranean solidarity and peoples' prosperity; and
    - To contribute to the Building Back Better approach of the "*UN framework for the immediate socio-economic response to COVID-19*" and towards a "green recovery" of the Mediterranean by

[32] https://spa-rac.org/en/decision/download/1574/unep-map-medium-term-strategy-2022-2027?type=en#:~:text=The%202022%2D2027%20Medium%2DTerm,development%20of%20the%20coastal%20regions.

supporting new and sustainable business models, enabling a just and green transition to a nature-based solutions and circular economy.

One of the main areas of work is PROGRAMME 2: TOWARDS HEALTHY MEDITERRANEAN ECOSYSTEMS AND ENHANCED BIODIVERSITY. Programme 2 includes the following strategic objectives linked to the Specially Protected Areas and Biodiversity, and ICZM Protocols:

1. To protect, preserve and manage in a sustainable and environmentally sound way areas of particular natural or cultural value notably by the establishment of specially protected areas in areas within and beyond national jurisdiction as provided for/in line with Article 5 of the Biodiversity and SPA Protocol of the Barcelona Convention;
2. To protect, preserve and manage threatened or endangered species of flora and fauna and their habitats; and
3. To ensure preservation of the integrity of coastal and marine ecosystems, landscapes and geomorphology.

Relevant Ecological Objectives:

- EO 1. Biological diversity is maintained or enhanced: the quality and occurrence of coastal and marine habitats and the distribution and abundance of coastal and marine species are in line with prevailing physiographic, hydrographic, geographic, and climatic conditions;
- EO 2. Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem;
- EO 3. Populations of selected commercially exploited fish and shellfish are within biologically safe limits, exhibiting a population age and size distribution that is indicative of a healthy stock;
- EO 4. Alterations to components of marine food webs caused by resource extraction or human induced environmental changes do not have long-term adverse effects on food web dynamics and related viability; and
- EO 6. Sea-floor integrity is maintained, especially in priority benthic habitats;
- EO 8. The natural dynamics of coastal areas are maintained and coastal ecosystems and landscapes are preserved; and
- Contribution to all other EO's in particular EO5, EO9, EO10, and EO11.

The 2022-2027 MTS will achieve the following outcomes and associated Indicative targets/Indicators.

Outcome 2.1. Ecosystem resilience improved through restoration of those with best regeneration potential.
Outcome 2.2. Comprehensive, coherent Mediterranean network of well-managed MPAs and OECMs in place, expanded, effective and sustainable.
Outcome 2.3. Mediterranean endangered and threatened species and key habitats in favourable status of conservation.
Outcome 2.4. Non-indigenous species introductions minimized and introduction pathways under control.

Idicators	Proposed targets
1. Number of regional regulatory and policy instruments on biodiversity and ecosystems conservation developed/updated and implemented.	9
2. Number of new/updated national policies, strategies, legislation or action plans for the implementation of regional instruments, including restoration actions.	23
3. Number of countries that Integrate common approaches to mainstreaming biodiversity into development and sectoral plans, policies and processes.	At least 8
4. A) Number of protected areas (MPA, SPAMI and other effective area-based conservation measures) designated; management plans developed and implemented; MPA monitoring data reported; B) % of Mediterranean Sea under protection measures.	A) At least 2,000 areabased conservation measures (baseline1,137); At least 1 set of data on EO1/EO2 CIs by CPs in selected MPAs; B) 20% (baseline 9.3%)
5. Progress towards GES achievement/maintenance on biodiversity and NIS cluster at commonly agreed assessment scales.	At least 6 assessments related to EO1, EO2 and EO3 at national level At least 3 countries with national bycatch data and its impact on biodiversity assessed
6. Number of measures and actions developed and/or implemented on biodiversity conservation, restoration, and monitoring implemented, including on MPA/SPAMI management and monitoring.	At least 21
7. Number of measures and actions developed and/or implemented to prevent, manage and control NIS and in particular invasive non-indigenous species and their introduction pathways.	At least 1 measure and 1 action are developed and implemented every biennium (3 actions and 3 measures in the 6 year time period of the MTS)

The scope of work carried out in the context of the MAP includes the Regional Activity Centre for Specially Protected Areas (RAC/SPA) whose responsibility is: *"facilitation and promotion of research development to bridge knowledge gaps on marine and coastal biodiversity; contribution to inventorying, mapping and monitoring Mediterranean marine and coastal biodiversity and Specially Protected Areas; assessment and mitigation of the impact of threats on marine and coastal biodiversity, including from unsustainable fisheries practices."*[33] The RAC/SPA 1995 protocol[34], most recently updated in 2017 (SPA/BD_Protocol, 2017), requires each CP to:

- Take the necessary measures to: (a) protect, preserve and manage in a sustainable and environmentally sound way areas of particular natural or cultural value, notably by the establishment of specially protected areas; (b) protect, preserve and manage threatened or endangered species of flora and fauna;
- Cooperate, directly or through the competent international organizations, in the conservation and sustainable use of biological diversity in the area to which this Protocol applies;

[33] https://www.unep.org/unepmap/what-we-do/monitoring-and-assessments
[34] https://www.rac-spa.org/sites/default/files/protocole_aspdb/protocol_eng.pdf

- Identify and compile inventories of the components of biological diversity important for its conservation and sustainable use;
- Adopt strategies, plans and programmes for the conservation of biological diversity and the sustainable use of marine and coastal biological resources and integrate them into their relevant sectoral and intersectoral policies;
- Monitor the components of biological diversity referred to in paragraph 3 and identify processes and categories of activities which have or are likely to have a significant adverse impact on the conservation and sustainable use of biological diversity, and monitor their effects; and
- Apply the measures provided for in this Protocol without prejudice to the sovereignty or the jurisdiction of other Parties or other States. Any measures taken by a Party to enforce these measures shall be in accordance with international law.

Action Plans, programmes and strategies adopted within the framework of SPA/DB Protocol include *inter alia*[35]:

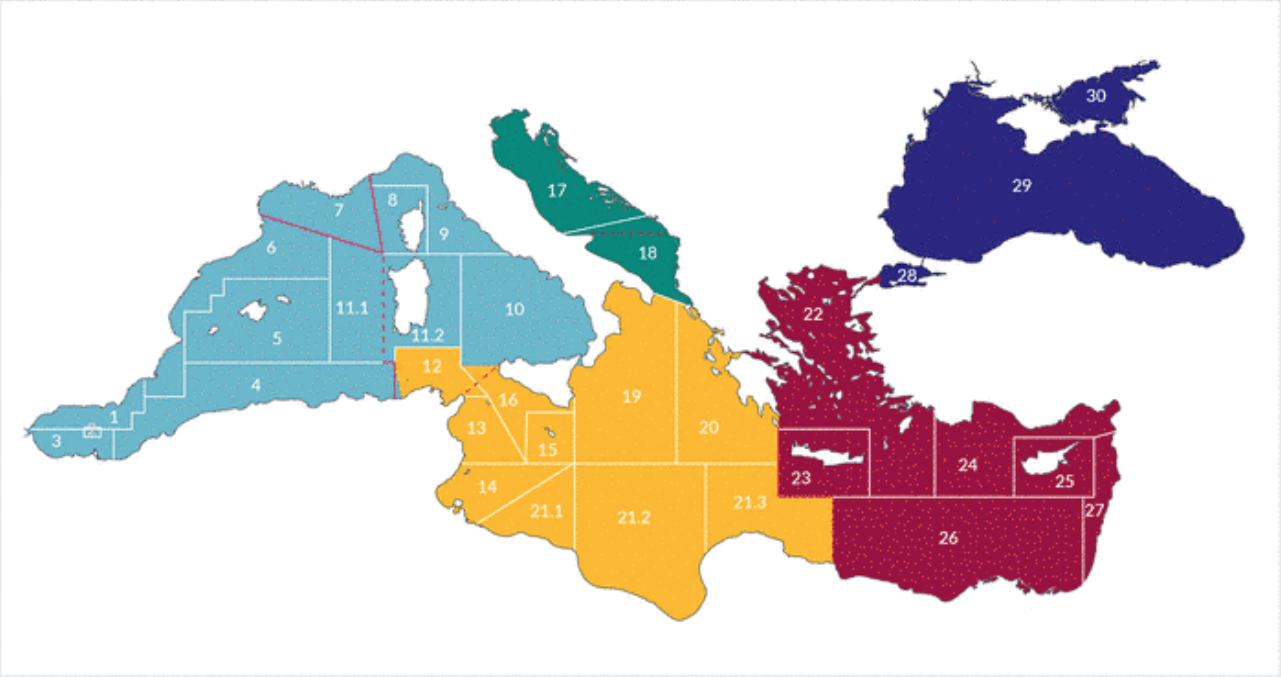
- Action Plan for the conservation of marine turtles;
- Action Plan for the conservation of cetaceans;
- Action Plan for the conservation of bird species registered in annex II of the SPA/BD Protocol; and
- Action Plan for the conservation of cartilaginous fishes (Chondrichtyans) in the Mediterranean Sea.

In 2008, the Contracting Parties to the Barcelona Convention adopted Decision IG.17/627[36], which sets out the Ecosystem Approach Roadmap to achieving the Good Environmental Status (GES) of the Mediterranean Sea and Coast. Decision IG.22/728[37] sets out the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast (IMAP) and is based on a six-year cycle and on data deriving from the implementation of integrated national monitoring and assessment programmes by the Contracting Parties. IMAP encompasses 11 Ecological Objectives and related targets covering pollution and marine litter, biodiversity, non-indigenous species, coastal ecosystems, and hydrography. Monitoring is ensured through 27 mandatory and candidate Common Indicators (CI). The latest Mediterranean Quality Status Report (MED QSR) was issued in 2023 (UNEP/MED, 2023[38]).

Finally, The RAC/SPA 1995 protocol has enabled the establishment of Specially Protected Areas of Mediterranean Importance (SPAMI) for the protection of areas of particular natural or cultural value and the protection, preservation and management of threatened or endangered species of flora and fauna[39]. Eight of these SPAMIs are located in the UoA area.

The UoA is comprised in the Western and Central Mediterranean and Adriatic Sea ecosystems. In particular, in the Southern and Central Tyrrhenian Sea (GSA 10) and in Sardinia (GSA 11) (in the Western basin), in the Western Ionian Sea (GSA 19) (in the Central Mediterranean) and the Adriatic Sea (GSA 17 and 18) (see **Figure 19**).

[35] https://www.rac-spa.org/publications#en4
[36] https://wedocs.unep.org/bitstream/handle/20.500.11822/7287/08ig17_10_annex5_17_06_eng.pdf
[37] https://wedocs.unep.org/bitstream/handle/20.500.11822/6090/16ig22_28_22_07_eng.pdf
[38] https://www.unep.org/resources/annual-report/mediterranean-quality-status-report-2023-med-qsr
[39] https://www.rac-spa.org/sites/default/files/doc_spamis/v3.png



FAO statistical divisions GFCM geographical subareas (GSAs)

GFCM subregions

Western Mediterranean Central Mediterranean Adriatic Sea Eastern Mediterranean Black Sea

01. Northern Alboran Sea	07. Gulf of Lion	13. Gulf of Hammamet	19. Western Ionian Sea	25. Cyprus
02. Alboran Island	08. Corsica	14. Gulf of Gabès	20. Eastern Ionian Sea	26. Southern Levant Sea
03. Southern Alboran Sea	09. Ligurian Sea and northern Tyrrhenian Sea	15. Malta	21.1. Southwestern Ionian Sea 21.2. Southern Ionian Sea 21.3. Southeastern Ionian Sea	27. Eastern Levant Sea
04. Algeria	10. Southern and central Tyrrhenian Sea	16. Southern Sicily	22. Aegean Sea	28. Marmara Sea
05. Balearic Islands	11.1. Western Sardinia 11.2. Eastern Sardinia	17. Northern Adriatic Sea	23. Crete	29. Black Sea
06. Northern Spain	12. Northern Tunisia	18. Southern Adriatic Sea	24. Northern Levant Sea	30. Azov Sea

Figure 19. Geographical Sub-Areas (GSAs) by the General Fisheries Commission for the Mediterranean (GFCM). Source: https://www.fao.org/gfcm/data/maps/gsas/en/

The Mediterranean Sea is a marine biodiversity hotspot. Though it only covers 0.3% of the world's ocean volume, it is one of the major reservoirs of biodiversity, with more than 17,000 species inventoried. This corresponds to 4-18% (according to taxonomic group) of the world's known marine species. The Mediterranean coasts are under constant and growing human pressure. Habitat degradation, overfishing, pollution, eutrophication, overexploitation of resources, shipping, invasive species and climate change have directly led to the degradation

of the marine and coastal biodiversity.[40] To cope with the complexity and size of the pressure on marine and coastal biological diversity, the Contracting Parties to the Barcelona Convention agreed on the need for a concerted strategy to further the implementation of the Protocol concerning Specially Protected Areas and Biological Diversity (SPA/BD Protocol). Therefore, SPA/RAC developed the Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region (SAPBIO), which was adopted in November 2003 in Catania by the Contracting Parties to the Barcelona Convention. Based on the recommendations of the evaluation of the implementation of the SAPBIO during the period 2004-2018, the COP21 of the Barcelona Convention COP21 requested the Secretariat to prepare in 2020-2021 the Post-2020 Strategic Action Programme for the Conservation of Biological Diversity and Sustainable Management of Natural Resources in the Mediterranean Region (Post-2020 SAPBIO), aligned with the Sustainable Development Goals and harmonised with the CBD Post-2020 Global Biodiversity Framework and other relevant global and regional frameworks.[4] Through its Goals, the Post-2020 SAPBIO aims at starting, by 2030, to reverse the loss of biodiversity and put the Mediterranean marine and coastal biodiversity on the path to recovery for the benefit of nature and people. Its desired vision is adapted to the Mediterranean context from the Post-2020 Global Biodiversity Framework: "By 2050, marine and coastal biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy Mediterranean Sea and coast, and delivering benefits essential for nature and people".

Consistently with the MSFD Mediterranean sub-regions, the post-2020 SAPBIO identifies four sub-regions (**Figure 20**) within the Mediterranean for focused conservation efforts: the Western Mediterranean, the Ionian and Central Mediterranean, the Adriatic Sea, and the Aegean and Levantine Seas.

Figure 20. Post-2020 SAPBIO sub-regions within the Mediterranean Sea. Source: https://www.rac-spa.org/node/2016.

[40] https://www.rac-spa.org/sapbio#:~:text=Therefore%2C%20SPA/RAC%20developed%20the,at%20national%20and%20regional%20levels.

As already stated by Royer et al (2004)[41], Druon et al (2011)[42], Damalas and Megalofonou (2012)[43], or Carruthers et al (2018)[44], the physical and oceanographic features can influence bluefin tuna distribution and behaviour in these basins.

For our UoA, only the three first subregions are relevant, i.e., the Western Mediterranean, the Ionian and Central Mediterranean, the Adriatic Sea.

Western Mediterranean:
The Western Mediterranean ecoregion, a complex region encompassing the Alboran Sea, Algerian-Provencal Basin, and Tyrrhenian Sea, is characterized by diverse marine and coastal ecosystems. It faces numerous threats, including overfishing, pollution, and climate change impacts, which affect its unique biodiversity and ecosystem services. Efforts are underway to implement ecosystem-based management approaches and promote sustainable practices to mitigate these pressures.

In particular, the Tyrrhenian Sea (GSA 10), a basin within the Western Mediterranean, is a large area between the Italian peninsula and the east coasts of southern Corsica and Sardinia. The area is characterised by habitats that include mostly pelagic waters over an abyssal plain scattered with ridges and seamounts, with the Vavilov and Marsili basins being prominent features. This sea hosts delicate coastal and offshore ecosystems, and is characterised by rich hydrodynamics, driven by interactions between the local forcing, the topography, the bathymetry of the area, and exchanges with adjacent sub-basins (Iacono et al. 2021). The northern part of the area includes a portion of the Tuscan Archipelago National Park, and the North-western Mediterranean Pelagic Ecosystem Ecologically or Biologically Significant Marine Area (CBD 2023)[45]. It boasts diverse ecosystems ranging from deep-sea environments to coastal areas. These ecosystems are shaped by unique geological features, complex hydrodynamics, and human activities. Key habitats include *Posidonia oceanica* seagrass meadows, and deep-sea coral reefs. Unique deep-sea coral communities, dominated by gorgonians (*Callogorgia verticillata*, *Paramuricea clavata*, *Paramuricea macrospina*, *Bebryce mollis*, *Villogorgia bebrycoides*, *Corallium rubrum*, and *Leptogorgia sarmentosa*), and antipatharians (*Antipathella subpinnata*, *Antipathes dichotoma* and *Parantipathes larix*), exist on rocky shoals in the South Tyrrhenian Sea interspersed in a muddy bottom (Bo et al., 2012). The Southern Tyrrhenian area supports a unique food web with strong trophic links between cephalopods and mesopelagic fishes[46].

Sardinia (GSA 11) boasts a rich and diverse marine ecosystem, characterized by numerous Marine Protected Areas (MPAs) and a variety of habitats. The island's waters are home to a wide array of marine life, including dolphins, whales, turtles, and various fish species. *Posidonia* seagrass meadows and coralligenous reefs are also key components of the ecosystem. Sardinia has several MPAs, such as Capo Carbonara, Asinara, Tavolara-Punta Coda Cavallo[47], and others, which are designed to protect specific areas and their unique marine life.

Ionian and Central Mediterranean[48]

[41] https://www.int-res.com/articles/meps2004/269/m269p249.pdf
[42] https://www.int-res.com/abstracts/meps/v439/meps09321
[43] https://scientiamarina.revistas.csic.es/index.php/scientiamarina/article/view/1413/0#:~:text=GAM%20analyses%20were%20conducted%20by,in%20the%20eastern%20Mediterranean%20region.
[44] https://www.iccat.int/Documents/CVSP/CV074_2017/n_6/CV074063082.pdf
[45] https://sharkrayareas.org/wp-content/uploads/isra-factsheets/03MedBlackSeas/Tyrrhenian-03MedBlackSeas.pdf
[46] https://link.springer.com/chapter/10.1007/978-88-470-2105-1_25
[47] https://effective-euproject.eu/wp-content/uploads/2024/02/EFFECTIVE_FACTSHEET_PILOT3.pdf
[48] https://www.rac-spa.org/sites/default/files/doc_spabio/ionian_central.pdf

The Ionian Sea and Central Mediterranean sub-region is a critical biogeographical section representing a transitional area between the Western and Aegean-Levantine sub-basins of the Mediterranean Sea. This sub-region is a transition area characterised by several small scale and mesoscale oceanographic phenomena and a great abundance of marine living resources (Coll et al., 2010). The high biodiversity of this sub-region is owed to particular hydrological and geomorphological characteristics.

It is also an important sub-region for unique habitats and species recognised under several regional (SPA) and international conservation conventions and relevant EU directives. These species range from migratory birds, sea turtles, cetaceans, the endemic monk seal and a wealth of fish and fishers, marine traffic, trade and tourism, representing the sub-region socio-economic activities. However, regardless of the growing efforts by all sub-region States, there are still several knowledge gaps on marine and coastal biodiversity components, particularly in non-EU countries of north Africa and offshore and deep-sea habitats for all the sub-region. This sub-region is also characterised by different anthropogenic and economic activities, which pose increasing pressures on natural habitats and drive some species to extinction. These pressures were identified in the five national reports of the sub-region, the most important including climate changes, and associated stresses, fishing pressures, pollution, invasive species, and underwater noise. In the Post 2020 SAP BIO reports, countries presented some common and other individual needs to enhance marine natural resources (species and habitats), mapping, monitoring of some flagship species and capacity building. Strictly marine endemics or species with a very restricted distribution in the Mediterranean are few, although the five national reports for this area showed some interesting facts for some species and habitats:

- The Central Mediterranean is a unique ecosystem, as it is positioned between colder western waters and the warmer Levantine basin of the Mediterranean, making it a unique sub-region where flora and fauna of both basins co-exist. It is also the area where non-native species are established after either entering through the Suez channel or Gibraltar's strait.
- The Sicilian Channel: presents a high exchange of water masses and organisms between the west and east Mediterranean basins, contains several vital species and habitats, including seamounts and deep-sea corals. This area also features high productivity, favourable spawning conditions for several commercially important fish species, including bluefin tuna, swordfish, anchovy, and some demersal fish species. It is also a crucial feeding area for at least 30% of the global population of Scopoli's shearwater (the Island of Linosa (Sicily) hosts the largest Italian colony of Scopoli's shearwater and over 60% of the national population), 10% of the worldwide population of the vulnerable Yelkouan shearwater colony, and a colony of the endemic Mediterranean endemic subspecies of storm-petrel. This area could also be the last relevant habitat for the critically endangered Maltese skate Leucoraja melitensis that seems to be mainly confined to the Sicilian Channel. Moreover, three species of angel sharks and two species of guitarfish are present here. Charonia tritonis variegata is present, in Italy, only in the Ionian Sea and Eastern Sicily; the wandering triton Ranella olearia is also a unique species in this area.
- The south Adriatic Ionian Strait: This area contains critical habitats for Cuvier's beaked whales Ziphius cavirostris, it also shows a significant density of other megafauna listed in Annex II of SPA/BD Protocol: the giant devil ray Mobula mobular, striped dolphin Stenella coeruleoalba, Mediterranean monk seal Monachus monachus and loggerhead turtle Caretta caretta. Naria spurca (Linnaeus, 1758), (listed Erosaria spurca in Italian report) is a rare species and mainly recorded in the Ionian and Central Mediterranean Sea. This area is considered with a level of uniqueness equal to the High EBSA criteria. It has to be under attention because it presents a low level of naturalness due to high human usage levels (fishing, shipping, recreation, population pressure along the coastline, pollution).

From the five national reports, the following is a resumed synthesis of the Italy conclusions:

- Due to various economic and other anthropogenic activities along the Italian coastline, significant pressures and impacts on marine biodiversity were highlighted, mainly related to pollution, coastal development, commercial and recreational fisheries, coastal tourism, and maritime traffic. All of these pressures became adverse when accompanying the increasing impacts of climate change. Italy has activated various monitoring campaigns in the sub-region, particularly in the context of the MSFD, which, in responding to the needs dictated by the Directive and the EU Decision 848/2017, complies well with the Ecosystem Approach (EcAp[49]) process and Integrated Monitoring and Assessment Programme (IMAP[50]). Nevertheless, some knowledge gaps still exist. Moreover, some of the recommendations proposed including updating of the manuals relating to the protected species of the SPA/BIO protocol and priority habitats identified in the UNEP/MAP context, also including the recent updates of the list of species contained in Annexes II and III of the SPA/BD Protocol of the Barcelona Convention as well as the updated classification of habitats of 2019; the updating of the checklists of the fauna and flora of the Italian seas, determining, where possible, particularly endangered species and identifying the singularities of the sub-region; and how to understand the cumulative effects of climatic changes better. Other recommendations included the importance of bridging the lack of cross-border management measures, managing shared resources in a better way, and minimising common problems. The sub-region needs international solid and crossborder cooperation on fundamental issues such as biodiversity protection, particularly sustainable development and blue growth, to align environmental policy actions between States to create a standard governance system.

In particular, the western Ionian Sea ecosystem (GSA 19) is a complex and diverse marine environment in the Central Mediterranean Sea. It's characterized by unique geomorphology, oceanography, and varying productivity levels. The area features a blend of shelf areas, canyons, and deep-sea habitats, supporting a rich array of marine life, including various fish species, cetaceans, and invertebrates.[51] Studies of deep-sea demersal megafauna (fish and invertebrates) reveal distinct community structures based on depth and geographical location.[52] Researchers have studied food web structures in the Salento and Calabrian areas, revealing differences in trophic levels, ecotrophic efficiency, and omnivory indices. The food web models suggest that benthic productivity is higher in the Calabrian area due to the presence of canyons, while the Salento area is more reliant on planktonic productivity.[53] The models highlight the importance of functional groups (e.g., piscivores, demersal fish, cephalopods) and their interactions within the ecosystem.[54] Coll et al (2009) , for example, studied the main drivers of marine resources and food-web changes in the Mediterranean Sea.

[49] https://www.rac-spa.org/ecap#:~:text=At%20their%2015th%20meeting%2C%20held,Six%2Dyear%20first%20Management%20Cycle.
[50] https://mcc.jrc.ec.europa.eu/documents/Decision_IG.22-7_IMAP_FINAL.pdf
[51] https://ionianenvironment.org/areas-of-interest/marine-conservation/#:~:text=In%20these%20waters%20live%20an,numbers%20in%20the%20Ionian%20Sea.
[52] https://scientiamarina.revistas.csic.es/index.php/scientiamarina/article/view/1256#:~:text=Abstract,a%20sharp%20reduction%20in%20evenness.
[53] https://pmc.ncbi.nlm.nih.gov/articles/PMC6787816/#:~:text=2.1.,%2C%20&%20Tramutoli%2C%201980).
[54] https://digital.csic.es/bitstream/10261/115404/4/Piroddi_et_al_2014.pdf#:~:text=*%20Piscivores%20cetaceans%20(PC)%20*%20Others%20cetaceans,(ZO)%20*%20Phytoplankton%20(PH)%20*%20Seagrass%20(SE)

Adriatic Sea[55]

The Adriatic Sea is the northern semi-enclosed arm of the Mediterranean Sea, which is over 800 km long and around 150 – 200 km wide, with surface area of 138.600 km2 and average depth of 252,2 m. The Adriatic continental shelf is the most extensive one in the central Mediterranean Sea. The Adriatic basin can be divided into three sub-basins: the shallow northern Adriatic, with average depth of about 35 m; central and middle Adriatic, featured with three depressions; and deep southern Adriatic, with maximum depth of around 1.200 m (Figure 1). The western coast is largely sedimentary, low and mostly sandy, while the eastern coast is generally high and rocky, consisting of karst and featured with numerous islands, particularly along the Croatian coast. The Adriatic Sea has a water volume of about 35.000 km3; 80% of which is held in the southern portion of the basin. The main freshwater inflow comes from the Po River in the north. It is considered a mildly warm sea, with high salinity - 38,30‰. One peculiarity of the Adriatic Sea is the flow of the main sea current, which runs from the south up to the north along the eastern coast, and then returns back to the south along the western coast.

The Adriatic Sea contains diverse and unique habitats, which provide home for more than 7.000 species, including many endemic and rare species. It is estimated that 49 % of the known forms of life in the Mediterranean are present in the Adriatic Sea. Adriatic Sea sub-region is rich in biodiversity, with priority habitat types and species recognized both under the SPA/BD Protocol and relevant EU directives, including migratory species, such as cetaceans, marine turtles, sea birds and cartilaginous fish. Various anthropogenic economic activities are drivers of pressures, which intensity is even more increased due to semi-enclosure of the Sea. Although knowledge on these pressures is limited, it appears that significant issues are climatic stressor, demersal fishing and pollution from land-based activities. NIS/IAS, marine litter and underwater noise are already present and growing. There are certain conservation mechanisms in place, notably MPAs, including areas with restricted fisheries FRA, as well as the ecosystem-based management tools MSP and ICZM, although their application has just started. Down to the national level, a synthesis of conclusions from the Italy report on Post 2020 SAPBIO, is given as follows:

- Italy provides home to various marine and coastal biodiversity. Economic activities in the Adriatic are most intensive along the Italian coast. As a consequence, there are significant pressures and impacts on marine biodiversity, particularly related to tourism, maritime traffic, fisheries and agricultural activities. Climate change is important issue that needs to be addressed. Although Italy has a solid knowledge base and expertise, there are still some knowledge gaps, including the one about cumulative impacts. Institutional and legislation frameworks are set. Again, legislation and policies are in line with the EU requirements. There are numerous MPAs and coastal PAs of national and international designations, both along the northern and southern coast. Implementation of MSP and ICZM is ongoing. Transboundary cooperation already exists, but there is a strong need for further cross-border efforts, particularly towards strengthening the Adriatic MPA network.

Diet and Ecology of Bluefin tuna in the Mediterranean

Bluefin tuna in the Mediterranean Sea are apex predators with a diverse diet, primarily consisting of fish, squid, and crustaceans (Battaglia et al., 2013). Their diet composition varies based on factors like age, location, and prey availability[56]. From an ecological point of view, *T. thynnus* plays the significant role of top predator in the pelagic

[55] https://spa-rac.org/en/publication/1633/conservation-of-marine-and-coastal-biodiversity-in-the-adriatic-sea-sub-region-by-2030-and-beyond

[56] https://www.sciencedirect.com/science/article/abs/pii/S016578361830225X#:~:text=Interannual%20and%20geographic%20differences%20were,4.39%20and%204.63%2C%20respectively).

trophic web, regulating and controlling the ecosystem balance and prey biomass by a constant predation, assuring a positive control on biodiversity by contributing to maintain its natural level. As reported by several authors (Sinopoli et al. 2004; Sarà and Sarà 2007; Karakulak et al. 2009; Romeo et al. 2011), *T. thynnus* feeds on a broad spectrum of prey and has been described as an opportunistic feeder. Moreover, the Atlantic bluefin tuna is a long-lived fish (Santamaria et al. 2009), and its feeding habits are influenced by ontogenetic changes (Sarà and Sarà 2007), with a wide range of prey including zooplankton, fishes, cephalopods and crustaceans (Pardo et al., 2024). In the last decade, several efforts have been made by the scientific community to investigate the biology and ecology of *T. thynnus*, and new studies employing innovative techniques (i.e., archival tags, natural markers as genetics or otolith chemistry) shed light on tuna migration, trans-oceanic movements and the utilization of main spawning grounds and foraging areas (Rooker et al. 2003, 2006, 2007; Karakulak et al. 2004; Block et al. 2005; De Metrio et al. 2005). In the Mediterranean Sea, young-of-the-year tuna diet was investigated using stomach content analysis (Sinopoli et al. 2004), while feeding behavior of adult fishes was studied both by carbon- and nitrogen-stable isotopes and stomach analyses (Sarà and Sarà 2007; Karakulak et al. 2009). However, a significant lack on the Atlantic bluefin tuna feeding habits is still palpable, and it is mainly due to the difficulty in monitoring the diet of this species during the whole year because of their migratory behavior. Battaglia et al (2013), studied the trophic behavior of the Atlantic bluefin tuna in the Strait of Messina (central Mediterranean Sea) and found that for adult bluefin tuna, teleosts represent the main fraction of food during spring season, even if cephalopods and crustaceans can be considered other important source of energy, while remaining systematic taxa (Hydrozoa and Tunicata) have a negligible impact on the diet. On the contrary, the diet of young-of-the-year *T. thynnus* seems to vary depending on area and available prey, relying mainly on cephalopods and fishes in the northern Tyrrhenian Sea (Piccinetti and Piccinetti Manfrin 1970), crustaceans and fishes in the Ligurian Sea (Orsi Relini et al. 1998), whereas fishes, followed by crustaceans and cephalopods, were the most abundant prey items in the southern Tyrrhenian and in the western Mediterranean (Sanz Brau 1990; Sinopoli et al. 2004). But bluefin tuna also play a key role in the Mediterranean food web as prey. They can be preyed upon by larger marine animals like sharks and marine mammals (De Maddalena and Heim, 2021; Esteban et al., 2014; Calogero et al., 2021; Le Gallic et al., 2021; Ferter et al., 2024).

7.5.2. Principle 2 Performance Indicator scores and rationales – delete if not applicable

PI 2.1.1 – Primary species outcome

PI 2.1.1		The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI		
Scoring Issue		SG 60	SG 80	SG 100
a	**Main primary species stock status**			
	Guide post	Main primary species are **likely** to be above the PRI. OR If the species is below the PRI, the UoA has measures in place that are **expected** to ensure that the UoA does not hinder recovery and rebuilding.	Main primary species are **highly likely** to be above the PRI. OR If the species is below the PRI, there is either **evidence of recovery** or a demonstrably effective strategy in place **between all MSC UoAs which categorise this species as main**, to ensure that they collectively do not hinder recovery and rebuilding.	There is a **high degree of certainty** that main primary species are above the PRI **and are** fluctuating around a level consistent with MSY.
	Met?	Albacore: Yes Swordfish: Yes Skipjack: Yes Argentine squid: Yes	Albacore: Yes Swordfish: Yes Skipjack: Yes Argentine squid: Yes	Albacore: No Swordfish: No Skipjack: Yes Argentine squid: No

Rationale

As stated in **Section 7.5.1** – Primary and Secondary species (see **Table 10**), the assessment team identified three Main primary species from the data that the client shared with the AT, i.e., Albacore and Swordfish (from logbooks - **Table 11**) and Argentine squid (bait species - **Table 15**).

During the site visit, however, Skipjack was mentioned by the client, although it does not appear in the data provided by them. To be precautionary, the AT has included it as Primary Main.

<u>Mediterranean Albacore</u>: (from ICCAT, 2024a)
The results from the two scenarios provided very different perceptions of the stock status (see **Table 12**). Under scenario 1, estimated current fishing mortality levels (2022) are above FMSY (1.22; 0.66-2.10, median and 95% Confidence Interval (CI)), and the current biomass is below the BMSY level (0.58; 0.31-1.10, median and 95% CI) (**Figure 6**). The probability of being in the red, yellow, orange and green quadrants of the Kobe plot is 74.2%, 21.2%, 0.4% and 4.2%, respectively (**Figure 6**). In contrast, under scenario 2 results indicate that current fishing mortality levels (2022) are below FMSY (0.42; 0.13-1.17, median and 95% CI), and the current biomass is above the BMSY level (1.44; 0.59-2.64, median and 95% CI). The probability of being in the red, yellow, orange and green quadrants of the Kobe plot is 5.5%, 15.2%, 0.2% and 79.1%, respectively (**Figure 6**).
Based on these results, and being precautionary, the Mediterranean Albacore is not likely (70th percentile) to be above the PRI (applying the MSC default PRI of 50% BMSY – in the absence of more precautionary considerations).

PI 2.1.1	The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI

In 2021, the Commission enacted the Recommendation by ICCAT to establish a Rebuilding Plan for Mediterranean Albacore (Rec. 21-06[57]), initiating a 15-year rebuilding plan commencing in 2022 and extending until 2036, aimed at achieving BMSY with at least minimum 60% likelihood. Subsequently, in 2022, the Commission replaced Rec. 21-06 with the Recommendation by ICCAT amending the Recommendation 21-06 to establish a Rebuilding Plan for Mediterranean albacore (Rec. 22-05[58]), the one currently in force. Recommendation 22-05 confirms the 15-year recovery plan and includes various provisions such as: a 2,500 t Total Allowable Catch (TAC) for the years 2022, 2023, and 2024; a restricted number of fishing vessels (based on 2017 or 2018 data); a census of licensed sport and recreational vessels (with a maximum catch limit of three albacore specimens per vessel per day); and a seasonal closure spanning three months from 1 October to 30 November, along with an additional month between 15 February and 31 March, or alternatively, from 1 January to 31 March. The Committee was not able to test the effectiveness of these recent regulations. The Committee reiterates that the substantial uncertainties in the assessment prevent from providing specific TAC advice at this time. However, the Committee noted that, in both scenarios, the current TAC (2,500 t) would allow to meet the management objectives to recover the stock above BMSY with a probability higher than 60% by the end of the projection period (i.e., 2036). Therefore, **SG60 is met**.

There are no other overlapping MSC UoAs with this stock as Primary main. MSC Guidance (GSA3.4.6) states that "even if the total catch of a species is clearly hindering recovery, UoA catches of less than 30% of the total catch of a species may not normally be influential in hindering a recovery in a marginal sense, i.e., nothing the UoA does would be likely to change the situation." When comparing total catches of Albacore in the Mediterranean Sea (ICCAT, 2024a) in 2022 and 2023 (i.e., 2,295 t and 2,289 t, respectively) with the catches of the UoA in 2022 (107,463 kg) and 2023 (225,650 kg), the percentages obtained are 4.7 % and 9.9 %, respectively. Therefore, **SG80 is met**.

Due to the fact that the data inputs to the model remain uncertain, including: possible underreporting of the catch; limitations both in spatial and temporal coverage of available indices of abundance; the fact that most indices are limited to the most recent years of the fisheries; and, conflicting trends among these indices; and the very different results of the stock status from the two scenarios (see **Table 12**), **SG100 is not met**.

Mediterranean Swordfish: (from ICCAT, 2024b)

The analysis concluded that there is a 41.1% probability that the stock is overfished and overfishing is still occurring (red) and a 45.6% probability that the stock is overfished but overfishing is not occurring (yellow) (**Figure 9**). Current stock biomass is about 30% lower than that corresponding to MSY (B2018/BMSY = 0.72 (0.38 - 1.29)), while fishing mortality is around FMSY (F2018/FMSY = 0.93 (0.42 - 1.68)) (see **Table 13**). Therefore, the stock is not likely (70th percentile) to be above the PRI (applying the MSC default PRI of 50% BMSY – in the absence of more precautionary considerations).

ICCAT imposed a Mediterranean-wide one-month fishery closure for all gears targeting swordfish in 2008, followed by a two-month closure since 2009. Through Rec. 11-03[59] and Rec. 13-04[60] the Commission has adopted additional management measures intended to bring the stock back to levels that are consistent with the ICCAT Convention objective. Those measures include an additional one-month closure accompanied by minimum catching size regulations, a list of authorized vessels, specifications on the technical characteristics of the longline gear, and onboard domestic observers on a given percentage of longline vessels. Recently, through

[57] https://www.iccat.int/Documents/Recs/compendiopdf-e/2021-06-e.pdf
[58] https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-05-e.pdf
[59] https://www.iccat.int/Documents/Recs/compendiopdf-e/2011-03-e.pdf
[60] https://www.iccat.int/Documents/Recs/compendiopdf-e/2013-04-e.pdf

PI 2.1.1	The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI

Rec. 16-05[61], which replaced Rec. 13-04, a 15-year recovery plan has been adopted. In addition, increased catching size, and fishing capacity limitations were established, accompanied by TACs (10,500 t in 2017 Rec. 16-05, with a 3% annual reduction over the period 2018-2022) and a seasonal closure of the albacore fishery to reduce juvenile swordfish bycatches. The European Union introduced a driftnet ban for highly migratory species in 2002 and in 2003 ICCAT adopted a recommendation for a general ban of this gear in the Mediterranean (Rec. 03-04[62]). Rec. 04-12[63] forbids the use of various types of nets and longlines for sport and recreational fishing for tuna and tuna-like species in the Mediterranean.

MSC Guidance (GSA3.4.6) states that "even if the total catch of a species is clearly hindering recovery, UoA catches of less than 30% of the total catch of a species may not normally be influential in hindering a recovery in a marginal sense, i.e., nothing the UoA does would be likely to change the situation." The total estimated catch for this stock in 2022 was 7,169 t and in 2023 7,314 t (ICCAT, 2024b). According to the logbook data 34.887 kg in 2022 and 101.938 kg in 2023 were landed by the UoA (**Table 11**). The other overlapping MSC UoA certified[64] landed 16.38 t and 19.79 t in 2022 and 2023, respectively. Although discard rates are not known at this stage, even doubling these amounts leaves the UoA well below this threshold. On that basis, **SG60 and SG80 are met**.

Bearing in mind that the current stock biomass is about 30% lower than that corresponding to MSY (B2018/BMSY = 0.72 (0.38 - 1.29)), **SG100 is not met**.

Eastern Atlantic Skipjack: (from ICCAT, 2022a)

The stock status for eastern skipjack relative to MSY reference points is appropriate (B2020/BMSY = 1.60, F2020/FMSY = 0.63). The median MSY estimate was 216,617 t (consistent with catch in 2020 and 2021, but below catch from 2015-2019). The probability of B>BMSY, as estimated from the uncertainty grid, was 83%, but the group noted the high uncertainty in estimates of B/BMSY reflected in the long tails of the distribution (95% confidence interval for B/BMSY of 0.5-5.79; i.e., a 2.5% probability of the stock biomass being <50% BMSY). The summary status table for the stock is given in **Table 14**. Time series of biomass and fishing mortality relative to MSY reference points are given in **Figure 11**. The stock status of eastern Atlantic skipjack tuna in 2020 was estimated with a high probability (78%) to be in a sustainable condition (green quadrant), with that stock not overfished or subjected to overfishing (**Figure 12**). Therefore, **SG60, SG80 and SG100 are met**.

Argentine squid:

Official Technical Report No. 11/2025 of the National Institute for Fisheries Research and Development (INIDEP), based on the assessment campaign VA-02/25, estimates an abundance of 376,098 tons and 1.622 million individuals of the species.[65] These values are comparable to the historical records observed in 2006, 2012, and 2014, indicating a robust and healthy stock. Therefore, **SG60 and SG80 are met.**

However, as the AT has not been able to read the Technical Report, **SG100 is not met**.

b	Minor primary species stock status

[61] https://www.iccat.int/Documents/Recs/compendiopdf-e/2016-05-e.pdf
[62] https://www.iccat.int/Documents/Recs/compendiopdf-e/2003-04-e.pdf
[63] https://www.iccat.int/Documents/Recs/compendiopdf-e/2004-12-e.pdf
[64] https://fisheries.msc.org/en/fisheries/sathoan-french-mediterranean-bluefin-tuna-artisanal-longline-and-handline-fishery/@@assessments
[65] https://seafood.media/fis/worldnews/worldnews.asp?monthyear=4-2025&day=1&id=134119&l=s&country=&special=&ndb=1&df=1

PI 2.1.1		The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI		
	Guide post			Minor primary species are highly likely to be above the PRI. OR If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species.
	Met?			Yes (both stocks of sardine)

Rationale

As seen from **Table 10** and **Table 15**, the only minor primary species (although they are two different stocks) is the sardine used as bait, which come from the Adriatic and the North Tyrrhenian Sea.

Adriatic Sardine[66]

A surplus production model SPiCT was used to benchmark sardine in the Adriatic Sea (GSAs 17 and 18) for reference year 2022 (GFCM_SAC, 2023). To estimate the biomass index, a combined approach from GSAs for West and East applying a Bayesian approach (JARA) was used. All the resulting evaluated scenarios and their diagnostics indicated comparable and robust advice, with sardine in GSA 17 and 18 being considered to be at increased risk of being overexploited SSBcurr/Bmsy ratio: 0.68; SSBcurr/Bpa ratio: 1.35, SSBcurr/Blim ratio: 2.25) and in overexploitation (Fcurr/FMSY ratio: 1.44). At an updated assessment in May 2024 (GFCM_SAC, 2024), the SPiCT model was run again with an additional year (2023) of data, showing a continued decrease in biomass in the last 12 years that is not favourable for the stock status. Fishing mortality showed a sharp decrease in the last year from very high levels in the previous few years, despite a steady decrease in landing value (**Figure 13**).

The stock assessment does not provide the range of indicator values from the explored models; however from the sensitivity analysis it can be seen that 20 – 30% of the relative biomass distribution falls below 50% BMSY (the MSC's default proxy for Blim in the absence of more precautionary considerations). On that basis, the AT does not have enough evidence to conclude that this stock is likely (70th percentile) to be above the PRI.

In the case the species is below the PRI, the UoA should have measures in place that are expected to ensure that the UoA does not hinder recovery and rebuilding. In this context, MSC Guidance (GSA3.4.6) states that "even if the total catch of a species is clearly hindering recovery, UoA catches of less than 30% of the total catch of a species may not normally be influential in hindering a recovery in a marginal sense, i.e., nothing the UoA does would be likely to change the situation."

The approximate sardine (including both stocks) used as bait in the UoA is estimated at 720 kg per year (**Table 15**). The overall 2022 and 2023 catches of Adriatic sardine according to the stock assessment (GFCM_SAC (2024) were 50477.71 t (in 2022) and 37545.25 t (in 2023).

Therefore, there is evidence that the UoA does not hinder the recovery and rebuilding of the Adriatic sardine stock. **SG100 is met**.

North Tyrrhenian sardine: [67]

[66] https://www.fao.org/gfcm/technical-meetings/detail/en/c/1696873/
[67] https://www.fao.org/gfcm/technical-meetings/detail/en/c/1696873/

PI 2.1.1	The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI
The latest European sardine (*Sardina pilchardus*) stock assessment in GSAs 09, 10 was carried out using the Stochastic Production model in Continuous Time (SPiCT) model. The new model including GSAs 9 and 10 gave results consistent with the ones obtained in 2023 for GSA9. The stock was found "sustainably exploited" (**Figure 14**) and advised to "evaluate potential fishing opportunities". Therefore, **SG100 is met**.	
References	
Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI
Data-deficient? (Risk-Based Framework needed)	No

PI 2.1.2 – Primary species management strategy

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
a	Management strategy in place			
	Guide post	There are **measures** in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the PRI.	There is a **partial strategy** in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the PRI.	There is a **strategy** in place for the UoA for managing main and minor primary species.
	Met?	Albacore: Yes Swordfish: Yes Skipjack: Yes Argentine squid: Yes Minor species: Yes (by default)	Albacore: No Swordfish: Yes Skipjack: Yes Argentine squid: Yes Minor species: Yes (by default)	No
Rationale				

As stated in **Section 7.5.1** – Primary and Secondary species (see **Table 10**), the assessment team has identified three Main primary species, i.e., Albacore and Swordfish (from logbooks - **Table 11**) and Argentine squid (bait species - **Table 15**).

As seen from **Table 10** and **Table 15**, the only minor primary species (although they are two different stocks) is the sardine used as bait, which come from the Adriatic and the North Tyrrhenian Sea.

Mediterranean Albacore:
In 2021, the Commission enacted the Recommendation by ICCAT to establish a Rebuilding Plan for Mediterranean Albacore (Rec. 21-06[68]), initiating a 15-year rebuilding plan commencing in 2022 and extending until 2036, aimed at achieving BMSY with at least minimum 60% likelihood. Subsequently, in 2022, the Commission replaced Rec. 21-06 with the Recommendation by ICCAT amending the Recommendation 21-06 to establish a Rebuilding Plan for Mediterranean albacore (Rec. 22-05[69]), the one currently in force. Recommendation 22-05 confirms the 15-year recovery plan and includes various provisions such as: a 2,500 t Total Allowable Catch (TAC) for the years 2022, 2023, and 2024; a restricted number of fishing vessels (based on 2017 or 2018 data); a census of licensed sport and recreational vessels (with a maximum catch limit of three albacore specimens per vessel per day); and a seasonal closure spanning three months from 1 October to 30 November, along with an additional month between 15 February and 31 March, or alternatively, from 1 January to 31 March.
Therefore, **SG60 is met**.

[68] https://www.iccat.int/Documents/Recs/compendiopdf-e/2021-06-e.pdf
[69] https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-05-e.pdf

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch

However, the Committee reiterated that the substantial uncertainties in the assessment (there are currently two scenarios providing very different perceptions of the stock status) prevented them from providing specific TAC advice at this time. Even though the Committee also noted that in both scenarios the current TAC (2,500 t) would allow to meet the management objectives to recover the stock above BMSY with a probability higher than 60% by the end of the projection period (i.e., 2036), further work is required to address the key issues identified, including the treatment of the western Mediterranean larval index and the reliability of the catch data, before the Committee can provide robust management recommendations for the Mediterranean albacore stock. The Committee emphasized that the uncertainty in total catch is of paramount importance in production models and was not adequately addressed in the models presented. To the extent that the reported catches are inaccurate or incomplete, the ability of these models to reflect the stock dynamics accurately is undermined. The Committee concluded that the previous assessments of 2021 and 2017 (ICCAT, 2017a) were likely affected by the same issues. Therefore, the Committee suggests re-evaluating the stock status only after addressing the main concerns expressed. Based on this, **SG80 is not met**.

Mediterranean swordfish:

ICCAT imposed a Mediterranean-wide one-month fishery closure for all gears targeting swordfish in 2008, followed by a two-month closure since 2009. Through Rec. 11-03[70] and Rec. 13-04[71] the Commission has adopted additional management measures intended to bring the stock back to levels that are consistent with the ICCAT Convention objective. Those measures include an additional one-month closure accompanied by minimum catching size regulations, a list of authorized vessels, specifications on the technical characteristics of the longline gear, and onboard domestic observers on a given percentage of longline vessels. Recently, through Rec. 16-05[72], which replaced Rec. 13-04, a 15-year recovery plan has been adopted. In addition, increased catching size, and fishing capacity limitations were established, accompanied by TACs (10,500 t in 2017 Rec. 16-05, with a 3% annual reduction over the period 2018-2022) and a seasonal closure of the albacore fishery to reduce juvenile swordfish bycatches. The European Union introduced a driftnet ban for highly migratory species in 2002 and in 2003 ICCAT adopted a recommendation for a general ban of this gear in the Mediterranean (Rec. 03-04[73]). Rec. 04-12[74] forbids the use of various types of nets and longlines for sport and recreational fishing for tuna and tuna-like species in the Mediterranean. In particular, Rec. 16-05 includes provisions for review including through stock assessment updates acknowledging the potential for changes of the management framework for swordfish, including the revision of the catch limits and alternative management scenarios, in case this is necessary to comply with the management objectives. Therefore, **SG60 and SG80 are met**.

Eastern Atlantic Skipjack:

The current regulations for tropical tunas, in Rec. 23-01[75], only entered into force in June 2024, and the impacts on the SKJ stock and fisheries are not yet evident in the available scientific data. However, the previous Recommendations, Rec. 22-01[76] and Rec. 21-01[77], included several measures that impacted fishing for the eastern stock, including the first Atlantic-wide, temporal closure on fishing for schools associated with FADs, limits to the

[70] https://www.iccat.int/Documents/Recs/compendiopdf-e/2011-03-e.pdf
[71] https://www.iccat.int/Documents/Recs/compendiopdf-e/2013-04-e.pdf
[72] https://www.iccat.int/Documents/Recs/compendiopdf-e/2016-05-e.pdf
[73] https://www.iccat.int/Documents/Recs/compendiopdf-e/2003-04-e.pdf
[74] https://www.iccat.int/Documents/Recs/compendiopdf-e/2004-12-e.pdf
[75] https://www.iccat.int/Documents/Recs/compendiopdf-e/2023-01-e.pdf
[76] https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-01-e.pdf
[77] https://www.iccat.int/Documents/Recs/compendiopdf-e/2021-01-e.pdf

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch

number of FADs that can be actively managed by individual purse seiners, changes in FAD design, and others. In addition, taking into consideration the multi-species nature of tropical tuna fisheries, the Total Allowable Catch (TAC) and catch limits adopted for other tropical tuna stocks, mainly bigeye tuna, may also explain the drop in skipjack catches in recent years.
This coupled with the good stock status (see SIa), shows that there is a partial strategy in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the PRI. Hence, **SG60 and SG80 are met**.

Argentine squid: [78,79,80,81,82,83]
The Argentine squid fishery, *Illex argentinus*, is managed through a combination of regulatory measures, scientific research, and international agreements. Selective fishing gear, mainly jigging machines, is used, and catch quotas and temporary fishing bans are established to ensure the sustainability of the species. In addition, joint studies and research are carried out between countries to assess, conserve, and preserve living resources. Therefore, **SG60 and SG80 are met**.

As there is not a strategy in place for the UoA for managing all main and minor primary species, **SG100 is not met**.

b	Management strategy evaluation			
	Guide post	The measures are considered **likely** to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some **objective basis for confidence** that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
	Met?	All scoring elements: Yes	All scoring elements: Yes	All scoring elements: No

Rationale

Mediterranean Albacore:
As explained in SIa, there is a 15-year recovery plan in place (Rec. 22-05[84]). However, there are substantial uncertainties in the assessment preventing the Commitee from providing specific TAC advice at the time (there are currently two scenarios providing very different perceptions of the stock status). Nevertheless, the Committee also noted that in both scenarios the current TAC (2,500 t) would allow to meet the management objectives to recover the stock above BMSY with a probability higher than 60% by the end of the projection period (i.e., 2036). Therefore, there is some objective basis for confidence that the measures/partial strategy will work. **SG60 and S80 are met**.

[78] https://pescare.com.ar/la-ctmfm-dicto-medidas-de-proteccion-de-la-especie-calamar-illex-argentinus-en-zcp/
[79] https://pescare.com.ar/cierran-la-temporada-de-pesca-de-calamar-illex-argentinus-2025/#:~:text=El%20Instituto%20Nacional%20de%20Investigaci%C3%B3n,a%20las%2000:00%20horas.
[80] https://www.argentina.gob.ar/sites/default/files/inidep_infografia_calamar.pdf
[81] https://pescare.com.ar/resolucion-ctmfm-nro-2-2024-se-habilita-la-pesca-de-calamar-en-la-zona-comun-de-pesca/
[82] https://capa.com.ar/la-pesca-del-calamar-illex/#:~:text=Los%20Buques%20Poteros,suelen%20complementarse%20con%20l%C3%A1mparas%20submarinas.
[83] https://pescare.com.ar/analisis-y-perspectivas-de-la-pesqueria-de-calamar-illex-evaluaciones-y-decisiones-estrategicas/
[84] https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-05-e.pdf

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch

Mediterranean swordfish:
After the adoption of the ICCAT Recommendations mentioned in SIa (culminating in Rec. 16-05), reported catches decreased significantly from the 2000s' level, making the catches of the period 2012-2023 among the lowest of the last three decades. In addition, reported catches of undersized swordfish have also decreased more than 50%, compared with the levels of the decade of 2000s. Importantly, based on observations onboard, the recent increase of the minimum catching size from 90 to 100 cm (through Rec 16-05) has resulted in discard increases of undersized swordfish (up to 600%) in some fisheries. Though an attempt has been made to statistically estimate discard levels and consider them in stock assessment models, the real volume of total discards is unknown due to this under-reporting. Such under-reporting leads to false estimates of the overall catch volume and consequently bias stock status estimates and projections of future stock size under different management measures. Both hooking and post-release mortality are unknown for this stock but scientific work is ongoing on this issue. However, for the Atlantic very high values of hooking mortality (ranging between 78-88%) have been reported for swordfish less than 125 cm LJFL, and it is possible that similar high values also occur in the Mediterranean. The Committee showed concern that such discards are not being fully reported and reiterated that all dead discards should be reported in Task 1 nominal catches for all fisheries. Additionally, they should be included in the analysis of CPUE data trends.
According to the Commission objectives the stock requires rebuilding and relevant scenarios were simulated assuming different levels of TACs. Analysis indicated that the probability of stock rebuilding by the end of the projection period (2028) is 60% if a TAC equal to 10,000 t is implemented (**Figure 10**). The probability increases if lower TACs levels are selected. As there are uncertainties on stock productivity, these estimates may be optimistic and should be interpreted with caution.
From all the above, the AT believes that there are some objective basis for confidence that the strategy will work and **SG60 and SG80 are met**. However, given the uncertainties around future stock productivity, there is no high confidence. **SG100 is not met**.

Eastern skipjack:
The stock status for eastern skipjack relative to MSY reference points is appropriate (B2020/BMSY = 1.60, F2020/FMSY = 0.63). The stock status of eastern Atlantic skipjack tuna in 2020 was estimated with a high probability (78%) to be in a sustainable condition (green quadrant), with that stock not overfished or subjected to overfishing (**Figure 12**). Moreover, there are Recommendations (i.e., Rec. 23-01[85], and the previous Rec. 22-01[86] and Rec. 21-01[87]) which included several measures that impacted fishing for the eastern stock, including the first Atlantic-wide, temporal closure on fishing for schools associated with FADs, limits to the number of FADs that can be actively managed by individual purse seiners, changes in FAD design, and others. Therefore, **SG60 and SG80 are met**.

Argentine squid:
Its management and evaluation are carried out based on knowledge of the size of the population recruited annually and its evolution during the fishing season, which must be done in real time and weekly (Brunetti et al., 2000). In addition, it requires knowing the total number of vessels operating in the Argentine EEZ and in adjacent regions. The objective is to allow sufficient escape of spawning individuals (above a minimum threshold) to avoid the probabilities of low recruitment the following year (Basson et al., 1996). In fact, the latest Official Technical Report No. 11/2025 of the National Institute for Fisheries Research and Development (INIDEP), based on the assessment

[85] https://www.iccat.int/Documents/Recs/compendiopdf-e/2023-01-e.pdf
[86] https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-01-e.pdf
[87] https://www.iccat.int/Documents/Recs/compendiopdf-e/2021-01-e.pdf

PI 2.1.2	There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch

campaign VA-02/25, estimates an abundance of 376,098 tons and 1.622 million individuals of the species.[88] These values are comparable to the historical records observed in 2006, 2012, and 2014. Therefore, **SG60 and SG80 are met**.

Sardines (both stocks: Adriatic and N. Tyrrhenian Sea):
Given the minimal contribution of the UoA to the regional catches of these stocks (although it should be confirmed with further official data), there is an objective basis for confidence that the measures will work. **SG60 and SG80 are met**.

SG100 is not met for any of the scoring elements as testing has not been performed.

c	Management strategy implementation			
	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).
	Met?		All scoring elements: Yes	All scoring elements: No

Rationale

Mediterranean albacore, Mediterranean swordfish and Eastern skipjack:
Landings (including albacore, swordfish and skipjack) are closely monitored in the UoA (as there is a mandatory coast guard-assisted landing which must be notified 4 hours before entering port), and vessels either have an authorization to target these species or catch them under a bycatch quota. Furthermore, the boats in the UoA are required to register all catches in the electronic logbooks, including albacore, swordfish and skipjack. This provides some evidence that the strategy is being implemented successfully and **SG80 is met**.

Argentine squid:
According to the FAO, in 2018, the exploitation status of *Illex argentinus* was "fully exploited with overexploitation occurring in some years", suggesting that the species was under significant fishing pressure. The data showed that it had been experiencing a pronounced "boom and bust" cycle since 1999.[89] The latest stock assessment, however, estimated an abundance of 376,098 tons and 1.622 million individuals of the species.[90] These values are comparable to the historical records observed in 2006, 2012, and 2014. Which gives some evidence that the strategy is being implemented successfully, hence **meeting SG80**.

Sardines:
SG80 is met by default for Minor primary species.

[88] https://seafood.media/fis/worldnews/worldnews.asp?monthyear=4-2025&day=1&id=134119&l=s&country=&special=&ndb=1&df=1
[89] https://nuestrofuturocomun.com/wp-content/uploads/2018/02/El-caso-del-calamar-Illex-argentinus.pdf
[90] https://seafood.media/fis/worldnews/worldnews.asp?monthyear=4-2025&day=1&id=134119&l=s&country=&special=&ndb=1&df=1

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
However, considering that the data received were not completely accurate (as evidenced during the site visit), clear evidence is lacking for all the scoring elements, therefore, **SG100 is not met** for any of the scoring elements.				
d	Shark finning			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	NA	NA	NA
Rationale				
This Scoring Issue does not need be scored as there are no sharks as Primary species.				
e	Review of alternative measures			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.
	Met?	NA	NA	NA
Rationale				
Overall Performance Indicator (PI) Rationale				
Draft scoring range		60-79		
Information gap indicator		Information sufficient to score PI		

PI 2.1.3 – Primary species information

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
Scoring Issue		SG 60	SG 80	SG 100
a	**Information adequacy for assessment of impact on main primary species**			
	Guide post	Qualitative information is **adequate to estimate** the impact of the UoA on the main primary species with respect to status. OR If RBF is used to score PI 2.1.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.	Some quantitative information is available and is **adequate to assess** the impact of the UoA on the main primary species with respect to status. OR If RBF is used to score PI 2.1.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.	Quantitative information is available and is **adequate to assess with a high degree of certainty** the impact of the UoA on main primary species with respect to status.
	Met?	Yes	No	No
Rationale				
As explained in the background section of Primary and Secondary species (Section **7.5.1**), during the site visit the AT realized that some species are not recorded in the logbook. In addition, no detailed information was provided for the bait species. Therefore, even though there is some quantitative information available, it cannot be considered adequate to assess the impact of the UoA on the main primary species with respect to status. Thus, **SG60 is met, but not SG80.**				
b	**Information adequacy for assessment of impact on minor primary species**			
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	Met?			No
Rationale				
Same rationale as for SIa.				
c	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage **main** primary species.	Information is adequate to support a **partial strategy** to	Information is adequate to support a **strategy** to manage **all** primary

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
			manage **main** primary species.	species, and evaluate with a **high degree of certainty** whether the strategy is achieving its objective.
	Met?	No	No	No
Rationale				
As explained in PI 2.1.2, there is a partial strategy for all species, although for Albacore there are substantial uncertainties in the assessment (there are currently two scenarios providing very different perceptions of the stock status) which prevent the Committee from providing specific TAC advice. In addition, even though there is a strategy is in place at ICCAT level for swordfish, concern was raised by the SCRS that since the establishment of minimum landing sizes, the discard levels of undersized swordfish may have increased (ICCAT SCRS, 2016). Moreover, during the site visit the AT realized that some species are not recorded in the logbook, and no detailed information was provided for the bait species. Furthermore, there is no observer program or EM cameras on board to have fisheries-independent data. Therefore, the AT believes that **SG60 is not met**.				
References				
Draft scoring range		<60		
Information gap indicator		More information sought: All species should be recorded in the logbook. Detailed information needs to be available about the bait.		

PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit		
Scoring Issue		SG 60	SG 80	SG 100
	Main secondary species stock status			
a	Guide post	Main secondary species are **likely** to be above biologically based limits. OR If below biologically based limits, there are **measures** in place expected to ensure that the UoA does not hinder recovery and rebuilding.	Main secondary species are **highly likely** to be above biologically based limits. OR If below biologically based limits, there is either **evidence of recovery** or a **demonstrably effective partial strategy** in place such that the UoA does not hinder recovery and rebuilding. AND Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a, demonstrably effective strategy in place between those MSC UoAs that have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.	There is a **high degree of certainty** that main secondary species are above biologically based limits.
	Met?	Blue shark: Yes	Blue shark: No	Blue shark: No

Rationale

As explained in the background section for Primary and Secondary species (Section **7.5.1**) (**Table 10**), the following species were classified as Secondary minor: **Dolphinfish, Mediterranean spearfish, and round sardinella** (bait). In addition, during the site visit, talking to the client and the other skippers, they confirmed that very rarely they do catch **Blue shark (*Prionace glauca*)**, although, according to them, they are always release alive by cutting the line. However, these interactions are not reported in their logbooks.

Being precautionary, the AT decided to assess the blue shark as main. Therefore, the only **Secondary main** species in this assessment is the **blue shark**.

Until recently, the Atlantic population of blue shark (*P. glauca*) has been considered to be composed of two stocks; a north Atlantic population and a south Atlantic population. However, as explained in detail in the background section, genetic studies have recently provided statistically significant differences between the Mediterranean and the North Atlantic individuals (Carlson et al., 2023; Dolfo et al., 2024; Leone et al (2024).

PI 2.2.1	The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit

The assessment team, therefore, has decided to work from the assumption that blue shark in the Mediterranean is a separate stock. In the absence of a stock assessment or any stock-specific management against reference points, this species has been assessed as a secondary species using the RBF. Results of the PSA are shown in **Section 8.3.1**

According to the PSA performed (**Table 20**) and the MSC PSA derived score (**Table 22**), blue shark **scores 70.**

At ICCAT level, there are measures in place (i.e., Rec 23-10[91]) expected to ensure that the UoA does not hinder recovery and rebuilding. Thus, **SG60 is met**.

However, no interactions with/catches of this species are currently recorded in the UoA logbooks. In addition, the Mediterranean subpopulation has undergone a decline of 78–90% over the past 30 years (three-generation period). The Blue Shark is therefore listed as Critically Endangered in the Mediterranean Sea based on a past decline of up to 90% over three generations resulting from ongoing overfishing (Sims et al., 2016). Therefore, there is no evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding. Hence, **SG80 is not met**.

b	**Minor secondary species stock status**			
	Guide post			Minor secondary species are highly likely to be above biologically based limits. OR If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
	Met?			All scoring elements (Dolphinfish, Mediterranean spearfish, and Round sardinella): No

Rationale

As explained above, the other secondary minor species are: **Dolphinfish, Mediterranean spearfish, and Round sardinella** (bait).

Dolphinfish:
Moltó et al. (2022) developed a multiannual five-fleet generalized depletion model applicable to a monthly database of effort, catch, and mean weight from 2008 to 2019 for Mediterranean common dolphinfish (*Coryphaena hippurus*) fishery. Results showed a high natural mortality rate (0.25 month^{-1}) and wide intra-season fluctuations in biomass. Annual recruitment fluctuates around 10 million individuals, and it has been

[91] https://iccat.int/Documents/Recs/compendiopdf-e/2023-10-e.pdf

PI 2.2.1	The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit

stable along the analysed period. Exploitation rate only exceeded 40% during the peak month of catches, being much lower the rest of the season, indicating that this stock is fished within sustainable limits. However, the authors state that the stock assessment model can be improved in several of its aspects. For instance, nearly all recruitment estimates have coefficients of variation >100%. Hence, **SG100 is not met**.

The other two species are data deficient, therefore, in the absence of a stock assessment or any stock-specific management against reference points, these species have been assessed as a secondary species using the RBF. Results of the PSA are shown in **Section 8.3.1**

Mediterranean spearfish:
According to the PSA performed (**Table 19**) and the MSC PSA derived score (**Table 22**), Mediterranean spearfish **scores 97**, therefore **SG100 is not met**.

Round sardinella:
According to the PSA performed (**Table 21**) and the MSC PSA derived score (**Table 22**), Mediterranean spearfish **scores 98**, therefore **SG100 is not met**.

References	
Draft scoring range	60-79
Information gap indicator	More information sought All species caught / interacted with need to be recorded in the logbooks.
Data-deficient? (Risk-Based Framework needed)	Yes

PI 2.2.2 – Secondary species management strategy

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
a	**Management strategy in place**			
	Guide post	There are **measures** in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a **partial strategy** in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a **strategy** in place for the UoA for managing main and minor secondary species.
	Met?	Blue shark: Yes	Blue shark: No	All scoring elements: No

Rationale

The only Secondary main species considered in this pre-assessment is the Blue shark:

Blue shark:

According to the client, no blue sharks are retained in the UoA, as all specimens are discarded cutting off the line. It is worth noting that fishers have limited interest in bringing this species onboard the vessel due to it being dangerous. As explained in **Section 8.3.1**, a postrelease survival study on 5 different shark species (including *P. glauca*) in the central Pacific Ocean was carried out from 2001 to 2006 indicated that the summary effect of postrelease mortality for blue sharks was 15% (95% CI, 8.5–25.1%).[92] More recently, during the SELPAL project, based on electronic tagging data for a sample of blue sharks, the post-release mortality rate was estimated <25%.[93]

ICCAT Rec 23-10[94] on MANAGEMENT MEASURES FOR THE CONSERVATION OF NORTH ATLANTIC BLUE SHARK CAUGHT IN ASSOCIATION WITH ICCAT FISHERIES states that "*In cases where North Atlantic blue shark is not retained, CPCs shall make all reasonable efforts so that specimens caught incidentally in ICCAT fisheries be released unharmed and as soon as possible. CPCs shall report to the ICCAT Secretariat, in accordance with ICCAT data reporting requirements, the number of specimens released, including their status upon release (i.e., dead discards and live releases)*."

Therefore, **SG60 is met**.

However, as currently interactions are not recorded in logbooks, **SG80 is not met**.

The rest of Secondary species (i.e., Dolphinfish, Mediterranean spearfish, and Round sardinella) are Secondary minor. Therefore, SG60 and SG80 are not applicable for these species.

As Blue shark does not meet SG80, **SG100 cannot be met**.

[92] https://spo.nmfs.noaa.gov/content/postrelease-survival-vertical-and-horizontal-movements-and-thermal-habitats-five-species
[93] https://www.amop.fr/wp-content/uploads/2018/07/SELPAL-Rapport.pdf
[94] https://iccat.int/Documents/Recs/compendiopdf-e/2023-10-e.pdf

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
b	**Management strategy evaluation**			
	Guide post	The measures are considered **likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is **some objective basis for confidence** that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
	Met?	Blue shark: Yes Secondary minor: Yes	Blue shark: No Secondary minor: Yes	Blue shark: No Secondary minor: No
Rationale				
As explained in SIa, there are measures in place for the **blue shark** (i.e., the only Secondary species considered main at this stage). In addition, the most recent stock assessment for the North Atlantic blue shark carried out in 2021[95] showed that it was at the BMSY level (B2021/BMSY = 1.00, with 95% confidence interval: 0.75-1.31) and was not experiencing overfishing (F2021/FMSY = 0.70, with a 95% confidence interval: 0.50-0.93). Moreover, locally, best practice protocols (which are voluntary) have been developed through collaboration between fishers and scientific partners to promote sustainable fishing and minimize bycatch. Therefore, even tough this is not the same stock as the Mediterranean stock, the AT believes **SG60 is met**. However, due to the fact that interactions are not recorded in logbooks, and the Mediterranean subpopulation is listed as Critically Endangered by the IUCN red list, based on a past decline of up to 90% over three generations (Sims et al., 2016, the AT cannot state that there is some objective basis for confidence that the measures will work. Hence, **SG80 is not met**. The **rest of Secondary species** (i.e., Dolphinfish, Mediterranean spearfish, and Round sardinella) are minor, and based on low percentages of catches in the UoA (although it should be confirmed with further official data), there is an objective basis for confidence that the measures will work. **SG60 and SG80 are met**. However, as there has been no testing and catch recording and information on bait needs to be improved, **SG100 is not met**.				
c	**Management strategy implementation**			
	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).

[95] https://www.iccat.int/Documents/SCRS/ExecSum/BSH_ENG.pdf

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
	Met?		All scoring elements: Yes	All scoring elements: No
Rationale				
Blue shark: Based on what the client and skippers told the AT regarding releasing the blue shark, there is some evidence that the measures are being implemented successfully. Hence, **meeting SG80**. However, as these interactions are not recorded in the logbooks, there is no clear evidence that the partial strategy is being implemented successfully. Hence, **SG100 is not met**. Minor secondary species: The rest of Secondary species (i.e., Dolphinfish, Mediterranean spearfish, and Round sardinella) are minor, and based on low percentages of catches in the UoA (although it should be confirmed with further official data), there is some evidence that the measures/partial strategy is being implemented successfully. **SG80 is met**. However as catch recording and information on bait needs to be improved, the AT believes there is no clear evidence that the partial strategy is being implemented successfully. Hence, **SG100 is not met.**				
d	**Shark finning**			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	Yes	Yes	No
Rationale				
REGULATION (EU) No 605/2013[96] of 12 June 2013 amending Council Regulation (EC) No 1185/2003 on the removal of fins of sharks on board vessels stipulates that sharks caught by EU vessels anywhere in the world must be landed with their fins naturally attached. Implementation is confirmed by a European Commission report on the implementation of the updated shark finning Regulation[97]. Recommendation GFCM/36/2012/3[98] on fisheries management measures for the conservation of sharks and rays in the GFCM area of application also prohibits the practice of shark finning. In addition, the European market for shark fins is virtually non-existent. The AT, therefore, believes that **SG60 and SG80 are met.** **SG100 is not met** because there are no observers or EM cameras on board in this fishery, hence, there can be no high degree of certainty.				
e	**Review of alternative measures to minimise mortality of unwanted catch**			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-	There is a **biennial** review of the potential effectiveness and practicality of alternative

[96] https://eur-lex.europa.eu/eli/reg/2013/605/oj/eng
[97] https://ec.europa.eu/newsroom/mare/items/30538/en
[98] https://openknowledge.fao.org/items/c799b752-7733-46b5-ae8f-3130c703bedb

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
		related mortality of **unwanted** catch of main secondary species.	related mortality of **unwanted** catch of main secondary species and they are implemented as appropriate.	measures to minimise UoA-related mortality of **unwanted** catch of all secondary species, and they are implemented, as appropriate.
	Met?	No	No	No
Rationale				
As seen above, there are recommendations of ICCAT, GFCM and the FAO on the need to increase knowledge to ensure the conservation and management of populations of sharks/rays, marine turtles and seabirds incidentally caught by tuna longlines. However, at this stage, the AT is not clear about the impact of the UoA on blue shark, therefore **SG60 is not met**. The other secondary minor species are not considered unwanted catch.				
References				
Draft scoring range		<60		
Information gap indicator		More information sought UoA-related mortality of blue shark is not really known as not all catches/interactions are recorded in the logbooks.		

PI 2.2.3 – Secondary species information

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species		
Scoring Issue		SG 60	SG 80	SG 100
a	**Information adequacy for assessment of impacts on main secondary species**			
	Guide post	Qualitative information is **adequate to estimate** the impact of the UoA on the main secondary species with respect to status. OR If RBF is used to score PI 2.2.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is available and **adequate to assess** the impact of the UoA on main secondary species with respect to status. OR If RBF is used to score PI 2.2.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	Quantitative information is available and **adequate to assess with a high degree of certainty** the impact of the UoA on main secondary species with respect to status.
	Met?	Yes	No	No
Rationale				
As explained in the background section of Primary and Secondary species (Section **7.5.1**), during the site visit the AT realized that some species are not recorded in the logbook. In addition, no detailed information was provided for the bait species. Therefore, even though there is some quantitative information available, it cannot be considered adequate to assess the impact of the UoA on the main primary species with respect to status. Thus, **SG60 is met, but not SG80.**				
b	**Information adequacy for assessment of impacts on minor secondary species**			
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
	Met?			No
Rationale				
Same rationale as for SIa. Therefore, **SG100 is not met**.				
c	**Information adequacy for management strategy**			

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species		
	Guide post	Information is adequate to support **measures** to manage **main** secondary species.	Information is adequate to support a **partial strategy** to manage **main** secondary species.	Information is adequate to support a **strategy** to manage **all** secondary species, and **evaluate** with a **high degree of certainty** whether the strategy is **achieving its objective**.
	Met?	No	No	No
Rationale				
As explained in PI 2.2.2, there are measures (but not partial strategy) to manage main secondary species (i.e., blue shark). However, some species are not recorded in the logbook (including interactions with blue sharks), and no detailed information was provided for the bait species. Furthermore, there is no observer program or EM cameras on board to have fisheries-independent data. Therefore, the AT believes that **SG60 is not met**.				
References				
List any references here, including hyperlinks to publicly-available documents.				
Overall Performance Indicator (PI) Rationale				
Insert sufficient rationale to support the conclusion for the Performance Indicator, making direct reference to each scoring issue (delete if not appropriate – e.g. rationale is provided for each Scoring Issue).				
Draft scoring range		<60		
Information gap indicator		More information sought All catches/interactions need to be recorded in the logbooks.		

PI 2.3.1 – ETP species outcome

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	**Effects of the UoA on population/stock within national or international limits, where applicable**			
	Guide post	Where national and/or international requirements set limits for ETP species, the **effects of the UoA** on the population/ stock are known and **likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, the **combined effects of the MSC UoAs** on the population /stock are known and **highly likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a **high degree of certainty** that the **combined effects of the MSC UoAs** are within these limits.

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
	Met?	Yes	Yes	No

Rationale

As explained in **Section 7.5.1** – Endangered, Threatened and Protected species, no ETPs are recorded in logbooks. However, according to the client and skippers interviewed during the site visit:

- *Isurus oxyrinchus* (shortfin mako shark) are rarely caught and released alive by cutting the line.
- Interactions with sea turtles are also extremely rare; and cetaceans and seabirds are absent.

From these species, only the North Atlantic shortfin mako has limits. This scoring issue is, therefore, only relevant for shortfin mako.

North Atlantic shortfin mako:
Both shortfin mako (*Isurus oxyrinchus*) stocks, North and South Atlantic, were assessed in 2017 (ICCAT, 2017e[99]). In 2019, an intersessional meeting (ICCAT, 2020d[100]) was held to update projections on the North Atlantic shortfin mako (*Isurus oxyrinchus*) stock based on the 2017 stock assessment.
According to ICCAT, the 2017 and 2019 SCRS assessments concluded that there is a 90% probability of the **North Atlantic shortfin mako** stock being overfished and experiencing overfishing (ICCAT, 2019) (see **Table 16** and **Figure 15**). ICCAT Rec. 21-09[101] on the conservation of the North Atlantic stock of shortfin mako shark states that CPCs shall implement a rebuilding programme for North Atlantic shortfin mako shark starting in 2022 to end overfishing immediately and gradually achieve biomass levels sufficient to support maximum sustainable yield (MSY) by 2070 with a probability of a range of between 60 and 70% at least. As a first step in rebuilding the stock, CPCs shall implement a prohibition on retaining on board, transhipping, and landing, whole or in part, North Atlantic shortfin mako caught in association with ICCAT fisheries in 2022 and 2023. In addition, the Recommendation states that the total fishing mortality tonnage (the sum of any retention, dead discards, and post-release mortality of live discards) for this stock shall be no more than 250 tonnes until new SCRS advice is provided to the Commission. During 2022 and 2023 the SCRS and Panel 4 shall work together to test and confirm the appropriateness of the approach to determine possible retention presented in Annex 1 of Rec 21- 09, or alternative approaches, for determining the amount of permissible retention of North Atlantic shortfin mako in the future. Checking other already MSC bluefin tuna certified fisheries, they concluded that these 250 tonnes constitute a limit in the MSC context[102, 103, 104].

To examine the cumulative effects of MSC UoAs on this stock, there are currently a total of six fisheries with actual estimated or observed catches of shortfin mako:
• Usufuku Honten longline bluefin tuna fishery - estimated average 16 t annually
• AGAC Four Oceans Integral Purse Seine Tropical Tuna Fishery – estimated average 8 t annually (and maximum 10.1 t).
• ANABAC Atlantic Purse Seine Fishery – estimated average 2.6 t annually (and maximum 3.2 t).
• US North Atlantic Swordfish, Yellowfin and Albacore Tuna Fishery – estimated average 11.2 t annually.
• Atlantic Ocean Tropical Tuna French Purse Seine Fishery – estimated average 1.3 t annually (and maximum 2.4 t).

[99] https://www.iccat.int/Documents/CVSP/CV074_2017/n_4/CV074041465.pdf
[100] https://www.iccat.int/Documents/CVSP/CV076_2019/n_10/CV07610001.pdf
[101] https://www.iccat.int/Documents/Recs/compendiopdf-e/2021-09-e.pdf
[102] https://fisheries.msc.org/en/fisheries/sathoan-french-mediterranean-bluefin-tuna-artisanal-longline-and-handline-fishery/@@view
[103] https://fisheries.msc.org/en/fisheries/jc-mackintosh-greenstick-handline-and-fishing-rod-bluefin-tuna-fishery/@@assessments
[104] https://fisheries.msc.org/en/fisheries/usufuku-honten-northeast-atlantic-longline-bluefin-tuna-fishery/@@assessments

PI 2.3.1	The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species

• Tuna Alliance Atlantic Albacore Longline Fishery – estimated average 164 individuals annually equivalent to estimated 1.2 t.
• SATHOAN SATHOAN French Mediterranean Bluefin tuna artisanal longline and handline fishery – Unknown at the ACDR stage.
• The current fishery – Unknown at the Pre-assessment stage.

Based on this information from MSC overlapping fisheries, the estimated maximum annual catch, is around 44.1 t. It is important to note that this is likely an overestimate given that shortfin mako catch from other fisheries, such as the Tuna Alliance Atlantic Albacore Longline Fishery are likely in the Southern Hemisphere. Furthermore, a proportion of these individuals captured are also discarded alive. Given Recommendation 21-09 sets the total mortality limit at 250 t, **SG60 and SG80 are considered met**.

In the absence of logbook records (in the current fishery) and observer catches at the ICCAT level, how estimates are determined, and the ratio of individuals discarded and surviving across all overlapping fisheries, **SG100 is considered not met**.

b	**Direct effects**			
	Guide post	Known direct effects of the UoA are likely to not **hinder recovery** of ETP species.	Direct effects of the UoA are **highly likely** to not **hinder recovery** of ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species.
	Met?	Sea turtles: Yes	Sea turtles: No	Sea turtles: No

Rationale

As explained above, interactions with sea turtles are extremely rare (but do happen), although they are not recorded in the logbooks. According to the client cetaceans and birds do not interact with the UoA. Therefore, only sea turtles are being assessed in this pre-assessment.

As stated in in **Section 7.5.1** – Endangered, Threatened and Protected species, three species of sea turtle are likely to interact with the fishery: the Loggerhead turtle (*Caretta caretta*), the Green turtle (*Chelonia mydas*), and the Leatherback turtle (*Dermochelys coriacea*).

Green turtle:
Green turtles reproduce in nesting beaches in Turkey, Cyprus and Syria, and they frequent mainly the Levantine basin (Turkey, Syria, Cyprus, Lebanon, Israel, Egypt) with some foraging areas also in Greece and Libya (Casale et al. 2010 in Casale (2011)).

Loggerhead turtle:
This is thought to be the most abundant species in the Mediterranean, nesting mainly in Greece, Turkey, Cyprus and Libya. At sea, loggerhead turtles frequent the whole basin and especially the area from the Alboran Sea to the Balearic Islands, the Sicily Strait, the Ionian Sea and the wide continental shelves in the north Adriatic, off Tunisia-Libya, off Egypt and off southeast coast of Turkey; some of these foraging grounds (including the Western Mediterranean) are shared with loggerheads from the Atlantic (Casale et al. (2010) in Casale (2011)).

PI 2.3.1	The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species

Leatherback turtle: Although leatherback turtles do get incidentally caught in Mediterranean fisheries in general, the low numbers of individuals involved probably make the Mediterranean fishery a minor threat to the Atlantic populations of this species (Casale et al. 2003 in Casale (2011)).

According to the clients, sea turtle interactions do not appear to be a concern in this fishery. Consistent with the SELPAL study (Poisson et al., 2016), interactions between sea turtles and the SATHOAN longline fishery were considered infrequent although they do exist. In a review of Mediterranean Sea turtle bycatch by Casale (2011), sea turtle interaction rates for the Italian pelagic longline fishery were estimated at 23,600 per annum (the vast majority of interactions and mortalities in this country stemming from the Pelagic lonline), with turtles considered most at risk in the Alboran/Balearic area, the central Mediterranean and the Ionian (Casale, 2011). In the same study, the authors estimate that the annual number of captures by Mediterranean pelagic longlines may well be above 57,000.

Based on all the above, **SG60 is met**.

However, bearing in mind that interactions are not recorded in logbooks, that the UoA does not currently apply appropriately the Best Practice protocol, and there are no observers or EM cameras on board, the AT believes **SG80 is not met**.

c	**Indirect effects**			
	Guide post		Indirect effects have been considered for the UoA and are thought to be **highly likely** to not create unacceptable impacts.	There is a high degree of confidence that there are no significant detrimental indirect effects of the UoA on ETP species.
	Met?		North Atlantic shortfin mako: Yes Green and loggerhead turtle: No Leatherback turtle: Yes	North Atlantic shortfin mako: No Green and loggerhead turtle: No Leatherback turtle: No

Rationale

For the UoA, indirect effects on ETP species might include disturbance around nesting areas / inter-nesting foraging areas; reduced food availability and removal of potential prey species. Note: Discard and post-release mortality is accounted for in the information cited above and is therefore not an indirect effect.

North Atlantic shortfin mako:
Removal of prey – sharks are opportunistic feeders with a varied diet consisting a range of teleosts including barracuda, jacks, dolphinfish, tuna, skipjack and other scombrids, white marlin, and squid, and occasionally stingrays, seabirds, turtles, marine gastropods, crustaceans, carrion from marine mammals, and garbage. Although they are apex predators, the diversity of prey items makes it highly unlikely that the UoA fishery, through its exploitation of mainly bluefin tuna, would lead to unacceptable impacts on any of the ETP shark species through competition. Overall, the AT concludes it is highly unlikely that indirect effects from the UoA through prey removal are creating unacceptable impacts. Therefore, **SG80 is met**.

Leatherback:

PI 2.3.1	The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species

The leatherback turtle does not have nesting sites in the Mediterranean and those individuals present are thought to be visitors from the Atlantic (Casale, 2011). Therefore, the indirect effects of the UoA are highly unlikely to create unacceptable impacts, hence **SG80 is met.**

Green turtle:
According to Marín-Capuz et al (2025) and references therein, **green turtle** nesting sites in the Mediterranean are currently concentrated in the eastern Mediterranean in Turkey, Cyprus and Syria, with minor nesting habitats in Israel, Lebanon and Egyp). However, climate change rising temperatures in the Mediterranean are decreasing the suitability of these areas and producing population feminisation. At the same time, they are potentially increasing the nesting suitability of the central basin for green turtles in the near future. In the past two decades, isolated green turtle nesting events have been detected in regions out of the regular nesting range, namely in Tunisia, Greece and Libya. Their results suggest that we may be witnessing early signs of a shift in the foraging and breeding distribution of the green turtle in the Mediterranean. Modelling under various climate change scenarios predicts an increase in nesting, with higher probabilities in the western Mediterranean.

Loggerhead:
For the loggerhead, Mancino et al. (2022) found a clear westward trend in the centers of gravity of the nests over time). In the 1960s the nests were concentrated in the Aegean Sea and Levantine Sea, with a center of gravity placed to the south-east of Crete. Already in the 1970s, the shift towards west was clear, with the nests occupying Aegean Sea and Levantine Sea plus Ionian Sea and Tunisian Plateau, and with the center of gravity located in the Ionian Sea, 624 Km west of the original point. The trend continued in the years almost linearly (726 km in the 1980s, 520 km in the 1990s, 1189 km in the 2000s) and in the last decade (2010–2020) the center of gravity was located south of the Italian coasts, nearby Sicily, some 1298 km west of the original location. In 2020 at least one turtle nest was registered in all Mediterranean ecoregions.

For green turtles and loggerheads, even though sea turtles are highly migratory, as we currently do not have the records of the possible interactions of the UoA with them, there are no observers or EM cameras on board the vessels of the UoA, and seeing that climate change are possibly making them shift their nesting sites towards the Central and Western Mediterranean (where the UoA fishes), the AT believes that currently we cannot state that the indirect effects of the UoA are highly unlikely to create unacceptable impacts, hence **SG80 is not met**.

Overall, as there has been no dedicated research exploring likely indirect effects by the UoA**, SG100 is not met**.

References

Draft scoring range	60-79
Information gap indicator	More information sought Interactions with ETPs need to be recorded in the logbooks. Best Practice protocol is not appropriately applied, and there are no observers or EM cameras on board.
Data-deficient? (Risk-Based Framework needed)	No

PI 2.3.2 – ETP species management strategy

PI 2.3.2		The UoA has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	**Management strategy in place (national and international requirements)**			
	Guide post	There are **measures** in place that minimise the UoA-related mortality of ETP species, and are expected to be **highly likely to achieve** national and international requirements for the protection of ETP species.	There is a **strategy** in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be **highly likely to achieve** national and international requirements for the protection of ETP species.	There is a **comprehensive strategy** in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to **achieve above** national and international requirements for the protection of ETP species.
	Met?	Yes	Yes	No
Rationale				
All ETP species: - ICCAT Rec. 07-07[105] (and the supplemental Rec. 11-09[106]) on Reducing Incidental Bycatch of Seabirds in Longline Fisheries. This recommendation sets out requirements for recording interactions with seabirds; for CPCs to seek to achieve reductions in levels of seabird by-catch across all fishing areas, seasons and fisheries, through the use of effective mitigation measures; in the area south of 25 degrees South latitude, CPCs shall ensure that all longline vessels use at least two of the mitigation measures in Table 1 (which is therefore not applicable to the UoA); - ICCAT Rec 11-10[107], requires CPCs to (i) require the collection of bycatch and discard data in their existing domestic scientific observer programs and logbook programs; (ii) report the bycatch and discard data collected…to the Secretariat in the format specified by SCRS, in accordance with existing deadlines for data reporting; and (iii) report on steps taken to mitigate bycatch and discards, and on any relevant research in this field as part of their annual reports to ICCAT. 11-10 also suggests where possible, CPCs shall provide existing identification guides for sharks, seabirds and turtles and marine mammals caught in the Convention Area to the ICCAT Secretariat, and the Secretariat shall request sub-regional RFMOs to provide the Commission with relevant identification guides. The Secretariat shall share these guides with the T-RFMO Technical Working Group on Bycatch, as appropriate. - ICCAT Rec. 16-14[108] to establish minimum standards for fishing vessel scientific observer programs, requiring inter alia a minimum of 5% observer coverage of fishing effort in each of the pelagic longline,			

[105] https://www.iccat.int/en/RecRes.asp
[106] https://www.iccat.int/Documents/Recs/compendiopdf-e/2011-09-e.pdf
[107] https://www.iccat.int/documents/recs/compendiopdf-e/2011-10-e.pdf
[108] https://www.iccat.int/Documents/Recs/compendiopdf-s/2016-14-s.pdf

PI 2.3.2	The UoA has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species

purse seine, and, as defined in the ICCAT glossary, bait boat, traps, gillnet and trawl fisheries. For vessels less than 15 meters, where an extraordinary safety concern may exist that precludes deployment of an onboard observer, a CPC may employ an alternative scientific monitoring approach that will collect data equivalent to that specified in this recommendation in a manner that ensures comparable coverage;

- ICCAT Rec. 22-12[109] (which combines, streamlines and amends Recs 10-09 and 13-11) on the bycatch of Sea Turtles in ICCAT Fisheries, requiring purse seine and longline vessels that carry on board de-hookers, line-cutters and basket lifts or dip nets, as appropriate for each gear type and consistent with the "Best practices for sea turtle handling and release" of the FAO Guidelines to reduce sea turtle mortality in fishing operations (2009[110]) ('the FAO guidelines'). CPCs shall endeavour to increase the scientific observer coverage of longline fishing vessels in ICCAT fisheries where encounters with sea turtles have been documented and reported to the SCRS, beyond the minimum level required in Rec. 16-14, to 10% by 1 January 2024. This increase may be achieved through human observers and/or Electronic Monitoring Systems (EMS). This paragraph shall be revised, as appropriate, after the adoption of minimum standards for EMS by ICCAT, based on advice from the SCRS and PWG. However, the alternative scientific monitoring approach referred to in paragraph 4 of Rec. 16-14 remains applicable for vessels under 15 meters in replacement of EMS or observers onboard;
- ICCAT Rec. 24-01[111] replacing Rec 22-01 on a multi-annual conservation and management programme for tropical tunas. In 2025, 2026, and 2027 CPCs shall ensure a minimum of 10% observer coverage on their longline vessels of 20m LOA or greater targeting bigeye, yellowfin and/or skipjack in the Convention Area. This shall be achieved through the presence of a human observer on board in accordance with Annex 7 or a combination of human observers and EMS consistent with Rec. 16-14, unless a derogation as outlined in that measure applies and EMS can be used to cover the required minimum percentage of human observers as advised by the SCRS; CPCs shall report the information collected by the observers or by a combination of observers and EMS from the previous year in accordance with Rec. 23-18 and Rec. 16-14 to the ICCAT Secretariat and to the SCRS taking into account CPC confidentiality requirements.
- Recommendation GFCM/35/2011/3[112] on reducing incidental bycatch of seabirds in fisheries in the GFCM area of application includes requirements for monitoring and recording of seabird bycatch, and provisions for exploring options for the mitigation of seabirds bycatch in the Mediterranean fisheries; launching a process, to be carried out in coordination with other RFMOs, with a view to reducing incidental by-catch of seabirds in fisheries in the GFCM Competence Area;
- Recommendation GFCM/35/2011/4[113] on the incidental bycatch of sea turtles in fisheries in the GFCM area of application includes requirements for monitoring and recording of sea turtle bycatch, requires the adoption of sea turtle bycatch mitigation measures (although these are not defined), requires all sea turtles to be safely handled and released and requires all vessels using longlines in the GFCM area

[109] https://www.iccat.int/Documents/Recs/compendiopdf-e/2022-12-e.pdf
[110] 3http://www.fao.org/docrep/012/i0725e/i0725e.pdf
[111] https://iccat.int/Documents/Recs/compendiopdf-s/2024-01-s.pdf
[112] https://faolex.fao.org/docs/pdf/mul201386.pdf
[113] https://www.fao.org/faolex/results/details/es/c/LEX-FAOC201486/

PI 2.3.2	The UoA has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species

of application to carry on board safe handling, disentanglement and release equipment, capable of releasing sea turtles unharmed and in a manner that maximizes the probability of their survival.

- Resolution GFCM/46/2023/4[114] on a regional plan of action to monitor and mitigate interactions between fisheries and vulnerable species in the Mediterranean and the Black Sea adopts the regional plan of action to monitor and mitigate interactions between fisheries and vulnerable species in the Mediterranean and the Black Sea (RPOAVUL), contained in the annex to the resolution. The overall objectives of the RPOA-VUL are to draw up and develop adequate monitoring systems, testing and developing mitigation measures to reduce and, where possible, eliminate: i) the incidental catch of elasmobranchs, sea turtles, seabirds and marine mammals and associated fishing mortality; and ii) depredation activities of marine megafauna in fishing gear.
- EU Birds Directive (EU, 2009): The Birds Directive requires all Member States to protect all wild bird species and protect and restore their habitats.
- EU Habitats Directive (EU, 1992): Sea turtles, particularly the loggerhead and green turtle, are listed under Annex II and IV (listing under Annex IV affords strict protection).
- Catch restrictions are as set out in Regulation: (EU) 2019/1241 of the European Parliament and of the Council of 20 June 2019 on the conservation of fisheries resources and the protection of marine ecosystems through technical measures (EU, 2019) and the latest EU fishing opportunities (e.g. EU (2024a)). These regulations: Prohibit retaining on board, transhipping or landing any part or whole carcass of North Atlantic shortfin mako (in the ICCAT CA) and bigeye thresher sharks (in any fishery).

North Atlantic shortfin mako:
Rec. 21-09[115] sets out a prohibition on retaining on board, transhipping and landing, whole or in part, North Atlantic shortfin mako caught in association with ICCAT fisheries in 2022 and 2023 as a first step in rebuilding the stock and requires implementation of best practice handling and release techniques. The recommendation includes requirements for reporting via Task 1 and Task 2 data systems and there is requirement for recommendation review after the next stock assessment.

Moreover, as explained in detail in Principle 3, at the EU level, the objectives established by ICCAT are transposed and implemented through the Common Fisheries Policy (CFP), which Italy follows as an EU member state. The CFP commits to achieving Maximum Sustainable Yield (MSY), ensuring ecosystem-based management, and minimizing environmental impacts. These aims are reflected in Italian national policy and in the operational standards observed by fisheries such as the UoA, a recognized producer organization operating in the Tyrrhenian, Adriatic and Ionian Seas. This fishery targets bluefin tuna using longlines and handlines and participates in ICCAT's control and reporting schemes, including electronic documentation systems (eBCD) and vessel monitoring protocols.

In addition, the OPPAP has clearly defined and measurable short- and long-term objectives that are explicitly integrated into its fishery-specific management system. These objectives are directly aligned with achieving the outcomes expressed on target stock (bluefin tuna) and accessory commercial species. As stated in its Statute

[114] https://gfcm.sharepoint.com/:b:/g/CoC/EVfBBci0GElBm-kxYbJJrYUBxCcYHsbGCjt9_Veqfq8HcQ
[115] https://www.iccat.int/Documents/Recs/compendiopdf-e/2021-09-e.pdf

PI 2.3.2	The UoA has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species

and Internal Regulations, OPPAP promotes profitable and sustainable fishing activities among its members in full compliance with EU regulations (notably Regulation (EU) 1380/2013 and Regulation (EU) 1379/2013). Its objectives include avoiding unwanted catches, ensuring traceability, reducing environmental impact, enhancing gear selectivity, and promoting responsible fishing practices. Furthermore, through structured mechanisms such as Production and Marketing Plans, quota management, internal rules of compliance, and control measures, OPPAP demonstrates a functional, transparent, and adaptive approach to achieving ecological sustainability and minimizing environmental harm from fishing operations.

Locally, best practice protocols (which are voluntary) have been developed through collaboration between fishers and scientific partners to promote sustainable fishing and minimize bycatch.

Therefore, there is a strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species. **SG60 and SG80 are met**.

However, the UoA currently does not record interactions with sharks, turtles or other ETPs (hence, the Best Practice protocol is not being appropriately applied). Moreover, there are no observers or EM cameras on board. Therefore, **SG100 is not met**.

b	**Management strategy in place (alternative)**			
	Guide post	There are **measures** in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a **strategy** in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a **comprehensive strategy** in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species.
	Met?	NA	NA	NA
Rationale				
NA when SIa is scored.				
c	**Management strategy evaluation**			
	Guide post	The measures are **considered likely** to work, based on **plausible argument** (e.g., general experience, theory or comparison with similar fisheries/species).	There is an **objective basis for confidence** that the measures/strategy will work, based on **information** directly about the fishery and/or the species involved.	The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a **quantitative analysis** supports **high confidence**

PI 2.3.2		The UoA has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species		
				that the strategy will work.
	Met?	Yes	No	No
Rationale				
All of the measures/strategy listed in SIa provide a legal framework for the protection of ETP species and aim to minimise UoA-related mortality through non-retention policies and best handling and release practices. In addition, locally, best practice protocols (which are voluntary) have been developed through collaboration between fishers and scientific partners to promote sustainable fishing and minimize bycatch. Overall, there is a plausible argument that the measures are considered likely to work and **SG60 is met**. However, currently the UoA does not register interactions with ETPs, there are no physical or EM observers on board the vessels, and the Best Practice protocol is not being appropriately applied. Therefore, there is not an objective basis for confidence that the measures/strategy will work. **SG80 is not met**.				
d	**Management strategy implementation**			
	Guide post		There is some **evidence** that the measures/strategy is being implemented successfully.	There is **clear evidence** that the strategy/comprehensive strategy is being implemented successfully and **is achieving its objective as set out in scoring issue (a) or (b).**
	Met?		No	No
Rationale				
Currently the UoA does not register interactions with ETPs, there are no physical or EM observers on board the vessels, and the Best Practice protocol is not being appropriately applied. Therefore, there is not evidence that the measures/strategy is being implemented successfully. **SG80 is not met**.				
e	**Review of alternative measures to minimize mortality of ETP species**			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.

PI 2.3.2		The UoA has in place precautionary management strategies designed to: - meet national and international requirements; - ensure the UoA does not hinder recovery of ETP species. Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species		
	Met?	Yes	No	No
Rationale				
There is a specific ICCAT Sub-Committee on Ecosystems, which meets annually and exists to review alternative bycatch management strategies, mitigation measures and stock status with respect to improving existing ICCAT conservation and management measures and provide recommendations to the SC and Commission (see the 2024 latest report: https://www.iccat.int/Documents/Meetings/Docs/2024/Reports/2024_SC-ECO_ENG.pdf). This is undertaken through a review of catch, interaction and compliance data with Recommendations from a variety of sources (observer, logbooks, port sampling). A variety of information papers, datasets and meeting documents presented to SCECO 2024 can be found summarised here: https://www.iccat.int/Documents/Meetings/Docs/2024/Reports/2024_SC-ECO_ENG.pdf, which provide CPCs with the best available science on ETP mitigation in ICCAT fisheries. Recommendations from these meetings are developed and provided to the ICCAT SC and Commission. In the 2024 SCECO report it was presented, for example, a review of sea turtle interactions in the Mexican yellowfin tuna longline fleet in the Gulf of Mexico and the Caribbean Sea; advances on the collaborative work to assess sea turtle bycatch in pelagic longline and tuna purse seine fleets. The project has data from the Atlantic Ocean, the Indian Ocean, and the Mediterranean Sea; the work conducted on the Evaluation of ICCAT fisheries impact on marine turtles in the Mediterranean Sea; the General Fisheries Commission of the Mediterranean (GFCM) Seas' actions to mitigate incidental catch of vulnerable species. In addition, Recs. 07-07 and 11-09 were reviewed against ACAP Best Practice Advice for reducing the impact of pelagic longline fisheries on seabirds. In addition, it was decided to Continue with the review process of the new mitigation measures for seabird bycatch; and Continue to review and refine the list of bycatch species - the ICCAT databases contain a list of different taxa that must be reviewed by specialists. Therefore, there is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species. However, these are not implemented as appropriate (i.e., no logbook records, no physical or EMS on board, and the Best Practice protocol is not being appropriately applied). Therefore, **only SG60 is met**.			
References				
Draft scoring range		60-79		
Information gap indicator		More information sought UoA-related mortality of ETP species is unknown as ETP interactions are not reported in logbooks.		

PI 2.3.3 – ETP species information

PI 2.3.3		Relevant information is collected to support the management of UoA impacts on ETP species, including: - Information for the development of the management strategy; - Information to assess the effectiveness of the management strategy; and - Information to determine the outcome status of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	**Information adequacy for assessment of impacts**			
	Guide post	Qualitative information is **adequate to estimate** the UoA related mortality on ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Qualitative information is **adequate to estimate productivity and susceptibility** attributes for ETP species.	Some quantitative information is **adequate to assess** the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.	Quantitative information is available to assess with a high degree of certainty the **magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status** of ETP species.
	Met?	Yes	No	No
Rationale				
As explained in **Section 7.5.1** – Endangered, Threatened and Protected species, no ETPs are recorded in logbooks. However, according to the client and skippers interviewed during the site visit: - *Isurus oxyrinchus* (shortfin mako shark) are rarely caught and released alive by cutting the line. - Interactions with sea turtles are also extremely rare; and cetaceans and seabirds are absent. Therefore, there is some qualitative information adequate to estimate the UoA related moratlity on ETP species, hence, **meeting SG60**. However, as there is no quantitative information recorded by the UoA on interactions with ETPs and there are no physical or EMS observers on board, **SG80 is not met**.				
b	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage the impacts on ETP species.	Information is adequate to measure trends and support a **strategy** to manage impacts on ETP species.	Information is adequate to support a **comprehensive strategy** to manage impacts, minimize

PI 2.3.3		Relevant information is collected to support the management of UoA impacts on ETP species, including: - Information for the development of the management strategy; - Information to assess the effectiveness of the management strategy; and - Information to determine the outcome status of ETP species		
				mortality and injury of ETP species, and evaluate with a **high degree of certainty** whether a strategy is achieving its objectives.
	Met?	No	No	No
Rationale				
As explained above, there is no quantitative information recorded by the UoA on interactions with ETPs and there are no physical or EMS observers on board, therefore, the information is not adequate to support the existing measures (see PI 2.3.2) to manage the impacts on ETP species.				
References				
Draft scoring range		<60		
Information gap indicator		More information sought No quantitative information is recorded by the UoA on interactions with ETPs and there are no physical or EMS observers on board.		

PI 2.4.1 – Habitats outcome

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates		
Scoring Issue		SG 60	SG 80	SG 100
a	**Commonly encountered habitat status**			
	Guide post	The UoA is **unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	Met?	Yes	Yes	Yes
Rationale				
The gear impact on the water column, i.e., the pelagic habitat (considered as the commonly encountered habitat for this UoA, **Table 17**), is considered negligible. The gear passes through these habitats on shooting and hauling and remains in situ during the set. The gear has no long-term impacts on these habitats after it is hauled, unless it is lost. However, according to interpretation INT-0221[116], gear loss should be considered in the minor habitats SIc. Therefore **SG60, SG80 and SG100 are met**.				
b	**VME habitat status**			
	Guide post	The UoA is **unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	Met?	NA	NA	NA
Rationale				
As there are no VMEs, this SI does not need be scored.				
c	**Minor habitat status**			
	Guide post			There is **evidence** that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where

[116] https://mscstandards.my.site.com/interpret/s/interpretation/a01N200000E4G1MIAV/int0221

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates		
				there would be serious or irreversible harm.
	Met?			No
Rationale				
According to Interpretation INT-0221, for pelagic habitat/gear, the minor habitat(s) would be anything the gear may accidentally contact when gear loss/malfunction occurs. Gear loss may consist of monofilament and/or hooks, which would interact with the commonly encountered habitat and eventually encounter the seabed. Interactions with benthic features, at a scale where irreversible impacts on habitat types becomes a risk, are only likely to occur when longlines are dragged across the seabed, which is extremely unlikely. However, as there is no evidence from the UoA, **SG100 cannot be met**.				
References				
List any references here, including hyperlinks to publicly-available documents.				
Overall Performance Indicator (PI) Rationale				
Insert sufficient rationale to support the conclusion for the Performance Indicator, making direct reference to each scoring issue (delete if not appropriate – e.g. rationale is provided for each Scoring Issue).				

Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI
Data-deficient? (Risk-Based Framework needed)	No

PI 2.4.2 – Habitats management strategy

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
Scoring Issue		SG 60	SG 80	SG 100
a	**Management strategy in place**			
	Guide post	There are **measures** in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a **partial strategy** in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a **strategy** in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	Yes	Yes	No
Rationale				
Considering that this fishery is extremely unlikely to impact benthic habitats, the term 'if necessary' applies here and management measures should not be required. **SG60 and SG80 are therefore met by default**. As there is no strategy specifically aimed at to managing the impacts of the fishery on habitat types (either directly or through ghost fishing), as required by MSC for a score of 100. **SG100 is therefore not met**.				
b	**Management strategy evaluation**			
	Guide post	The measures are **considered likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some **objective basis for confidence** that the measures/partial strategy will work, based on **information directly about the UoA and/or habitats** involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on **information directly about the UoA and/or habitats** involved.
	Met?	Yes	Yes	Yes
Rationale				
The 'partial strategy' is the nature of the fishery (pelagic only). There is therefore high confidence that it works, based on information directly about the gear type and deployment, **SG60, SG80 and SG100 are met**.				
c	**Management strategy implementation**			
	Guide post		There is **some quantitative evidence** that the measures/partial strategy is being implemented successfully.	There is **clear quantitative evidence** that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
	Met?		Yes	Yes
Rationale				

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
VMS data as well as the logbooks data give clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a). **SG80 and SG100 are met**.				
d	**Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs**			
	Guide post	There is **qualitative evidence** that the UoA complies with its management requirements to protect VMEs.	There is **some quantitative evidence** that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is **clear quantitative evidence** that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	NA	NA	NA
Rationale				
As there are no VMEs, this SI does not need to be scored.				
References				
Draft scoring range		≥80		
Information gap indicator		Information sufficient to score PI		

PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
Scoring Issue		SG 60	SG 80	SG 100
a	**Information quality**			
	Guide post	The types and distribution of the main habitats are **broadly understood**. OR If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the types and distribution of the main habitats.	The nature, distribution and **vulnerability** of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA. OR If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.	The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.
	Met?	Yes	Yes	No
Rationale				
The commonly encountered habitat impacted by the fishery is the water column on which the effect of a pelagic longline is negligible. Therefore, **SG60 and SG80 are met**. **SG100 is not met** because the SG requires the distribution of all habitats (pelagic and benthic) to be known over their range.				
b	**Information adequacy for assessment of impacts**			
	Guide post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear. OR If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. OR If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the consequence and spatial	The physical impacts of the gear on all habitats have been quantified fully.

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
			attributes of the main habitats.	
	Met?	Yes	Yes	No
Rationale				
Since the gear does not interact with habitats, the (lack of) physical impacts on the main habitats are clear. **SG60 and SG80 are met**. **SG100 is not met** because the physical impacts of the gear on all habitats have not been quantified fully.				
c	**Monitoring**			
	Guide post		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in all habitat distributions over time are measured.
	Met?		Yes	No
Rationale				
The only commonly encountered habitat is the water column. VMS data and compliance with area closures enable any increase in risk to benthic features to be detected. **SG80 is met**. Because changes in all habitat distributions are not measured over time, **SG100 is not met.**				
References				
List any references here, including hyperlinks to publicly-available documents.				
Overall Performance Indicator (PI) Rationale				
Insert sufficient rationale to support the conclusion for the Performance Indicator, making direct reference to each scoring issue (delete if not appropriate – e.g. rationale is provided for each Scoring Issue).				
Draft scoring range		≥80		
Information gap indicator		Information sufficient to score PI		

PI 2.5.1 – Ecosystem outcome

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	**Ecosystem status**			
	Guide post	The UoA is **unlikely** to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is **highly unlikely** to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	Met?	Yes	Partial	No

Rationale

To better evaluate the potential effect of this fishery on ecosystem structure and function the AT has considered the following elements:

1. Primary and Secondary species. According to the data provided by the client, there are some catches of associated species (main primary species: Albacore, Swordfish and Argentine squid (bait); minor primary species: sardine from the Adriatic and the North Tyrrhenian Sea; secondary minor: Dolphinfish, Mediterranean spearfish, and round sardinella (bait), and blue shark assessed as main to be precautionary). Due to the tonnage caught and the overall removals, the effects on those species are considered small to negligible.
2. ETP species interactions. According to the client and skippers interviewed during the site visit: shortfin mako shark are rarely caught and released alive by cutting the line; and interactions with sea turtles are also extremely rare; cetaceans and seabirds are absent. For shortfin mako, in particular, the stock is known and highly likely to be within the international limits. For turtles, however, direct effects of the UoA are not highly likely to not hinder recovery of these species as the UoA does not record the interactions with ETPs and there is a lack of observers (physical or EMS) on board.
3. Habitats. There are no habitat effects since the gear does not encounter the seabed.
4. Overall removal of bluefin from the ecosystem. The UoA removed about 83 and 141 tonnes of BFT in 2022 and 2023, respectively. Compared with the overall removals of BFT in the Mediterranean[117], the removals of the fishery only consisted of 0.34 and 0.5 % of total removals during those years. These amounts are very small and are not likely to significantly affect other species that may depend on bluefin.
5. BFT as predator and prey. As explained in **Section 7.5.1** – Ecosystem, bluefin tuna in the Mediterranean Sea are apex predators with a diverse diet, primarily consisting of fish, squid, and crustaceans (Battaglia et al., 2013). Their diet composition varies based on factors like age, location, and prey availability[118]. From an ecological point of view, *T. thynnus* plays the significant role of top predator in the pelagic trophic web, regulating and controlling the ecosystem balance and prey biomass by a

[117] https://www.iccat.int/Documents/BienRep/REP_EN_24-25-I-2.pdf

[118] https://www.sciencedirect.com/science/article/abs/pii/S016578361830225X#:~:text=Interannual%20and%20geographic%20differences%20were,4.39%20and%204.63%2C%20respectively).

PI 2.5.1	The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function

constant predation, assuring a positive control on biodiversity by contributing to maintain its natural level. As reported by several authors (Sinopoli et al. 2004; Sarà and Sarà 2007; Karakulak et al. 2009; Romeo et al. 2011), *T. thynnus* feeds on a broad spectrum of prey and has been described as an opportunistic feeder. Moreover, the Atlantic bluefin tuna is a long-lived fish (Santamaria et al. 2009), and its feeding habits are influenced by ontogenetic changes (Sarà and Sarà 2007), with a wide range of prey including zooplankton, fishes, cephalopods and crustaceans (Pardo et al., 2024). In the last decade, several efforts have been made by the scientific community to investigate the biology and ecology of *T. thynnus*, and new studies employing innovative techniques (i.e., archival tags, natural markers as genetics or otolith chemistry) shed light on tuna migration, trans-oceanic movements and the utilization of main spawning grounds and foraging areas (Rooker et al. 2003, 2006, 2007; Karakulak et al. 2004; Block et al. 2005; De Metrio et al. 2005). In the Mediterranean Sea, young-of-the-year tuna diet was investigated using stomach content analysis (Sinopoli et al. 2004), while feeding behavior of adult fishes was studied both by carbon- and nitrogen-stable isotopes and stomach analyses (Sarà and Sarà 2007; Karakulak et al. 2009). However, a significant lack on the Atlantic bluefin tuna feeding habits is still palpable, and it is mainly due to the difficulty in monitoring the diet of this species during the whole year because of their migratory behavior. Battaglia et al (2013), studied the trophic behavior of the Atlantic bluefin tuna in the Strait of Messina (central Mediterranean Sea) and found that for adult bluefin tuna, teleosts represent the main fraction of food during spring season, even if cephalopods and crustaceans can be considered other important source of energy, while remaining systematic taxa (Hydrozoa and Tunicata) have a negligible impact on the diet. On the contrary, the diet of young-of-the-year *T. thynnus* seems to vary depending on area and available prey, relying mainly on cephalopods and fishes in the northern Tyrrhenian Sea (Piccinetti and Piccinetti Manfrin 1970), crustaceans and fishes in the Ligurian Sea (Orsi Relini et al. 1998), whereas fishes, followed by crustaceans and cephalopods, were the most abundant prey items in the southern Tyrrhenian and in the western Mediterranean (Sanz Brau 1990; Sinopoli et al. 2004). But bluefin tuna also play a key role in the Mediterranean food web as prey. They can be preyed upon by larger marine animals like sharks and marine mammals (De Maddalena and Heim, 2021; Esteban et al., 2014; Calogero et al., 2021; Le Gallic et al., 2021; Ferter et al., 2024).

From all the above, the UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Hence, **SG60 is met**.

However, as explained above, the logbook is not properly filled in (there were by-catch species missing from the data provided by the client that were later indicated during the site visit; ETP interactions are not recorded in the lobooks), there are no observers (physical or EMS) on board, and the Best Practice protocol is not being appropriately applied. Therefore, **SG80 is only partially met**.

References

List any references here, including hyperlinks to publicly-available documents.

Overall Performance Indicator (PI) Rationale

Insert sufficient rationale to support the conclusion for the Performance Indicator, making direct reference to each scoring issue (delete if not appropriate – e.g. rationale is provided for each Scoring Issue).

Draft scoring range	60-79

PI 2.5.1	The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function
Information gap indicator	More information sought The logbook is not properly filled in (some bycatch species were missing and ETP interactions are not recorded), there are no observers (physical or EMS) on board, and the Best Practice protocol is not being appropriately applied.
Data-deficient? (Risk-Based Framework needed)	No

PI 2.5.2 – Ecosystem management strategy

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
a	**Management strategy in place**			
	Guide post	There are **measures** in place, if necessary which take into account the **potential impacts** of the UoA on key elements of the ecosystem.	There is a **partial strategy** in place, if necessary, which takes into account **available information and is expected to restrain impacts** of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a **strategy** that consists of a **plan**, in place which contains measures to **address all main impacts of the UoA** on the ecosystem, and at least some of these measures are in place.
	Met?	Yes	No	No

Rationale

ICCAT Resolution 15-11[119] concerning the application of an ecosystem approach to fisheries management requires that the Commission should apply an ecosystem-based approach to fisheries management. In implementing said approach, the Commission should *inter alia*:
a) consider the interdependence of stocks and species belonging to the same ecosystem or associated with or dependent upon target stocks;
b) consider the impacts of fishing, other relevant human activities, and environmental factors on target stocks, non-target species and species belonging to the same ecosystem or associated with or dependent upon target stocks in the Convention area; and
c) minimize negative impacts of fishing activities on the marine ecosystem.

ICCAT further adopted Resolution 23-23[120] on the implementation of biodiversity conservation instruments following the establishment of the Agreement under the United Nations Convention on the Law of the Sea on

[119] https://www.iccat.int/Documents/Recs/compendiopdf-e/2015-11-e.pdf
[120] https://www.iccat.int/Documents/Recs/compendiopdf-e/2023-23-e.pdf

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function

the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction[121], and the Kunming-Montreal Global Biodiversity Framework under the Convention on Biological Diversity[122].

Moreover, as explained in detail in Principle 3, at the EU level, the objectives established by ICCAT are transposed and implemented through the Common Fisheries Policy (CFP), which Italy follows as an EU member state. The CFP commits to achieving Maximum Sustainable Yield (MSY), ensuring ecosystem-based management, and minimizing environmental impacts. These aims are reflected in Italian national policy and in the operational standards observed by fisheries such as the UoA., a recognized producer organization operating in the Tyrrhenian, Adriatic and Ionian Seas. This fishery targets bluefin tuna using longlines and handlines and participates in ICCAT's control and reporting schemes, including electronic documentation systems (eBCD) and vessel monitoring protocols.

In addition, the OPPAP has clearly defined and measurable short- and long-term objectives that are explicitly integrated into its fishery-specific management system. These objectives are directly aligned with achieving the outcomes expressed on target stock (bluefin tuna) and accessory commercial species. As stated in its Statute and Internal Regulations, OPPAP promotes profitable and sustainable fishing activities among its members in full compliance with EU regulations (notably Regulation (EU) 1380/2013 and Regulation (EU) 1379/2013). Its objectives include avoiding unwanted catches, ensuring traceability, reducing environmental impact, enhancing gear selectivity, and promoting responsible fishing practices. Furthermore, through structured mechanisms such as Production and Marketing Plans, quota management, internal rules of compliance, and control measures, OPPAP demonstrates a functional, transparent, and adaptive approach to achieving ecological sustainability and minimizing environmental harm from fishing operations

In Europe, the adoption of ecosystem-based management (EBM) is embedded in four main policy instruments for marine governance; these include the the Marine Strategy Framework Directive[123] (MSFD), which aims to achieve or maintain 'Good Environmental Status' (GES) of the European marine waters; the EU Biodiversity Strategy to 2030[124], which aims at halting the loss of biodiversity and ecosystem services by protecting at least 30% of the sea and establishing a network of marine protected areas (MPAs); the Common Fishery Policy (CFP[125]), which aims, among other targets, at moving from the traditional single stock management towards an Ecosystem-Based Fisheries Management (EBFM); and the Maritime Spatial Planning Directive [126](MSP), which aims at promoting the sustainable growth of maritime economies, the sustainable development of marine areas and sustainable use of marine resources (Piroddi et al., 2022).

When developing their marine strategies, Member States are required to coordinate with each other and third countries though existing regional cooperation structures. In the Mediterranean, the *Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean* was adopted in 1995 and builds on UNEP's Mediterranean Action Plan (MAP) established in 1975. The aim is to protect the Mediterranean marine and coastal environment while boosting regional and national plans to achieve sustainable development (the latest Conference of the Parties was held in November 2024 - COP29). The

[121] https://www.un.org/bbnjagreement/en
[122] https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf
[123] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008L0056
[124] https://faolex.fao.org/docs/pdf/eur198188.pdf
[125] https://eur-lex.europa.eu/eli/reg/2013/1380/oj
[126] https://eur-lex.europa.eu/eli/dir/2014/89/oj/eng

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function

objectives of the current MAP Medium-Term Strategy (MTS) 2022-2027[127] are detailed in in **Section 7.5.1 – Ecosystems**.

The scope of work carried out in the context of the MAP includes the Regional Activity Centre for Specially Protected Areas (RAC/SPA) whose responsibility is: *"facilitation and promotion of research development to bridge knowledge gaps on marine and coastal biodiversity; contribution to inventorying, mapping and monitoring Mediterranean marine and coastal biodiversity and Specially Protected Areas; assessment and mitigation of the impact of threats on marine and coastal biodiversity, including from unsustainable fisheries practices."*[128] The RAC/SPA 1995 protocol[129], most recently updated in 2017 (SPA/BD_Protocol, 2017), requires each CP to:

- Take the necessary measures to: (a) protect, preserve and manage in a sustainable and environmentally sound way areas of particular natural or cultural value, notably by the establishment of specially protected areas; (b) protect, preserve and manage threatened or endangered species of flora and fauna;
- Cooperate, directly or through the competent international organizations, in the conservation and sustainable use of biological diversity in the area to which this Protocol applies;
- Identify and compile inventories of the components of biological diversity important for its conservation and sustainable use;
- Adopt strategies, plans and programmes for the conservation of biological diversity and the sustainable use of marine and coastal biological resources and integrate them into their relevant sectoral and intersectoral policies;
- Monitor the components of biological diversity referred to in paragraph 3 and identify processes and categories of activities which have or are likely to have a significant adverse impact on the conservation and sustainable use of biological diversity, and monitor their effects; and
- Apply the measures provided for in this Protocol without prejudice to the sovereignty or the jurisdiction of other Parties or other States. Any measures taken by a Party to enforce these measures shall be in accordance with international law.

In 2008, the Contracting Parties to the Barcelona Convention adopted Decision IG.17/627[130], which sets out the Ecosystem Approach Roadmap to achieving the Good Environmental Status (GES) of the Mediterranean Sea and Coast. Decision IG.22/728[131] sets out the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast (IMAP) and is based on a six-year cycle and on data deriving from the implementation of integrated national monitoring and assessment programmes by the Contracting Parties. IMAP encompasses 11 Ecological Objectives and related targets covering pollution and marine litter, biodiversity, non-indigenous species, coastal ecosystems, and hydrography. Monitoring is ensured through 27 mandatory and candidate Common Indicators (CI). The latest Mediterranean Quality Status Report (MED QSR) was issued in 2023 (UNEP/MED, 2023[132]).

[127] https://spa-rac.org/en/decision/download/1574/unep-map-medium-term-strategy-2022-2027?type=en#:~:text=The%202022%2D2027%20Medium%2DTerm,development%20of%20the%20coastal%20regions.
[128] https://www.unep.org/unepmap/what-we-do/monitoring-and-assessments
[129] https://www.rac-spa.org/sites/default/files/protocole_aspdb/protocol_eng.pdf
[130] https://wedocs.unep.org/bitstream/handle/20.500.11822/7287/08ig17_10_annex5_17_06_eng.pdf
[131] https://wedocs.unep.org/bitstream/handle/20.500.11822/6090/16ig22_28_22_07_eng.pdf
[132] https://www.unep.org/resources/annual-report/mediterranean-quality-status-report-2023-med-qsr

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function

Finally, The RAC/SPA 1995 protocol has enabled the establishment of Specially Protected Areas of Mediterranean Importance (SPAMI) for the protection of areas of particular natural or cultural value and the protection, preservation and management of threatened or endangered species of flora and fauna[133]. Eight of these SPAMIs are located in the UoA area.

Overall, there are measures in place, if necessary which take into account the potential impacts of the UoA on key elements of the ecosystem. Thus, **SG60 is met**.

However, as explained in PI 2.5.1, the logbook is not properly filled in (there were by-catch species missing from the data provided by the client that were later indicated during the site visit; ETP interactions are not recorded in the lobooks), there are no observers (physical or EMS) on board, and the Best Practice protocol is not being appropriately applied. Therefore, as SG80 in PI 2.5.1 is only partially met, the AT cannot conclude that there is a partial strategy in place, if necessary, which takes into account available information and is expected to restrain impacts of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance. Hence, **SG80 is not met**.

	Management strategy evaluation			
b	Guide post	The **measures** are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar UoAs/ ecosystems).	There is **some objective basis for confidence** that the measures/ partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved.	**Testing** supports **high confidence** that the partial strategy/ strategy will work, based on information directly about the UoA and/or ecosystem involved.
	Met?	Yes	No	No

Rationale

Collectively, the approaches implemented are working toward a common goal of maintaining ecosystem structure and function throughout the Mediterranean Sea and are encouraging sustainable exploitation of marine resources, **SG60 is met**.

Consistently with the MSFD Mediterranean sub-regions, the post-2020 SAPBIO identifies four sub-regions (**Figure 20**) within the Mediterranean for focused conservation efforts: the Western Mediterranean, the Ionian and Central Mediterranean, the Adriatic Sea, and the Aegean and Levantine Seas. For our UoA, only the three first subregions are relevant, i.e., the Western Mediterranean, the Ionian and Central Mediterranean, the Adriatic Sea. As explained in detail in **Section 7.5.1** – **Ecosystems** these are well-studied, with plenty of available data on species, fishing impact and functional relationships which appropriately help the management decision-making process.

[133] https://www.rac-spa.org/sites/default/files/doc_spamis/v3.png

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Piroddi et al. (2022), for example, developed a spatial–temporal Ecopath with Ecosim (EwE)[134] model for the Mediterranean Sea for the period 1995–2016 to identify spatial patterns and mean temporal changes of marine biodiversity, community biomasses and trophic indices in the region. The spatial biomass distribution of all the functional groups in the model (from planktonic-habitat groups to invertebrates, pelagic and demersal fish, sea turtles, marine mammals and marine birds) was hindcasted, for the 1995–2016 period, considering their ecological niche and their trophic interactions with prey and predators (**Figure 17**). The study constitutes the first attempt to build a coupled spatial–temporal hydrodynamic biogeochemical (GETM-MedERGOM) and full food-web model (EwE) for the whole Mediterranean Sea, using multiple trophic levels (spanning from phytoplankton to marine mammals) over a long timespan (decades) and spatial scale (~8×8 km). Based on all this, the AT considered the measures/partial strategy are considered likely to work. Hence, **SG60 is met**. However, the fishers in the UoA do not properly fill the logbook in (there were by-catch species missing from the data provided by the client that were later indicated during the site visit; ETP interactions are not recorded in the lobooks), there are no observers (physical or EMS) on board. Therefore, the AT cannot have some objective basis for confidence that the measures/ partial strategy will work. Thus, **SG80 is not met**.			
c	**Management strategy implementation**			
	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	Met?		No	No
Rationale				
As explained in PI 2.3.2, currently, the UoA does not register interactions with ETPs and there are no physical or EM observers on board the vessels. In addition, PI 2.5.1 shows that irreversible impacts are only partially highly unlikely. Moreover, there is systematic non-compliance (see PI 3.2.3). Overall, the AT team cannot state that there is some evidence that the partial strategy is being implemented successfully - **SG80 is not met**.				
References				
Draft scoring range		60-79		
Information gap indicator		More information sought		

[134] Ecopath with Ecosim (EwE) is a free ecological/ecosystem modeling software suite. EwE has three main components: Ecopath – a static, mass-balanced snapshot of the system; Ecosim – a time dynamic simulation module for policy exploration; and Ecospace – a spatial and temporal dynamic module primarily designed for exploring impact and placement of protected areas (https://ecopath.org/).

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function
	The UoA does not register interactions with ETPs and there are no physical or EM observers on board the vessels

PI 2.5.3 – Ecosystem information

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem		
Scoring Issue		SG 60	SG 80	SG 100
a	**Information quality**			
	Guide post	Information is adequate to **identify** the key elements of the ecosystem.	Information is adequate to **broadly understand** the key elements of the ecosystem.	
	Met?	Yes	No	
Rationale				
As explained in the PIs above, the information is only adequate to identify the key elements of the ecosystem. But due to the fact that the logbooks are not properly filled in (ETPs interactions are not registered), information on bycatch species is not accurate (evidenced in the site visit), and there are no observers (physically or EMS) on board, the AT cannot conclude that Information is adequate to broadly understand the key elements of the ecosystem, therefore **SG60 is met**, but **not SG80**.				
b	**Investigation of UoA impacts**			
	Guide post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but **have not been investigated** in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and **some have been investigated in detail**.	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and **have been investigated in detail**.
	Met?	Yes	No	No
As explained in SIa, the AT can only conclude that main impacts of the UoA on the key ecosystem elements can be inferred from existing information, but have not been investigated in detail, therefore, **meeting SG60**. However, due to the lack of proper information on ETPs and some bycatch species, **SG80 is not met**.				
c	**Understanding of component functions**			
	Guide post		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are **known**.	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are **understood**.
	Met?		No	No
Rationale				

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem		
As per the same rationale above, as not all components in the ecosystem are currently known, **SG80 is not met**.				
d	**Information relevance**			
	Guide post		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components **and elements** to allow the main consequences for the ecosystem to be inferred.
	Met?		No	No
Rationale				
Same rationale as SIc.				
e	**Monitoring**			
	Guide post		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	Met?		No	No
Rationale				
As per above, due to the lack of proper information on ETPs and some bycatch species, the AT cannot conclude that adequate data are collected to detect any increase in risk level. **SG80 is, therefore, not met**.				
References				
List any references here, including hyperlinks to publicly-available documents.				
Overall Performance Indicator (PI) Rationale				
Insert sufficient rationale to support the conclusion for the Performance Indicator, making direct reference to each scoring issue (delete if not appropriate – e.g. rationale is provided for each Scoring Issue).				
Draft scoring range		60-79		
Information gap indicator		More information sought Lack of proper information on ETPs and some bycatch species. And there are no observers (physically or EMS) on board.		

7.6. Principle 3

Principle 3 of the MSC Fisheries Standard evaluates whether the fishery operates under an effective and transparent governance and management system that ensures sustainable utilization of fish stocks and minimizes environmental impact. It includes assessments of legal frameworks, policy mechanisms, stakeholder involvement, compliance monitoring, and adaptive capacity.

In the case of the Mediterranean bluefin tuna fishery, sustainability governance is multi-tiered, involving international conventions, EU-level coordination, and national implementation mechanisms. Italy, a key Mediterranean coastal state, plays a significant role in this governance structure.

7.6.1. International and Regional Governance

ICCAT (International Commission for the Conservation of Atlantic Tunas)

ICCAT is the designated Regional Fisheries Management Organization (RFMO) responsible for managing Atlantic and Mediterranean tuna stocks, including the Eastern Atlantic Bluefin Tuna (eBFT). Its governance is based on:

- Adoption of conservation and management measures (CMMs) through binding Recommendations.
- Stock assessments and scientific guidance provided by the Standing Committee on Research and Statistics (SCRS).
- A management strategy evaluation (MSE) framework, which underpins decisions like those enshrined in ICCAT Recommendations 22-08 and 22-09 for bluefin tuna.

ICCAT requires member states to implement national measures consistent with its resolutions. These include effort limitations, quota allocations, monitoring controls, vessel authorizations, observer programs, and catch documentation schemes.

EU Governance

Within the EU, the Common Fisheries Policy (CFP) provides the legal framework for implementing ICCAT rules and broader sustainability objectives. It mandates:

- Science-based decision-making.
- Ecosystem-based management.
- Regionalization via Advisory Councils.
- Sustainable exploitation rates consistent with Maximum Sustainable Yield (MSY).

The EU transposes ICCAT's recommendations into Union law through directly applicable regulations. These laws are enforced by member states under EU oversight, including periodic audits and reporting obligations.

MEDAC (Mediterranean Advisory Council)

The Mediterranean Advisory Council (MEDAC) functions as a consultative body under the CFP, playing a pivotal role in ensuring stakeholder participation in the management of Mediterranean fisheries. It brings together fishers, NGOs, scientists, and industry representatives from EU Mediterranean countries.

In Italy, MEDAC plays an active role in shaping national and EU policies through advisory opinions, technical working groups, and feedback on EU legislative proposals. Italian representatives regularly contribute to MEDAC's consultations on:

- Management of highly migratory species.
- Spatial management, including marine protected areas (MPAs).
- Ecosystem-based fisheries management and technical measures.

MEDAC helps ensure that bottom-up, fishery-specific knowledge informs the development of management measures.

7.6.2. National Governance

Italy's management of bluefin tuna fisheries is governed by a multi-tiered system that aligns with international (ICCAT), European Union (EU), and national regulations. The Ministry of Agriculture, Food Sovereignty and Forests (MASAF), through its Directorate-General for Maritime Fisheries and Aquaculture Policies (PEMAC), is the competent authority responsible for implementing and enforcing these regulations**.**

Ministry of Agriculture, Food Sovereignty and Forests (MASAF)

The central institution responsible for fisheries governance in Italy is MASAF, which manages policy-making, regulation, and international representation for maritime fisheries. MASAF ensures that Italy meets its obligations under ICCAT, the CFP, and other international treaties.

Key responsibilities of MASAF include:

- Allocating national quotas and issuing fishing authorizations.
- Monitoring the sustainability and socio-economic performance of the sector.
- Coordinating with regional and local authorities to implement fisheries policies.

PEMAC – Directorate-General for Maritime Fisheries and Aquaculture Policies

Within MASAF, the Direzione Generale della Pesca Marittima e dell'Acquacoltura (PEMAC) handles operational fisheries management. PEMAC's competencies include:

- Quota and licensing administration under the ICCAT framework.
- Coordination of data collection and reporting systems (e.g., Electronic Reporting Systems, eBCD).
- Implementation of Monitoring, Control and Surveillance (MCS) systems in collaboration with the Italian Coast Guard.
- Participation in EU and ICCAT decision-making forums and working groups.
- Liaising with scientific institutions such as ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale) and CNR (National Research Council) for stock assessments and management plan evaluations.

PEMAC is tasked with enforcing compliance with both ICCAT measures and EU regulations, including vessel monitoring via VMS (Vessel Monitoring System), observer deployment, and port inspections. It also manages Italy's Data Collection Framework (DCF), used for science-based management evaluations.

Fisheries-Specific Governance for Bluefin Tuna in Italy

In Italy, bluefin tuna fisheries—particularly artisanal and small-scale operations—are governed by both general CFP and ICCAT provisions, but are specifically tailored to national needs via MASAF and PEMAC. The country's bluefin tuna fleet is largely composed of vessels under 15 meters in length, many operating with handlines and longlines in line with ICCAT's authorized gears.

Key fishery-specific mechanisms include:

- Quota Management: Italy's quota for bluefin tuna is distributed among Producer Organizations (POs) and individual vessels based on historical catch records, vessel type, and operational area.
- Fishing Effort Controls: Seasonal closures and authorized time windows for capture are strictly enforced.
- Traceability and Reporting: All catches must be documented via electronic catch declarations, with the bluefin tuna catch document (eBCD) system ensuring traceability from capture to market.
- Stakeholder Engagement: Italian stakeholders participate in national consultative forums and are represented in MEDAC, enabling bottom-up influence on management strategies.
- Scientific Monitoring: Scientific tagging programs and observer-based studies are periodically conducted in partnership with national research centers and universities.

Italy has also been active in pilot projects testing technologies to improve traceability, reduce bycatch, and monitor ecosystem impacts. These efforts support the adaptive management capacity emphasized in the MSC framework.

Institutional Cooperation and Adaptive Management

Fisheries governance in Italy involves tight coordination among government agencies, producer organizations, the scientific community, and stakeholders. For example:

- MASAF consults with POs when preparing quota allocations or adapting national legislation to new ICCAT rules.
- Regional governments and harbormasters ensure that vessel-level controls are effectively enforced.
- Scientific institutions, such as CNR and ISPRA, provide technical advice and ecological assessments that inform adaptive management decisions.

The feedback mechanisms created through MEDAC, national stakeholder forums, and periodic surveillance missions support iterative improvements in management practices.

Italy's fisheries governance system, anchored by MASAF and PEMAC and supported through multilevel collaboration with MEDAC and scientific bodies, demonstrates a comprehensive framework aligned with MSC's Principle 3. It ensures:

- Legally grounded, science-based policy development.
- Robust stakeholder involvement.

- Transparent and adaptive management.
- Effective enforcement and monitoring mechanisms.

The Italian system reflects a maturing governance structure capable of responding to both stock-specific sustainability concerns and broader ecosystem considerations, particularly in the Mediterranean context where bluefin tuna management is highly sensitive and politically salient.

7.6.3. National Legal Framework

Italy's management of bluefin tuna fisheries is governed by a multi-tiered system that aligns with international (ICCAT), European Union (EU), and national regulations. The Ministry of Agriculture, Food Sovereignty and Forests (MASAF), through its Directorate-General for Maritime Fisheries and Aquaculture Policies (PEMAC), is the competent authority responsible for implementing and enforcing these regulations.

Key components of the national framework include:

- Licensing and Authorizations: Only vessels with specific authorization may participate in the bluefin tuna fishery. These licenses are issued based on historical catch data and technical criteria, such as vessel type and gear.
- Catch Quotas: For the 2025 fishing season, Italy's total allowable catch for bluefin tuna remains at 5,283 tonnes, consistent with allocations from previous years. These quotas are distributed among various fishing categories, including purse seine, longline, and fixed traps.
- Monitoring and Control: Electronic systems such as the Vessel Monitoring System (VMS) and the electronic Bluefin Catch Document (eBCD) are mandatory to ensure traceability and compliance with quota limits.
- In recent years, MASAF has introduced several measures to enhance sustainability, transparency, and economic viability in the bluefin tuna supply chain:
    - Guarantee Seal: Effective May 26, 2025, it is mandatory to affix an official guarantee seal to every bluefin tuna specimen landed in Italian ports. This seal, applied at the time of landing alongside the validation of the eBCD, serves as a physical identifier that enhances product traceability and combats illegal, unreported, and unregulated (IUU) fishing.
    - Supply Chain Agreements: The 2025 fishing campaign decree encourages the formation of supply chain agreements among sector operators. These agreements aim to improve quota management, enhance product commercialization, and provide economic stability to producers. Recognition of Producer Organizations (POs): MASAF has officially recognized new POs, such as “Tonno Rosso d’Italia” based in Salerno, to strengthen collective management and market representation of Italian fishers.

Fishing Effort Management

- Italy manages fishing effort through a combination of administrative and technical controls:
- Licensing Limits: The number of licenses is strictly controlled to prevent overexploitation of fish stocks.
- Fishing Capacity Restrictions: Limits are set on vessel size and engine power to constrain catch potential and align effort with available resources.

- Monitoring of Fishing Activity: Fishing activity is monitored through detailed logbooks and electronic systems, ensuring real-time oversight of fleet operations.

Stakeholder Involvement

MASAF promotes participatory governance by actively involving stakeholders at all levels of decision-making:

- Producer Organization Consultations: POs are regularly consulted in defining fishing strategies, distributing national quotas, and managing operational protocols.
- MEDAC Collaboration: The Mediterranean Advisory Council (MEDAC) provides technical recommendations and stakeholder feedback on EU and national fisheries policies, including bluefin tuna management.
- Regional Government Participation: Regional authorities support the implementation of national measures and often conduct localized monitoring, enforcement, and training activities in collaboration with PEMAC.

These legal and administrative measures demonstrate Italy's commitment to a transparent, sustainable, and collaborative model for managing bluefin tuna fisheries. The national system is closely aligned with international standards and MSC's Principle 3, combining top-down regulatory control with bottom-up stakeholder engagement and scientific input.

FEDERPESCA, the National Federation of Italian Fishing Enterprises, is a professional organization established in 1968 that represents and protects the interests of around 2,200 Italian fishing companies. As a member of Confindustria, it acts as a key intermediary between the fishing industry and both national and international institutions. It actively participates in shaping fisheries policy, negotiating labor agreements, and ensuring that the voice of the Italian fishing sector is heard in regulatory discussions.

In addition to its representative role, FEDERPESCA promotes sustainable fishing practices through training, research, and technological development. Its subsidiary, FEDERPESCA Research & Development S.R.L., focuses on innovation within the sector, supporting responsible fishing and the adoption of advanced technologies.

On the international stage, FEDERPESCA represents Italian fisheries in organizations such as Europêche and contributes to European projects aimed at the sustainable management of marine resources. Overall, FEDERPESCA plays a vital role in advocating for a modern, sustainable, and economically viable fishing industry in Italy.

FEDERPESCA plays an important institutional role in the management of bluefin tuna in Italy by representing the interests of the national fishing industry within the regulatory and decision-making framework. As a recognized professional organization, it serves as a liaison between fishers and national or international authorities, actively participating in consultations related to quotas, licensing, and technical measures established by the Italian Ministry of Agriculture, Food Sovereignty and Forestry and in alignment with EU and ICCAT regulations. FEDERPESCA contributes to the development and implementation of sustainable management plans, ensures that its members comply with conservation measures, and promotes traceability and transparency throughout the supply chain. Through its advocacy and coordination efforts, it helps balance resource conservation with the economic viability of the sector.

7.6.4. *Organizzazione di Produttori della Pesca Ami e Palangari Società Cooperativa* (OPPAP)

The *Organizzazione di Produttori della Pesca Ami e Palangari Società Cooperativa* (hereafter OPPAP) is a cooperative society legally established on November 24, 2021, and based in Acireale, Sicily. It brings together professional fishers engaged primarily in longline and hook fisheries targeting high-value pelagic species, including Bluefin Tuna (*Thunnus thynnus*), Albacore (*Thunnus alalunga*), Swordfish (*Xiphias gladius*), Dorado (*Coryphaena hippurus*), and Imperial Needlefish (*Tetrapturus belone*). Officially recognized by the Italian Ministry of Agriculture, Food and Forestry (MIPAAF) on August 30, 2022, under EU Regulation 1379/2013, OPPAP operates as a certified Producer Organization in the fisheries sector.

OPPAP is governed as a non-profit cooperative based on principles of mutual benefit and compliance with the Common Fisheries Policy (CFP). It acts on behalf of its members to support sustainable fishing practices, responsible management of marine resources, and full compliance with EU and national regulations. Its mission encompasses not only the coordination of fishing activities and management of quotas—such as those for Bluefin Tuna—but also the improvement of product traceability, quality standards, and access to markets. The organization further contributes to combating illegal, unreported, and unregulated (IUU) fishing.

Structured under a Board of Directors and guided by internal bylaws and regulations, OPPAP facilitates collective organization of its members during fishing campaigns, often forming operational groups based on traditional working practices. Each campaign follows a shared production and marketing plan, prepared and submitted to authorities in line with the EU's market and sustainability goals. Although the cooperative normally centralizes commercialization, it also allows individual members or groups to market their own catches independently under defined conditions.

Through its internal governance, OPPAP ensures proper management of quotas, adherence to conservation measures, and transparent reporting of catches. It promotes innovation and investment in fishing technologies and infrastructure, supports professional training, and seeks to maintain economic resilience in coastal communities. By aligning itself with EU objectives for sustainable fisheries, OPPAP serves as both a regulatory and economic hub for its members, strengthening their ability to compete and thrive within the Mediterranean fishery sector.

7.6.5. Principle 3 Performance Indicator scores and rationales – delete if not applicable

PI 3.1.1 – Legal and/or customary framework

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: - Is capable of delivering sustainability in the UoA(s); - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework		
Scoring Issue		SG 60	SG 80	SG 100
a	**Compatibility of laws or standards with effective management**			
	Guide post	There is an effective national legal system **and a framework for cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and **organised and effective cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and **binding procedures governing cooperation with other parties** which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	Yes	Yes	No

Rationale

The governance of this fishery is shaped by three principal jurisdictions: the International Commission for the Conservation of Atlantic Tunas (ICCAT) as the responsible RFMO, the European Union (EU) as a contracting party to ICCAT and regional policymaker, and Italy as the flag and port state.

ICCAT

ICCAT provides the overarching legal and institutional framework for the sustainable management of tuna and tuna-like species in the Atlantic and adjacent seas (ICCAT, 2019). It currently includes 53 Contracting Parties and several Cooperating Non-Contracting Parties, Entities or Fishing Entities (CPCs). The organization operates through specialized panels, including Panel 2, which addresses management of northern temperate tunas such as bluefin tuna, and Panel 4, which focuses on other species and related geographic zones. The scientific work that informs management recommendations is carried out by the Standing Committee on Research and Statistics (SCRS).

ICCAT's management measures are adopted as "Recommendations" and typically become binding six months after notification, unless a Contracting Party formally objects—thus some flexibility exists that prevents full mandatory application across all parties (i.e., SG100 is not met). ICCAT also issues "Resolutions," which set broad policy directions. Since 2008, ICCAT has substantially improved its performance, as highlighted by an independent review that noted significant progress in stock recovery and management reforms (Spencer et al., 2016). As a result, the cooperative mechanisms established under ICCAT can be considered well-structured and functional, meeting SG60 and SG80.

PI 3.1.1	The management system exists within an appropriate legal and/or customary framework which ensures that it: - Is capable of delivering sustainability in the UoA(s); - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework

European Union (EU)

The EU, a Contracting Party to ICCAT since 1997, plays a central role in translating ICCAT's decisions into binding regulations through the Common Fisheries Policy (CFP). Each year, the European Parliament, Council of the EU, and European Commission (particularly DG MARE) work through a trilogue process to incorporate ICCAT Recommendations into EU law. Once adopted, these rules are directly applicable across all EU member states, including Italy, thereby ensuring standardized implementation of international conservation obligations (European Commission, 2023). This system ensures that the EU transposition mechanism meets SG60, SG80 and SG100.

Italy

Italy, acting as both flag and port state, implements ICCAT and EU regulations through its national legislation, particularly via the Ministry of Agriculture, Food Sovereignty and Forests (MASAF) and its Directorate-General for Maritime Fisheries and Aquaculture Policies (PEMAC). Italian law reflects EU and ICCAT requirements through national decrees, including the annual allocation of bluefin tuna quotas. These decrees have legal force and are binding on the relevant fishing operators.

Recent regulatory innovations introduced by MASAF—such as the mandatory traceability seal for landed bluefin tuna and the formal encouragement of supply chain agreements—illustrate Italy's commitment to enforceability, transparency, and collaborative management (MASAF, 2025a; MASAF, 2025b). Additionally, Italy actively participates in ICCAT scientific working groups and contributes to data collection efforts through institutions such as ISPRA and CNR. This national-level framework satisfies both SG60 and SG80 criteria due to its clear institutional responsibilities and consistent enforcement mechanisms. The mandatory nature of ministerial decrees ensures that SG100 is also met at the national level.

In summary:

ICCAT: SG60 and SG80 are achieved, but SG100 is not, due to the opt-out mechanism for Recommendations.

EU: SG60, SG80, and SG100 are all achieved due to comprehensive legal transposition and direct applicability.

Italy: SG60, SG80, and SG100 are all achieved due to effective implementation through national laws and ministerial decrees.

Therefore, while all three jurisdictions meet SG60 and SG80, only the EU and Italy meet SG100, leading to an overall conclusion that SG100 is not fully met across all jurisdictions.

b	**Resolution of disputes**			
	Guide post	The management system incorporates or is subject by law to a **mechanism** for the	The management system incorporates or is subject by law to a **transparent**	The management system incorporates or is subject by law to a **transparent**

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: - Is capable of delivering sustainability in the UoA(s); - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework		
		resolution of legal disputes arising within the system.	**mechanism** for the resolution of legal disputes which is **considered to be effective** in dealing with most issues and that is appropriate to the context of the UoA.	**mechanism** for the resolution of legal disputes that is appropriate to the context of the fishery and has been **tested and proven to be effective**.
	Met?	Yes	Yes	No

Rationale

ICCAT

ICCAT traditionally reaches decisions through consensus, with its governance structure facilitating informal dispute resolution. Typically, issues are debated in species-specific panels, where concerns are addressed collaboratively through the approval of panel reports and raised at the Commission level to pre-empt formal disagreements. However, when consensus is not possible, the ICCAT Convention (Article VIII, paragraphs 2 and 3) outlines an official objection procedure that allows Contracting Parties to abstain from implementing specific recommendations, provided their objections are duly substantiated (ICCAT, 2019).

ICCAT's Compliance Committee (COC) is responsible for monitoring the implementation of conservation measures across Contracting Parties. Although this body has the authority to highlight and address compliance issues, an independent evaluation (Spencer et al., 2016) found it to be limited in its effectiveness, prompting a 2019 revision of ICCAT's rules to enhance procedural transparency and require detailed justification for objections. Therefore, SG60 is met. For states that are parties to the UN Fish Stocks Agreement (UNFSA)—including Italy (ratified in 2005)—formal dispute resolution can also be pursued through international tribunals such as the International Court of Justice or the International Tribunal for the Law of the Sea, providing a transparent and effective mechanism (UN, 1995), thus SG80 is met. As objections to ICCAT recommendations continue to arise, albeit not directly relevant to this fishery, SG100 is not considered met.

European Union (EU)

At the European Union level, disputes between member states over fisheries management, including bluefin tuna, can be escalated to the European Court of Justice (ECJ). Several precedents exist where contested allocations or regulatory inconsistencies have been resolved through ECJ rulings. Although the process may be time-consuming, it is well-defined and legally binding, ensuring transparency and procedural fairness. This satisfies both SG60 and SG80, and previous use in EU fisheries contexts supports the conclusion that SG100 is met.

Italy

In Italy, while the broader management of bluefin tuna is regulated at the ICCAT and EU levels, key responsibilities remain with the national administration, particularly quota allocation among fleet segments. Italian quota decisions—administered by MASAF through PEMAC—have faced legal challenges, especially from

PI 3.1.1	The management system exists within an appropriate legal and/or customary framework which ensures that it: - Is capable of delivering sustainability in the UoA(s); - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework

small-scale fishing groups seeking more equitable access. For instance, judicial appeals have been submitted to the regional administrative courts (TAR) arguing that allocation frameworks should integrate socio-economic and environmental sustainability criteria.

These domestic legal channels offer affected parties, including artisanal fishers outside major Producer Organizations (POs), a transparent means of contesting decisions. Such actions have led to incremental adjustments in national quota distributions. Hence, Italy's dispute resolution mechanisms at the national level are accessible, lawful, and constructive—SG60 and SG80 are met. However, full execution of judicial rulings, particularly those requiring legislative amendments to primary national fisheries laws, can be protracted or pending. Therefore, SG100 is not fully met at the national level.

In conclusion, across all relevant jurisdictions—ICCAT, EU, and Italy—dispute mechanisms are established and functionally effective in most cases, meeting SG60 and SG80 criteria. However, delays in implementation at the national level mean SG100 is not yet met.

c	**Respect for rights**			
	Guide post	The management system has a mechanism to **generally respect** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to **observe** the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to **formally commit** to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	Yes	Yes	No

Rationale

ICCAT

ICCAT Resolution 15-13 addresses the "Criteria for Allocation of Fishing Possibilities" to Contracting Parties and Cooperating non-Contracting Parties (CPCs). The resolution acknowledges the significance of artisanal, subsistence, and small-scale coastal fisheries, as well as the socio-economic reliance of coastal communities and states on these resources. It also considers the historic participation of fleets in the fishery within the Convention area and includes provisions for equitable access for high seas fisheries. Although the resolution sets important guidance, it remains non-binding for CPCs that have submitted formal objections. Therefore, scoring guideposts SG60 and SG80 are fulfilled, while SG100 is not achieved.

European Union (EU)

PI 3.1.1	The management system exists within an appropriate legal and/or customary framework which ensures that it: - Is capable of delivering sustainability in the UoA(s); - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework

Under the Common Fisheries Policy (CFP) Regulation (EU 1380/2013, in force since 1 January 2013), the EU emphasizes the role of small-scale fisheries in promoting socio-economic resilience and sustainability (Recital 4). It further recognizes that limited access to fishing grounds within 12 nautical miles contributes both to conservation and the preservation of traditional fishing practices in coastal regions (Recital 19). Member States are encouraged to grant preferential access to small-scale and artisanal vessels. Article 17 specifically mandates that national authorities must use objective and transparent criteria—such as environmental impact, compliance history, contribution to the local economy, and historical catch records—when distributing national fishing opportunities. As a result, SG60 and SG80 are met under EU regulations. However, given that interpretations of fishing rights (i.e., property vs. usage rights) vary among Member States, and the CFP does not prescribe a standardized rights-based allocation system, SG100 is not considered met.

Italy

In Italy, the national share of the EU's bluefin tuna TAC is allocated by the Ministry of Agriculture, Food Sovereignty and Forests (MASAF), through its Directorate-General for Maritime Fisheries and Aquaculture (PEMAC). Italy is required to submit a national fishing plan and capacity report, which are consolidated into the EU submission to ICCAT. A central regulatory mechanism is the issuance of the European Fishing Authorization (AEP), introduced in 2013, which controls access to bluefin tuna resources. AEPs are vessel-specific, valid for one calendar year, and are granted only if the applicant is compliant with mandatory professional contributions. They are distributed based on vessel characteristics (e.g., size and gear type), with quotas separately managed for the Atlantic and Mediterranean. For example, longliners under 24 meters and rod-and-line vessels under 17 meters must operate under specific AEP limits.

Quota allocation in Italy follows transparent procedures rooted in historical fishing records, originally referencing the period from 1 January 2009 to 31 August 2010. Each year, updated quota allocations are published through ministerial decrees (e.g., MASAF 2024 decree on BFT). All vessels operating in the bluefin tuna fishery are typically affiliated with recognized Producer Organizations (POs). One such PO, "Tonno Rosso d'Italia", manages internal distribution of quotas among its members, submits a seasonal fishing plan (**Piano di Pesca**), and coordinates potential intra-group quota transfers, such as between longliners and purse seiners. These management actions fulfill SG60 and SG80.

Nonetheless, challenges remain concerning equity and historical participation. For instance, debates have arisen over the eligibility period for quota qualification, as earlier data were unreliable or incomplete. While MASAF has taken steps toward greater transparency and redistribution, there is no formal, publicly documented commitment to realigning quota allocation explicitly in favor of small-scale or artisanal fleets in the future. Consequently, SG100 is not met.

Across ICCAT, the EU, and the Italian national framework, scoring guideposts SG60 and SG80 are satisfied due to the presence of clear allocation criteria, consideration of artisanal interests, and evidence of structured quota management. However, SG100 remains unmet due to the absence of binding, long-term commitments to equitable reallocation favoring small-scale operators.

PI 3.1.1	The management system exists within an appropriate legal and/or customary framework which ensures that it: - Is capable of delivering sustainability in the UoA(s); - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework

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TAR Lazio Judgments on Fisheries Quotas (Selected 2022–2024 decisions).

Draft scoring range	≥80

PI 3.1.1	The management system exists within an appropriate legal and/or customary framework which ensures that it: - Is capable of delivering sustainability in the UoA(s); - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework
Information gap indicator	Information sufficient to score PI

PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
Scoring Issue		SG 60	SG 80	SG 100
a	**Roles and responsibilities**			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **generally understood**.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **explicitly defined and well understood for key areas** of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are **explicitly defined and well understood for all areas** of responsibility and interaction.
	Met?	Yes	Yes	No

Rationale

ICCAT

ICCAT Resolution 15-13 outlines the institutional responsibilities of the Commission, its Secretariat, and its Contracting Parties (CPCs), providing a foundational governance structure for regional fisheries management. ICCAT's official website offers a transparent overview of the Commission's organization, detailing the mandates and duties of its scientific and decision-making bodies (www.iccat.int). This publicly available information supports a basic understanding of institutional roles and responsibilities, thereby meeting SG60.

All ICCAT meetings are announced ahead of time, and both draft and final meeting reports are made publicly available. These documents clarify the agenda, participating bodies, and the scope of each group's mandate. Moreover, contributions from stakeholders—including industry representatives, environmental NGOs, and scientific observers—are published and demonstrate the participatory nature of ICCAT's processes. This level of transparency and involvement ensures that roles and responsibilities are broadly understood within the Commission, satisfying SG80. Nonetheless, considering the wide geographic distribution of bluefin tuna and the potential for involvement by a broad range of CPCs, a consistently strong understanding of governance functions may not extend equally to all ICCAT members, especially where direct engagement with BFT fisheries is limited. Therefore, SG100 is not achieved.

European Union (EU) and Italy

At the EU and national level, Italy is actively involved in the governance of the bluefin tuna fishery through a range of institutions and processes. The Ministry of Agriculture, Food Sovereignty and Forests (MASAF), through its Directorate-General for Maritime Fisheries and Aquaculture (PEMAC), is responsible for implementing ICCAT and EU rules. Italian stakeholders, including Producer Organizations (POs), are directly involved in decision-making and policy consultations concerning quota distribution, data collection, and technical measures through participatory mechanisms.

PI 3.1.2	The management system has effective consultation processes that are open to interested and affected parties The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties

Stakeholder representation is also institutionalized via Italy's active participation in the Mediterranean Advisory Council (MEDAC), which facilitates structured dialogue between fishers, NGOs, scientists, and regulators on broader ecosystem and sustainability issues, consistent with Principle 2 of the MSC Standard.

In Italy, POs formally recognized by MASAF are central to fisheries governance. They contribute to the development and implementation of fishery-specific management plans and collaborate with scientific institutions for stock assessments and data collection. Regular consultations are held between PEMAC, POs, and regional authorities to ensure coherent policy application, quota tracking, and alignment with ICCAT frameworks.

These processes, including regular working groups, public decrees (e.g., MASAF's annual bluefin tuna fishing campaign), and bilateral meetings with enforcement agencies (e.g., the Italian Coast Guard), ensure that the roles and responsibilities of all actors are clearly defined and effectively communicated. The structure of Italian fisheries governance demonstrates a high degree of coordination and clarity within its jurisdiction, meeting both SG60 and SG80. While the national framework is well-developed, full alignment with SG100 would require demonstrable, consistent comprehension and implementation across all involved ICCAT members and their respective jurisdictions, which remains a broader systemic challenge.

In conclusion, across all relevant jurisdictions, organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction, meeting SG60 and SG80 criteria. However, these are not covered in all areas and SG100 is not met.

b	**Consultation processes**			
	Guide post	The management system includes consultation processes that **obtain relevant information** from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that **regularly seek and accept** relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that **regularly seek and accept** relevant information, including local knowledge. The management system demonstrates consideration of the information and **explains how it is used or not used**.
	Met?	Yes	Yes	No

Rationale

ICCAT

ICCAT maintains a comprehensive framework for data collection across its Contracting Parties (CPCs), which includes mandatory vessel and port registrations, electronic reporting of catches, and a coordinated regime of scientific observations and inspections. These measures, formalized through binding Recommendations, have been developed with the involvement of all relevant stakeholders. As such, SG60 is met.

PI 3.1.2	The management system has effective consultation processes that are open to interested and affected parties The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties

Resolution 11-17 on the use of the "best available science" reinforces collaboration among CPCs, the ICCAT Commission, and its scientific advisory body, the Standing Committee on Research and Statistics (SCRS). It also encourages the active engagement of national scientists in data provision and analysis. This level of coordination is reflected in annual reporting by the EU and CPCs such as Italy, as well as in the proceedings of ICCAT Panel 2, technical working groups, and biennial Commission sessions, where the integration and application of scientific data in stock assessment processes is discussed. This demonstrates alignment with SG80.

Nonetheless, there is limited transparency at the regional level regarding how data—particularly on compliance, socio-economic factors, and enforcement—is incorporated into management decisions. The relative weighting of different information sources is not always made explicit, preventing the fishery from reaching SG100 on this criterion.

European Union (EU) and Italy

In Italy, fisheries governance incorporates shared management responsibilities among national, regional, and stakeholder institutions. Co-management is a key feature, supported by the Ministry of Agriculture, Food Sovereignty and Forests (MASAF) through PEMAC. These bodies work closely with EU-recognized Producer Organizations (POs), such as “Tonno Rosso d’Italia,” to allocate national bluefin tuna quotas and manage fishing activities, thereby meeting SG60 under both EU and Italian systems.

Dedicated working groups exist at multiple levels—including within regional maritime authorities and at the national level—to focus specifically on bluefin tuna. These committees integrate scientific advice from institutions and consider stakeholder input. There are regular channels of communication between scientists, managers, and industry actors, ensuring that data, including traditional ecological knowledge, is factored into policy. This participatory process supports compliance with SG80 and SG100 at both the national and EU levels.

In conclusion, across all relevant jurisdictions, the management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained, meeting SG60 and SG80. However, these are not covered in ICCAT framework and SG100 is not met

c	**Participation**			
	Guide post		The consultation process **provides opportunity** for all interested and affected parties to be involved.	The consultation process provides **opportunity and encouragement** for all interested and affected parties to be involved, and **facilitates** their effective engagement.
	Met?		Yes	Yes
Rationale				

PI 3.1.2	The management system has effective consultation processes that are open to interested and affected parties The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties

ICCAT

Under Article 11 of the ICCAT Convention, the Commission is empowered to invite any relevant international organization or non-member government—provided they are part of the United Nations or any of its specialized agencies—to participate in meetings of the Commission and its subsidiary bodies as observers (ICCAT, 2019b). Since 2011, the establishment of the Meeting Participation Fund (MPF) has helped support the engagement of developing CPCs (Contracting Parties and Cooperating Non-Contracting Parties), covering activities such as training, inspections, and official meetings. Following recommendations in ICCAT's second Performance Review (Spencer et al., 2016), the MPF was further strengthened through Recommendation 20-09 to better enable participation by stakeholders from lower-capacity nations.

The Scientific Committee (SCRS) actively encourages the involvement of independent researchers and academics, including through mechanisms for peer review and contributions to working groups, consistent with ICCAT Resolution 11-17 on promoting the use of best available science. ICCAT meetings, including scientific and policy-level sessions, are publicly scheduled on the organization's website, ensuring transparency and access for all interested parties. Observer status is open to NGOs that support ICCAT's objectives and demonstrate a relevant interest in its species. These organizations may attend most sessions and, with the Chair's permission, make interventions or submit documents. Observer admission is generally granted unless opposed by one-third of ICCAT members (ICCAT, 2005).

European Union (EU) and Italy

At the regional and national level, Italy demonstrates a strong institutional framework for stakeholder inclusion. Within the European Union, the Mediterranean Advisory Council (MEDAC) plays a key role in gathering input from a wide range of stakeholders—including fishers' associations, NGOs, and industry representatives—on Mediterranean fisheries policy. Italian participants in MEDAC, including those from artisanal sectors and research institutions, regularly contribute to consultations that inform EU-level and ICCAT decision-making processes.

Nationally, the Ministry of Agriculture, Food Sovereignty and Forests (MASAF), through its Directorate for Maritime Fisheries and Aquaculture (PEMAC), ensures structured engagement with the sector. Producer Organizations (POs) are consulted on policy decisions, quota allocations, and the development of fisheries management plans. PEMAC also provides briefings and consultative opportunities before and after ICCAT annual meetings to inform stakeholders of likely regulatory changes and implications for national fisheries management.

Moreover, scientific institutions routinely collaborate with stakeholders and the government in the preparation of technical advice. Italian stakeholders contribute to working groups on bycatch mitigation, ecosystem-based management, and the implementation of electronic monitoring tools.

Given the well-established structures for consultation at ICCAT, EU, and national Italian levels, including support for scientific engagement, transparency, and NGO involvement, both SG80 and SG100 are met.

References

PI 3.1.2	The management system has effective consultation processes that are open to interested and affected parties The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties

ICCAT Resolution 11-17: https://www.iccat.int/Documents/Recs/RES_11-17_ENG.pdf

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ICCAT (2020). Recommendation by ICCAT to Amend the Recommendation 11-26 on the Establishment of a Meeting Participation Fund (Rec. 20-09).

MASAF – Bluefin Tuna Regulatory Page: https://www.masaf.gov.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/163

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ICCAT Resolution 15-13: https://www.iccat.int/Documents/Recs/RES_15-13_ENG.pdf

ICCAT Commission structure: https://www.iccat.int/en/commission.html

Mediterranean Advisory Council (MEDAC): http://www.med-ac.eu/

Gazzetta Ufficiale (Recognition of PO "Tonno Rosso d'Italia"): https://www.gazzettaufficiale.it/atto/serie_generale/caricaDettaglioAtto/originario?atto.codiceRedazionale=25A00780&atto.dataPubblicazioneGazzetta=2025-02-11

ANSA: Ministerial statement on BFT supply chain reform (2025): https://www.ansa.it/canale_terraegusto/notizie/dal_mare/2025/03/31/la-pietra-decreto-tonno-rosso-rafforza-accordi-di-filiera

Overall Performance Indicator (PI) Rationale	
Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI

PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Fisheries Standard, and incorporates the precautionary approach		
Scoring Issue		SG 60	SG 80	SG 100
a	**Objectives**			
	Guide post	Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach, are **implicit** within management policy.	**Clear** long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach are **explicit** within management policy.	**Clear** long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach, are **explicit** within **and required by** management policy.
	Met?	Yes	Yes	Yes

Rationale

ICCAT

The International Commission for the Conservation of Atlantic Tunas (ICCAT) establishes the overarching long-term goal, as outlined in Article VIII of the ICCAT Convention (ICCAT, 2019b), to maintain tuna and tuna-like species within the Convention Area at levels that can support the maximum sustainable catch. While the Convention itself does not explicitly mention the precautionary approach, subsequent ICCAT policy documents, such as Resolution 15-12, urge Contracting Parties to apply this approach in line with international norms. Resolution 15-11 additionally advocates for an ecosystem-based approach to fisheries management. Further, ICCAT Recommendation 11-13 underscores that management decisions should be informed by the best scientific advice and incorporate the precautionary approach. These frameworks collectively demonstrate that ICCAT's operational model supports precautionary and ecosystem-based management, meeting SG60 and SG80.

Specific to bluefin tuna, ICCAT Recommendation 22-08 on the multi-annual management plan for Eastern Atlantic and Mediterranean bluefin tuna explicitly requires that fishing activities be managed to ensure catches remain at or below the Maximum Sustainable Yield (MSY). It further stipulates that Spawning Stock Biomass (SSB) should be maintained at or above the level corresponding to SSBMSY, using the most conservative MSY estimates from the Standing Committee on Research and Statistics (SCRS). Although ICCAT resolutions are non-binding, the recommendations for bluefin tuna are binding on all CPCs, including Italy. This makes adherence to the precautionary approach a de facto requirement, thus SG100 is also met.

European Union (EU)

At the European level, the Common Fisheries Policy (CFP) codified in Regulation (EU) No 1380/2013 provides a binding framework for fisheries sustainability across all member states, including Italy. Article 2 of the Regulation outlines three key objectives: (1) to ensure the long-term environmental sustainability of fisheries and aquaculture while delivering socio-economic benefits; (2) to apply the precautionary approach to fisheries management to rebuild and maintain stocks above MSY levels; and (3) to implement an ecosystem-based

PI 3.1.3	The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Fisheries Standard, and incorporates the precautionary approach

approach to fisheries management that minimizes the adverse impacts of fishing on the marine environment (EU, 2013). These policy goals fully satisfy the intent of SG60 and SG80.

Complementing the CFP, the Marine Strategy Framework Directive (MSFD) 2008/56/EC requires member states to develop and implement a programme of measures to achieve Good Environmental Status (GES) in marine waters, based on the precautionary principle. For the Western Mediterranean sub-region, which includes Italian waters, the MSFD Descriptor 3 directly addresses the need to reduce the environmental impact of fishing activities. The Italian National Marine Strategy, which incorporates MSFD obligations, operationalizes these objectives through monitoring, conservation planning, and ecosystem impact mitigation strategies. Thus, SG100 is also met.

Italy

Domestically, Italy articulates its fisheries policy objectives through the legislative framework of Legislative Decree No. 4 of January 9, 2012 (the “Fishing Code”), which aligns with the CFP. Article 2 of the decree mandates the sustainable exploitation of marine resources and the protection of marine ecosystems. It promotes biological rest periods, marine spatial planning, and the application of MSY principles in fisheries management. Additionally, national measures derived from Ministerial Decrees—including those regulating bluefin tuna catches, effort limits, and vessel authorizations—reaffirm Italy's commitment to precautionary and science-based management.

As part of its obligation under both EU and ICCAT frameworks, Italy—through MASAF and its Directorate-General PEMAC—implements these international and EU obligations via quota allocations, catch reporting, the eBCD system, VMS surveillance, and stakeholder consultations. Italy’s national bluefin tuna management plan, regularly updated to align with ICCAT recommendations, demonstrates active and adaptive governance that fully meets SG60, SG80, and SG100 across all relevant jurisdictions.

References

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ICCAT Resolution 15-11. On Ecosystem-Based Approach to Fisheries Management.

ICCAT Resolution 15-12. On the Application of the Precautionary Approach.

ICCAT Recommendation 11-13. On Decision-Making Principles for Conservation and Management Measures.

ICCAT Recommendation 22-08. Multi-annual Management Plan for Bluefin Tuna in the Eastern Atlantic and the Mediterranean.

Regulation (EU) No 1380/2013. Common Fisheries Policy (CFP). https://eur-lex.europa.eu

Directive 2008/56/EC. Marine Strategy Framework Directive (MSFD).

PI 3.1.3	The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Fisheries Standard, and incorporates the precautionary approach
Italian Legislative Decree No. 4/2012. Disposizioni in materia di pesca e acquacoltura. MASAF (2025). Decreto tonno rosso e sigillo identificativo. https://www.masaf.gov.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/163	
Overall Performance Indicator (PI) Rationale	
Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI

PI 3.2.1 – Fishery-specific objectives

PI 3.2.1		The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2		
Scoring Issue		SG 60	SG 80	SG 100
a	**Objectives**			
	Guide post	**Objectives**, which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **implicit** within the fishery-specific management system.	**Short and long-term objectives**, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **explicit** within the fishery-specific management system.	**Well defined and measurable short and long-term objectives**, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are **explicit** within the fishery-specific management system.
	Met?	Yes	Yes	Partial

Rationale

ICCAT

The primary objective of the International Commission for the Conservation of Atlantic Tunas (ICCAT), as outlined in its Convention, is to ensure that tuna and tuna-like species in the Atlantic Ocean are conserved at levels that allow for the highest sustainable yield over time (ICCAT, 2019b). For Eastern Atlantic and Mediterranean bluefin tuna (BFT), the original 15-year Recovery Plan implemented in 2007 was replaced by a multi-annual Management Plan via Recommendation 17-07, which entered into force in August 2018. This has been revised several times, with the latest iteration being Recommendation 22-08, effective as of 23 June 2023. The current ICCAT Recommendation 22-09 establishes specific and measurable short- and long-term objectives for both the Eastern and Western BFT stocks, demonstrating that the management system meets the sustainability goals at scoring guidepost (SG) levels 60, 80, and 100 under MSC Principle 1.

Regarding Principle 2, ICCAT has adopted several policy instruments addressing broader ecological impacts. These include Resolution 95-02 and Recommendations 18-06 and 21-10 on the conservation of shark species incidentally captured in ICCAT-regulated fisheries. ICCAT has also developed targeted measures to minimize interactions with endangered, threatened, and protected (ETP) species. This includes binding obligations on data collection and mitigation for marine turtles and seabirds, as well as cooperative actions aligned with CITES. While swordfish—also caught by the evaluated fishery—is subject to clearly articulated objectives, not all species impacted under Principle 2 have management targets that are equally well-defined or quantifiable, hence SG100 is not fully met for this principle.

European Union (EU) and Italy

At the European Union level, the objectives established by ICCAT are transposed and implemented through the Common Fisheries Policy (CFP), which Italy follows as an EU member state. The CFP commits to achieving Maximum Sustainable Yield (MSY), ensuring ecosystem-based management, and minimizing environmental impacts. These aims are reflected in Italian national policy and in the operational standards observed by fisheries

PI 3.2.1	The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2

such as the UoA., a recognized producer organization operating in the Tyrrhenian, Adriatic and Ionian Seas. This fishery targets bluefin tuna using longlines and handlines and participates in ICCAT's control and reporting schemes, including electronic documentation systems (eBCD) and vessel monitoring protocols.

Moreover, the OPPAP has clearly defined and measurable short- and long-term objectives that are explicitly integrated into its fishery-specific management system. These objectives are directly aligned with achieving the outcomes expressed on target stock (bluefin tuna) and accessory commercial species, relevant for Principle 2.

As stated in its Statute and Internal Regulations, OPPAP promotes profitable and sustainable fishing activities among its members in full compliance with EU regulations (notably Regulation (EU) 1380/2013 and Regulation (EU) 1379/2013). Its objectives include avoiding unwanted catches, ensuring traceability, reducing environmental impact, enhancing gear selectivity, and promoting responsible fishing practices. Furthermore, through structured mechanisms such as Production and Marketing Plans, quota management, internal rules of compliance, and control measures, OPPAP demonstrates a functional, transparent, and adaptive approach to achieving ecological sustainability and minimizing environmental harm from fishing operations

Locally, best practice protocols have been developed through collaboration between fishers and scientific partners to promote sustainable fishing and minimize bycatch. Although these measures are largely voluntary, they are well-documented and consistently applied by UoA member vessels as evidenced during the site visit. These localized initiatives with ICCAT and EU, help the fishery meet SG60 and SG80. However, for Principle 2, while key species like swordfish are covered by explicit objectives, the absence of similarly robust targets for all ecosystem components especially ETP means that SG100 is only partially achieved.

References

ICCAT (2019). ICCAT Basic Texts, including the Convention. https://www.iccat.int

ICCAT Recommendation 22-08. Multi-Annual Management Plan for Bluefin Tuna in the Eastern Atlantic and Mediterranean.

ICCAT Recommendation 22-09. Updated Management Strategy Evaluation-based Harvest Control Rule for Bluefin Tuna.

ICCAT Recommendation 18-06. Conservation of Sharks Caught in Association with Fisheries Managed by ICCAT.

ICCAT Recommendation 21-10. Amendment to Rec. 18-06 on Shark Conservation.

European Commission. Common Fisheries Policy (CFP). https://oceans-and-fisheries.ec.europa.eu/cfp_en

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Overall Performance Indicator (PI) Rationale

Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI

PI 3.2.2 – Decision-making processes

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery		
Scoring Issue		SG 60	SG 80	SG 100
a	**Decision-making processes**			
	Guide post	There are **some** decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are **established** decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	Yes	Yes	

Rationale

ICCAT

The International Commission for the Conservation of Atlantic Tunas (ICCAT) operates under a governance framework where decisions are typically made by majority vote among Contracting Parties (CPs), each having one vote, as established in Article 3 of the ICCAT Convention. While a two-thirds presence is required to meet quorum, the Commission generally seeks decisions by consensus to maintain broad agreement among its 50+ members (ICCAT, 2019). Scientific advice on key management elements such as stock status, harvest control rules, and total allowable catches is primarily provided by ICCAT's Standing Committee on Research and Statistics (SCRS), which convenes annually and often through specialized working groups.

The most recent ICCAT Performance Review (Spencer et al., 2016) acknowledged that while consensus-based management is a positive principle, it has occasionally led to delays in formalizing decisions or weakening of recommendations. Efforts to address these challenges continue, including governance reforms proposed by the Ad Hoc Working Group on Follow-Up to the Performance Review (ICCAT, 2017c). Despite these structural limitations, ICCAT's decision-making processes have repeatedly delivered tangible conservation and management measures specific to bluefin tuna, in alignment with fishery objectives. Therefore, the relevant sustainability guideposts (SG60 and SG80) are considered achieved.

European Union (EU)

The European Union, as a Contracting Party to ICCAT, has established mechanisms to integrate ICCAT Recommendations into binding legal instruments through Regulations of the European Parliament and Council. These become directly applicable in all Member States under the Common Fisheries Policy (CFP) (EU, 2013; EU, 2023b). Although ICCAT measures generally become enforceable within six months of adoption, the EU transposition process—particularly when administrative or technical adaptations are needed—can extend this timeline.

Italy

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery

In Italy, once ICCAT measures are incorporated into EU law, national implementation is overseen by the Ministry of Agriculture, Food Sovereignty and Forests (MASAF), particularly through its Directorate-General for Maritime Fisheries and Aquaculture Policies (PEMAC). PEMAC is responsible for quota allocation, issuance of fishing authorizations, electronic catch documentation (eBCD), and coordination of monitoring and enforcement efforts in cooperation with the Italian Coast Guard. Decision-making and enforcement are operationalized at national and regional levels, with strong alignment to EU and ICCAT regulations.

At the fishery level, the UoA plays a central role in facilitating compliance and promoting sustainable fishing practices among artisanal longline and handline vessels operating in the Mediterranean. This producer organization collaborates with MASAF on quota management, implements traceability controls aligned with ICCAT and EU standards, and actively participates in stakeholder consultations through MEDAC and FEDERPESCA. Their proactive engagement with national and regional institutions further supports a transparent and functional governance environment.

Given the structure, responsiveness, and collaborative nature of the governance system at both EU and national levels in Italy, as well as the effective local implementation by the producer organization, performance levels corresponding to SG60 and SG80 are met.

b	**Responsiveness of decision-making processes**			
	Guide post	Decision-making processes respond to **serious issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to **serious and other important issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to **all issues** identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	Yes	Yes	No

Rationale

Since the introduction of the Bluefin Tuna (BFT) Recovery Plan in 2013, ICCAT has taken substantial steps to address key conservation and management concerns, including significant reductions in fishing capacity, enhancements in compliance monitoring, and improved Conservation and Management Measures (CMMs). These interventions meet the criteria for SG60. The 2016 ICCAT Performance Review acknowledged that while improvements were still required across several areas—particularly in terms of timeliness and transparency—bluefin tuna management was highlighted as a success story. The review noted that considerable efforts had been made by ICCAT and its Contracting Parties (CPCs) to regain control of the fishery, with tangible results. Scientific assessments conducted by ICCAT's Standing Committee on Research and Statistics (SCRS) indicate a marked recovery of the stock.

Italy, as an active CPC, has been central to this process, particularly through MASAF and its technical division PEMAC, which implement ICCAT measures domestically. Italian POs such as Organizzazione Produttori della

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery

Pesca Ami e Palangari Soc. Coop., a member of FederOP and based in Sicily, contribute to BFT fisheries using artisanal longline techniques. These vessels operate under strict licensing schemes and quota systems, adhering to national and EU regulations.

At present, issues of ecological concern—such as non-target species bycatch and joint stock management across Eastern and Western Atlantic regions—are being addressed through ICCAT's Multi-Annual Management Plan (Rec. 2023-06). These initiatives support the SG80 performance level.

At the EU level, policy-making for Italian fisheries is transparent, science-driven, and informed by contributions from scientific institutions, including ISPRA and national universities, whose researchers are regularly involved in ICCAT scientific working groups. The decision-making structure is responsive and incorporates best available science, satisfying SG60 and SG80 criteria.

Nationally, Italy's PEMAC, in coordination with the Ministry of Agriculture (MASAF), engages directly with Producer Organizations (POs) in setting operational guidelines, quota distributions, and ensuring compliance through electronic monitoring and port inspections. Italian stakeholders also participate actively in MEDAC, contributing to regional and ecosystem-based fisheries management discussions relevant to both Principle 1 and Principle 2 of the MSC framework.

However, there remain unresolved discussions regarding access to bluefin tuna quotas for potential new entrants, especially in the small-scale fleet segment. These debates are ongoing within and with regional and national authorities, including how authorizations (AEP) are allocated and renewed. These challenges prevent the fishery from achieving SG100.

In conclusion, SG60 and SG80 performance levels are met for this fishery based on ICCAT's improved governance, Italy's strong institutional framework, and stakeholder engagement. SG100 is not achieved due to ongoing structural and access-related issues in quota allocation

	Use of precautionary approach	
c	Guide post	Decision-making processes use the precautionary approach and are based on best available information.
	Met?	Yes

Rationale

ICCAT

ICCAT's decisions, particularly those related to the Eastern Atlantic and Mediterranean bluefin tuna (BFT) stock, are grounded in the best available scientific evidence, in line with ICCAT Resolution 15-12. For bluefin tuna, the precautionary approach is consistently applied by the Standing Committee on Research and Statistics (SCRS), Panel 2, and relevant working groups. This is clearly demonstrated in the design and adoption of the robust harvest control rules and the management strategy evaluation (MSE) process currently in place (see Principle 1). Therefore, scoring guidepost SG80 is met.

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery

European Union (EU) and Italy

At the European level, this precautionary framework is further reinforced through the Common Fisheries Policy (CFP), which mandates the use of the best scientific advice and the precautionary approach in fisheries management. These principles are operationalized in the EU and national fishing plans, including annual quota allocations and effort control mechanisms applied to member states. Italy, as an EU member, transposes these decisions into national law and executes them through detailed technical and operational measures coordinated by MASAF and its Directorate PEMAC. SG80 is thus met.

In the Italian context, the precautionary principle has been explicitly recognized in national environmental law since Legislative Decree 152/2006 (“Norme in materia ambientale”) and is embedded in Italy's obligations under the EU Treaty and related directives, such as the Marine Strategy Framework Directive (2008/56/EC). The Italian authorities, including MASAF, are required to apply this principle when managing fishery resources.

Specifically, in the case of the UoA, a producer organization active in the artisanal longline and handline bluefin tuna fishery—the precautionary approach is reflected in the operational plans, vessel-specific quotas, traceability systems (e.g., eBCD and VMS), and direct alignment with ICCAT and EU regulations. The organization implements sustainable fishing protocols and participates in the quota management and compliance monitoring systems mandated by the Italian government and the EU, further ensuring adherence to SG80 requirements.

In conclusion, the consistent application of precautionary management and reliance on science at the international (ICCAT), EU, and Italian national levels—coupled with clear implementation at the operational level by this artisanal fishery—demonstrate that SG80 for the relevant Performance Indicator is met.

	Accountability and transparency of management system and decision-making process			
d	Guide post	Some information on the fishery’s performance and management action is generally available on request to stakeholders.	**Information on the fishery’s performance and management action is available on request**, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders **provides comprehensive information on the fishery’s performance and management actions** and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?	Yes	Yes	No
Rationale				

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery

ICCAT

The ICCAT website offers transparent, multilingual (English, Spanish, and French) access to a comprehensive set of documents produced by the Commission and its subsidiary bodies. This includes meeting reports, recommendations, stock assessments, and scientific reviews. These documents clearly explain the mandate of ICCAT, the scientific and management basis for conservation measures (e.g., ICCAT Rec. 22-08), and the supporting research and data underpinning decision-making processes. The Commission's biennial reports provide further insights into management decisions, stock status, and the implementation progress by Contracting Parties (CPCs). This level of documentation and accessibility satisfies SG60, SG80, and SG100.

European Union (EU) and Italy

Within the European Union and Italy, stakeholders have access to a wide range of management-related information regarding the small-scale longline and handline fisheries targeting bluefin tuna. The Mediterranean Advisory Council (MEDAC) offers a platform for comprehensive stakeholder involvement, where agendas, meeting minutes, and working group outputs (e.g., BFT WG2) are made available. These documents reflect how management systems respond to scientific findings, stakeholder inputs, and evaluation processes at the regional and EU levels, meeting SG60 and SG80.

For the Italian artisanal longline fleet, specifically the vessels under the UoA further information on fishery performance is accessible through national channels. This producer organization operates under the oversight of MASAF and collaborates on quota management and traceability initiatives. However, while general performance and compliance reports exist, formal and detailed reporting specific to the UoA is limited and typically available only upon request, due to the UoA comprising a subset of the national fleet. As such, SG100 is not fully achieved.

In conclusion, SG60 and SG80 are met due to strong institutional transparency and stakeholder involvement at both ICCAT and EU/Italian levels. SG100 is not met, due to the absence of routine public reporting specific to the UoA's performance.

e	**Approach to disputes**			
	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	Yes	Yes	Yes
Rationale				

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery

ICCAT

The International Commission for the Conservation of Atlantic Tunas (ICCAT) operates a comprehensive governance system that includes regular meetings of its Commission, Standing Committee on Research and Statistics (SCRS), Compliance Committee (COC), various working groups, and its Secretariat. These forums offer Contracting Parties (CPCs) structured opportunities to raise concerns, contribute to scientific assessments, and influence the regulatory agenda. The use of consensus-based decision-making at ICCAT effectively minimizes the likelihood of prolonged legal conflicts or governance breakdowns. As CPCs commit to abide by ICCAT rules upon accession, dispute resolution typically occurs within institutional channels, without recourse to external arbitration or litigation (ICCAT, 2024). Consequently, the governance framework satisfies MSC scoring guideposts SG60, SG80, and SG100.

European Union (EU) and Italy

At the EU level, the Common Fisheries Policy (CFP) provides a robust legal and administrative framework for decision-making, including avenues for judicial appeal and stakeholder input. Italy, through its Ministry of Agriculture, Food Sovereignty and Forests (MASAF) and its Directorate-General for Maritime Fisheries and Aquaculture Policies (PEMAC), implements ICCAT measures through national decrees and manages catch allocations in line with EU-mandated quotas. Italian administrative courts provide mechanisms for appeals regarding quota allocations or licensing, and court rulings are generally respected and implemented within a reasonable timeframe.

There have been occasional legal disputes concerning bluefin tuna quota distribution, particularly involving vessel operators not affiliated with recognized Producer Organizations (POs). However, such cases have not affected the integrity or sustainability of the fishery. Italy's share of the EU bluefin tuna Total Allowable Catch (TAC) has increased in recent years, and MASAF has implemented measures to facilitate fairer distribution through supply chain agreements and official recognition of new POs.

The UoA includes only vessels affiliated with the Organizzazione Produttori della Pesca Ami e Palangari Soc. Coop., a PO based in Italy and part of FederOP. This PO is formally recognized under EU law and actively collaborates with national and regional authorities to ensure legal compliance and sustainable fishing practices. It also contributes to local fisheries management through engagement with advisory bodies and ensures that any intra-sector disputes are managed proactively and constructively.

Legal and administrative enforcement mechanisms are well-developed at both national and regional levels, including through the Guardia Costiera and Capitanerie di Porto. Sanctions for non-compliance—where applicable—can be implemented swiftly, ensuring that breaches do not compromise the management system's credibility.

Based on these considerations, the fishery under assessment satisfies all three MSC scoring guideposts—SG60, SG80, and SG100.

References

PI 3.2.2	The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery

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Overall Performance Indicator (PI) Rationale	
Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI

PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
	MCS implementation			
a	Guide post	Monitoring, control and surveillance **mechanisms** exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance **system** has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A **comprehensive** monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	Yes	Yes	No

Rationale

ICCAT

The Second Independent Performance Review of ICCAT (Spencer et al., 2016) highlighted that the Commission generally lacks robust mechanisms for effective real-time monitoring of most fisheries, with the notable exception of the eastern Atlantic bluefin tuna (eBFT). ICCAT's Monitoring, Control, and Surveillance (MCS) system relies heavily on data reporting and documentation protocols, especially the electronic Bluefin Catch Document (eBCD) system, which allows for full traceability from capture to final sale.

For small-scale fisheries (SSF) targeting bluefin tuna—such as this handline and longline fishery in Italy—the reliability of the MCS system is largely dependent on national implementation by the Contracting Party (in this case, Italy).

National Implementation – Italy (MASAF/PEMAC)

In Italy, the Ministry of Agriculture, Food Sovereignty and Forests (MASAF), through the Directorate-General for Maritime Fisheries and Aquaculture Policies (PEMAC), oversees the application of ICCAT and EU regulations at the national level. Vessels targeting bluefin tuna must hold an Autorizzazione Europea alla Pesca (AEP), and are monitored via a combination of electronic logbooks, prior notifications of landings, and catch validation procedures.

PEMAC distributes individual numbered tags (sigilli identificativi) for each authorized vessel, in line with national quota allocations. These tags must be affixed to each bluefin tuna upon landing and are linked to catch declarations in the eBCD system. The process includes:

- Pre-notification of arrival at port.
- On-landing inspection of catch weight and species.
- Tagging and immediate input of catch data into the eBCD.
- Documentation of each fish's weight and tag number on EU catch certificates.
- Tags remain affixed to the fish until final retail or processing.

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with

Compliance checks are conducted by the Italian Capitanerie di Porto (Coast Guard), Guardia di Finanza, and Maritime Directorate Inspectors, who inspect landing sites, vehicles, and business premises (e.g., fishmongers, processors, restaurants). There is limited sea patrol and recreational sector monitoring, although enforcement capacity has improved in recent years. Recreational fishing is an area still recognized as carrying higher risks of unreported catch.

Role of the Producer Organisation (PO)

The OPPAP, which represents longliners and handliners, is responsible for monitoring the quota uptake of its members. The PO provides catch data to PEMAC and coordinates landing declarations, thereby helping ensure alignment with national allocations. However, unlike more centralized POs, comprehensive and timely public reporting of quota uptake or compliance data is currently lacking on their official site. This reflects a documentation gap similar to what was previously observed for other national POs.

Moreover, reports about controls available from MASAF website for 2022 and 2023 provide clear evidence about the monitoring (MASAF, 2023; 2023), control and surveillance system that has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules. In particular, for the year 2022, the longline fishery targeting large pelagic species in the eastern side of Sicily, under the jurisdiction of Catania *Centro di Controllo Area Pesca* (CCAP), was subject to multiple inspection and enforcement operations. Notably, during the "SIRIO" operation conducted between January 31 and February 18, 2022, there were 55 inspections carried out, resulting in 31 infractions, with a total of € 49,574.67 in fines issued. In another relevant campaign, “BFT-CONNECT” (June 13–21, 2022), 49 inspections were conducted, identifying 19 infractions and leading to €40,366.14 in penalties. This campaign likely focused on monitoring compliance with bluefin tuna regulations, including traceability and size limits. From the 2023 report on fisheries control activities, specific data on the longline fishery targeting large pelagics in the eastern side of Sicily is found under the specific activities carried out by the Catania CCAP. On January 12, 2023, during a road inspection in Acitrezza (CT), authorities found approximately 300 kg of undersized bluefin tuna, 5 specimens of lampuga (about 40 kg), and 2 specimens of albacore tuna. All the seafood lacked traceability and was from illegal fishing. A fine of €33,333.33 was issued. On January 13, 2023, in Riposto (CT), at a wholesale vendor, 26 Mediterranean swordfish specimens (about 350 kg) were found intended for sale during the closed season. A fine of €2,666.66 was issued.

These cases represent enforcement activities related to longline fisheries in the eastern Sicilian region, particularly targeting bluefin tuna and swordfish, and demonstrate infractions such as undersized catches, fishing during closed seasons, and lack of traceability.

In conclusion, SG60 is met as Italy has implemented core elements of ICCAT’s MCS regime, including eBCD use, mandatory tagging, and coordinated land-side enforcement involving multiple state agencies. The OPPAP plays an active role in monitoring and reporting catch activities. SG80 is met as Italy maintains a structured and multi-agency MCS framework and documentation is publicly available evidence to confirm consistent, risk-based sea patrols or routine third-party verification of compliance levels for this fishery. Taking into account the issues regarding recreational catches and small-scale landing inspections as well as the lack of reporting on ETP species (see 3.2.3d), it is not possible to conclude that a comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules and SG100 is not met.

b	Sanctions

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with		
	Guide post	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, **are consistently applied** and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and **demonstrably** provide effective deterrence.
	Met?	Yes	Yes	No

Rationale

ICCAT

ICCAT depends on its Contracting Parties (CPCs) to enforce compliance measures against vessels operating under their flag. Enforcement tools available to ICCAT include trade sanctions and modifications to CPC quotas, including suspension, reduction, or withdrawal for repeated non-compliance. These actions have been historically applied to several EU member states operating purse seine fleets and managing tuna fattening facilities, confirming that SG60 is achieved.

Italy

In Italy, enforcement mechanisms include both administrative and criminal penalties, determined by the nature and gravity of infractions. Sanctions may involve the seizure of fishing gear, vessels, and transportation means, as well as substantial monetary fines. As with other EU countries, Italy's system is governed by EU fisheries regulations and national implementing legislation overseen by MASAF and its Directorate for Maritime Fisheries (PEMAC).

The OP Ami e Palangari appears engaged in promoting sustainable practices among its members, emphasizing product quality, traceability, and alignment with conservation measures (FederOP, 2025). However, no public record of formal sanctions or enforcement measures taken by the OP in recent years was identified. Assuming similar gaps in internal disciplinary transparency as observed in other Mediterranean artisanal fisheries, this affects the confidence level needed to assign the highest performance tier.

Italy participates in EU-wide control programs coordinated by the European Fisheries Control Agency (EFCA), including the Joint Deployment Plan (JDP) for Bluefin Tuna, which intensifies inspections during sensitive periods such as farm transfers and peak fishing months. The Italian Coast Guard (Guardia Costiera), in cooperation with PEMAC, contributes to enforcement activities. Despite these efforts, EFCA reports indicate ongoing risks of non-compliance across the Mediterranean, especially in the recreational sector (EFCA, 2024), which remains a challenge to achieving SG100 on a broader scale.

Increased Bluefin Tuna abundance across the Mediterranean and Eastern Atlantic, coupled with expanded recreational fishing allowances, complicates monitoring and enforcement efforts. There have been notable enforcement actions against recreational fishers in Italy in the past decade, particularly for unreported landings and illegal gear use.

For the UoA specifically, no instances of non-compliance have been reported in the last three years as the infractions reported in 3.2.3a are not related to the UoA vessels as confirmed both by coast guard and president of the OPPAP during the site visit. The main deterrents against non-compliance in the UoA framework are loss

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with		

of subsidies and tuna quota for the following year. This, combined with the presence of capacity-building, education, and compliance supported by the PO, suggests an effective deterrence framework is in place.

In conclusion, SG60 is met due to the existence of a functional national and EU enforcement framework with ICCAT compliance mechanisms. Also, SG80 is met based on PO engagement and a generally high level of compliance within the UoA as stated also by the coast guard during the site visit and reported in the control reports (MASAF, 2022; 2023). Finally, SG100 is not met, as it is not completely clear as the sanctions applied provide effective deterrence .

	Compliance			
c	Guide post	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.	**Some evidence exists** to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a **high degree of confidence** that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	Yes	Yes	No

Rationale

According to OPPAP, the vessels included in the Unit of Assessment (UoA) demonstrate satisfactory compliance with mandatory reporting requirements, including completion of paper logbooks and electronic logbooks for vessels over 12 meters, as well as submission of daily landing declarations and electronic Bluefin Catch Documentation (e-BCD) for bluefin tuna, in accordance with ICCAT regulations. These actions satisfy the minimum requirements under SG60.

The OPPAP conducts regular internal controls by systematically verifying member vessel landings and sales against assigned tail tag numbers and official government databases (e.g., TRQ database). Discrepancies are reportedly flagged and communicated to the competent authority. Evidence of these cross-checking practices and their outcomes is expected to be reviewed during the site visit.

Fishers and OPPAP representatives are actively involved in national and regional management processes through participation in technical meetings convened under MEDAC, with involvement from central institutions such as MASAF and its Directorate-General for Maritime Fisheries and Aquaculture (PEMAC). This engagement helps ensure that operational feedback from artisanal longline and handline fishers contributes to adaptive management processes.

The available public information (MASAF 2022; 2023) on the UoA vessels as well as the information gathered during the site visit from the Coast Guard provide some evidence to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery, meeting SG80.

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with			
However, adequacy and reliability of the fishery-specific data collection system which focus also on Principle 2 species (in particular ETP) require further verification and SG100 is not met.				
d	**Systematic non-compliance**			
	Guide post		There is no evidence of systematic non-compliance.	
	Met?		No	

Rationale

From the perspective of the International Commission for the Conservation of Atlantic Tunas (ICCAT), there is currently no documented pattern of systemic non-compliance by Italy. However, the Standing Committee on Research and Statistics (SCRS) has not incorporated estimates of unreported bluefin tuna catches into its stock assessment models. This does not eliminate the possibility of Illegal, Unreported, and Unregulated (IUU) fishing, particularly in artisanal segments such as longliners and handliners, where traceability and direct oversight remain more challenging.

Italy participates in a comprehensive Monitoring, Control and Surveillance (MCS) framework that includes EU-wide mechanisms like the Joint Deployment Plan for the Mediterranean (JDP-Med) coordinated by the European Fisheries Control Agency (EFCA). Key elements supporting compliance include the mandatory use of the electronic Bluefin Catch Document (eBCD), vessel monitoring systems (VMS), and application of the FAO Port State Measures Agreement (PSMA), which Italy has ratified.

Nonetheless, recent EFCA reports have continued to flag elevated IUU risks in Mediterranean bluefin tuna fisheries, especially among longline and handline operations—gear types used. While general MCS mechanisms are in place nationally under the coordination of MASAF and PEMAC, specific public data about enforcement actions, sanctioning outcomes, and vessel-level compliance rates in this segment of the fleet are limited.

Based on the official documents provided for 2022 and 2023 (MASAF, 2022; 2023) and supported by interviews conducted with the Coast Guard, there is no evidence of systematic non-compliance in the longline fishery targeting large pelagic species in Eastern Sicily. The annual fisheries control reports from the Coast Guard (MASAF, 2022; 2023) show a robust inspection system in place, including targeted operations (e.g., "BFT-CONNECT", "SIRIO", and others) that led to a limited number of infractions within the CCAP Catania area, despite high inspection intensity. These infractions, while significant when detected (e.g., seizure of undersized tuna or swordfish during closed season), were isolated cases rather than indications of pervasive illegal practices and are no related with UoA vessels. Moreover, penalties were issued, and corrective actions enforced promptly, suggesting effective enforcement and deterrence mechanisms.

The Coast Guard personnel confirmed during interviews that the UoA sector has shown good levels of compliance overall. Most operators in the region demonstrate awareness and adherence to regulations concerning minimum sizes, seasonal closures, and traceability. However, ICCAT Recommendation 11-10 requires that all fishing vessels, including small-scale longliners, record any interactions or incidental catches involving Endangered, Threatened, and Protected (ETP) species such as sea turtles, seabirds, marine mammals, and sharks. These interactions must be documented in the vessel's logbook, including information on species, condition at release or capture, and fate (retained, discarded, released alive or dead). This obligation is not optional and applies to all vessel sizes, with no exemptions for vessels below 12 meters in length. The implementation of Recommendation 11-10 is supported and enforced through:

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with

European legislation:

- Regulation (EU) No. 1224/2009 (Control Regulation), establishing the EU fisheries control system.
- Implementing Regulation (EU) No. 404/2011, which mandates that logbooks must include data on bycatch and interactions with ETP species.

Italian national legislation:

- Ministerial Decree of 26 July 1995, requiring detailed logbook records for longline vessels.
- Ministerial Decree of 3 June 2015, which allows alternative documentation in place of the logbook but still obliges the recording of ETP interactions.

Despite these clear legal requirements, vessels within the UoA under consideration do not record interactions with ETP species, either in logbooks or in alternative documentation. This constitutes a systematic non-compliance with ICCAT Recommendation 11-10 and its corresponding EU and national legal instruments and SG80 is not met.

References

ICCAT Recommendation 16-14: “Recommendation by ICCAT to Establish Minimum Standards for Fishing Vessel Scientific Observer Programs.”

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Ministero delle Infrastrutture e dei Trasporti – Comando Generale del Corpo delle Capitanerie di Porto - Guardia Costiera (2022).
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Mediterranean Advisory Council (MEDAC) – www.med-ac.eu

FederOP Profile of the PO – Organizzazione Produttori della Pesca Ami e Palangari Soc. Coop.

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with
ICCAT Compliance Reports – https://www.iccat.int/en/cc.html ICCAT Standing Committee on Research and Statistics (SCRS), various reports: https://www.iccat.int/en/scrs.html EFCA (2024). Joint Deployment Plan for the Mediterranean – Annual Report. FAO (2009). Port State Measures Agreement. MASAF Bluefin Tuna Regulatory Page: https://www.masaf.gov.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/163	
Overall Performance Indicator (PI) Rationale	
Insert sufficient rationale to support the conclusion for the Performance Indicator, making direct reference to each scoring issue (delete if not appropriate – e.g. rationale is provided for each Scoring Issue).	
Draft scoring range	60-79
Information gap indicator	Information sufficient to score PI

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives There is effective and timely review of the fishery-specific management system		
Scoring Issue		SG 60	SG 80	SG 100
a	**Evaluation coverage**			
	Guide post	There are mechanisms in place to evaluate **some** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **key** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **all** parts of the fishery-specific management system.
	Met?	Yes	Yes	Yes

Rationale

ICCAT

The International Commission for the Conservation of Atlantic Tunas (ICCAT) maintains structured internal mechanisms to assess and improve the performance of its fisheries management system, satisfying the SG60 scoring guidepost. Scientific oversight is conducted by the Standing Committee on Research and Statistics (SCRS), which is responsible for monitoring and assessing research related to bluefin tuna and other managed stocks. Additionally, the Compliance Committee (COC) ensures that contracting parties adhere to the provisions of the ICCAT Convention and its binding Recommendations. As stipulated in Recommendation 22-09, the multi-annual management plan for Eastern Atlantic and Mediterranean bluefin tuna (eBFT) is subject to a formal review by 2028, and subsequently every six years, ensuring continued adaptation based on scientific evidence and stock dynamics. ICCAT also commissions periodic independent performance reviews, such as those conducted by Spencer et al. (2016), covering institutional effectiveness and specific research initiatives, including its flagship Atlantic-Wide Research Programme for Bluefin Tuna (GBYP). These mechanisms meet SG80 and SG100 criteria.

European Union (EU)

At the European level, the Common Fisheries Policy (CFP) establishes a robust framework for the management of bluefin tuna across EU member states, including Italy. The EU submits annual reports to ICCAT detailing national-level implementation, which contributes to ongoing monitoring and adaptive governance. This satisfies SG60 for higher-level management evaluation.

Italy

In Italy, national implementation is overseen by the Ministry of Agriculture, Food Sovereignty and Forests (MASAF) through the Directorate-General for Maritime Fisheries and Aquaculture (PEMAC). This includes quota distribution, authorization of vessels, and the application of the electronic Bluefin Catch Document (eBCD) system. The Monitoring, Control and Surveillance (MCS) system employed by Italian authorities, including the Coast Guard and PEMAC, contributes to EFCA's risk-based inspection strategies (EFCA, 2024). Evaluations are further supported by peer-reviewed research from national scientific bodies.

PI 3.2.4	There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives There is effective and timely review of the fishery-specific management system		

Specifically, for the hook and longline fishery represented by OP, the fishery operates in alignment with ICCAT and EU rules under a certified, artisanal model that emphasizes traceability, ecological sustainability, and product quality. The producer organization plays an active role in monitoring compliance, supporting research participation, and collaborating in management plan evaluations at both national and regional levels. This includes contributions to ecosystem-level assessments within the Marine Strategy Framework Directive (MSFD) framework, particularly for the Tyrrhenian and Ionian Seas. Italy's MSFD strategies (MATTM, 2018) include periodic updates and implementation of a program of measures since 2020 that serve to integrate fisheries into a broader ecological monitoring context—thus supporting SG80 and SG100.

Taken together, the Italian system of governance, its alignment with ICCAT and EU mechanisms, and the integration of small-scale artisanal fisheries like the present UoA meet the requirements for SG60, SG80, and SG100.

b	**Internal and/or external review**			
	Guide post	The fishery-specific management system is subject to **occasional internal** review.	The fishery-specific management system is subject to **regular internal** and **occasional external** review.	The fishery-specific management system is subject to **regular internal and external** review.
	Met?	Yes	Yes	No

Rationale

ICCAT

The International Commission for the Conservation of Atlantic Tunas (ICCAT) conducts systematic internal reviews of its fisheries management systems through various specialized committees. Among these, the Compliance Committee (COC) plays a central role in evaluating the degree to which Contracting Parties adhere to ICCAT's Convention and its adopted Recommendations. This satisfies the requirements for SG60.

Following ICCAT's last independent Performance Review (Spencer et al., 2016), an ad hoc working group monitored implementation progress across ICCAT's structural bodies. These efforts led to updates to the ICCAT Convention, formally adopted in 2019 (ICCAT, 2019b), which indicates that SG80 is also met. However, independent external evaluations are not carried out on a recurring basis, and therefore SG100 is not met.

European Union (EU) and Italy

At the national level, Italy's bluefin tuna management system, under the oversight of the Ministry of Agriculture, Food Sovereignty and Forests (MASAF), undergoes annual review through the submission and assessment of Production and Marketing Plans (PMP) prepared by recognized Producer Organizations (POs). These PMPs must align with EU regulations and ICCAT frameworks and are reviewed by MASAF through the PEMAC directorate.

The performance of the national management system is further scrutinized through Italy's contributions to EU-wide fisheries assessments. These evaluations are integrated into EU submissions to ICCAT, fulfilling internal review criteria for the target species (e.g., bluefin tuna) and associated species like swordfish. Moreover, Italy

PI 3.2.4	There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives There is effective and timely review of the fishery-specific management system

participates in broader ecosystem and biodiversity monitoring under the EU Marine Strategy Framework Directive (MSFD), which covers non-target species and habitats. This supports SG60 and SG80 levels.

Although numerous scientific initiatives contribute to stock assessments, data collection and gear selectivity improvements—particularly in collaboration with national research institutes—external independent reviews are infrequent and limited primarily to target species. Therefore, SG100 is not considered met.

In conclusion, the fishery satisfies SG60 and SG80 through robust internal reviews by ICCAT and Italian national authorities, in coordination with the EU. However, the lack of routine, independent external audits for the full range of ecological impacts means SG100 is not met.

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Overall Performance Indicator (PI) Rationale

Draft scoring range	≥80
Information gap indicator	Information sufficient to score PI

8. Appendices

8.1. Assessment information

8.1.1. Small-scale fisheries

Table 18. Small-scale fisheries. Estimates evidenced during the site visit by the client.

Unit of Assessment (UoA)	Percentage of vessels with length <15m	Percentage of fishing activity completed within 12 nautical miles of shore
1	≈ 80%	≈ 50%

8.2. Evaluation processes and techniques

8.2.1. Site visits

The site visit took place in Sicily on June 10 and 11. An additional meeting with a stakeholder was carried out remotely on the 13th of June. Please see agenda below for details.

The assessment team attended all the meetings:

- Giuseppe Scarcella – P1 and P3 Expert
- Gemma Quilez Badia – P2 Expert and Team Leader

The purpose of the site visit was to gather and verify information relevant to the certification process of the longline fishery targeting Atlantic Bluefin Tuna (*Thunnus thynnus*), as part of the MSC (Marine Stewardship Council) assessment.

Date	Participation	Local Time UTC+3	In person/remote
10th of June (Tuesday)	Client: • Stefano Pennisi – President of the Producer Organization • Pierluigi Carbonara – Consultant / Biologist In addition three skippers/owners of vessels under 12 meters joined from 10:30h: • Sebastiano Conti (Zanna Bianca) • Davide Varica (Sinergia Pesca 519) • Francesco Anastasi (Airone 2)	9:30-12:30h	In person

	At: Headquarters of the "Organizzazione Produttori della Pesca Ami e Palangari Soc. Coop."		
	Visit to the port of Stazzo • Stefano Pennisi – President of the Producer Organization • Pierluigi Carbonara – Consultant / Biologist • Sebastiano Conti (Zanna Bianca) • Davide Varica (Sinergia Pesca 519) • Francesco Anastasi (Airone 2)	12:30-13:30h	In-person
	Lunch	13:30-14:30h	
	• Commander Basile • Stefano Pennisi Capitaneria di Porto, Stazzo	15:30-17h	In-person
	AT only meeting	18-18:30h	In-person
11th June (Wednesday)	Closing meeting with the Client at their office: • Stefano Pennisi – President of the Producer Organization	9:30-11h	In-person
13th June	Meeting with WWF: Alessandro Buzzi (WWF MedPO), Alessia Bacchi (WWF IT); Raul García (WWF SP)	10:00-11:0h	Remote

8.2.2. Recommendations for stakeholder participation in full assessment

To support a robust full assessment, it is recommended to broaden stakeholder engagement by involving local fishers, NGOs, scientific institutions, Producer Organizations, and relevant governmental authorities. A structured stakeholder engagement plan should be developed, outlining clear timelines, opportunities for consultation (both in-person and remote), and defined roles for each stakeholder group.

8.3. Risk-Based Framework outputs

8.3.1. Productivity Susceptibility Analysis (PSA)

Mediterranean spearfish has been classified as Secondary minor, and as it is data-deficient a PSA analysis has been carried out for this stock, as per MSC requirements (see **Table 19**).

Table 19. Productivity Susceptibility Analysis (PSA) productivity attributes and scores.

Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Mediterranean spearfish *Tetrapturus belone*	
Attribute	Rationale	Score
Average age at maturity	1.1[135]. Estimated from Lm, Linf., K and t_o.	**1**
Average maximum age	Life span (approx.): 5.7 years estimated from Linf., K and t_o.	**1**
Fecundity	Fecundity for this species is unknown and we borrowed values for a similar species *Tetrapturus albidus*, known to produce 190,400–596,200 hydrated oocytes per mature female[136].	**1**
Average maximum size Not scored for invertebrates	240 cm^3	**2**
Average size at maturity Not scored for invertebrates	116 cm^3	**2**
Reproductive strategy	Mediterranean spearfish are batch spawners, shedding batches of hydrated oocytes, in separate spawning events, most likely directly into the sea where fertilization occurs[137].	**1**
Trophic level	4.4[3]	**3**
Density dependence Invertebrates only	NA	
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	NA – not scored cumulatively	
Attribute	Rationale	Score
Areal Overlap	This fishery occurs in GSA 10, 11, 17, 18, and 19.	**2**

135 https://www.fishbase.se/popdyn/KeyFactsSummary_2v2.php?ID=1823&GenusName=Tetrapturus&SpeciesName=belone&vStockCode=2019&fc=419

136 https://www.sciencedirect.com/science/article/abs/pii/S0165783608002300

137 https://www.iccat.int/Documents/SCRS/Manual/CH2/2_1_8_2_MSP_ENG.pdf

Table 19. Productivity Susceptibility Analysis (PSA) productivity attributes and scores.

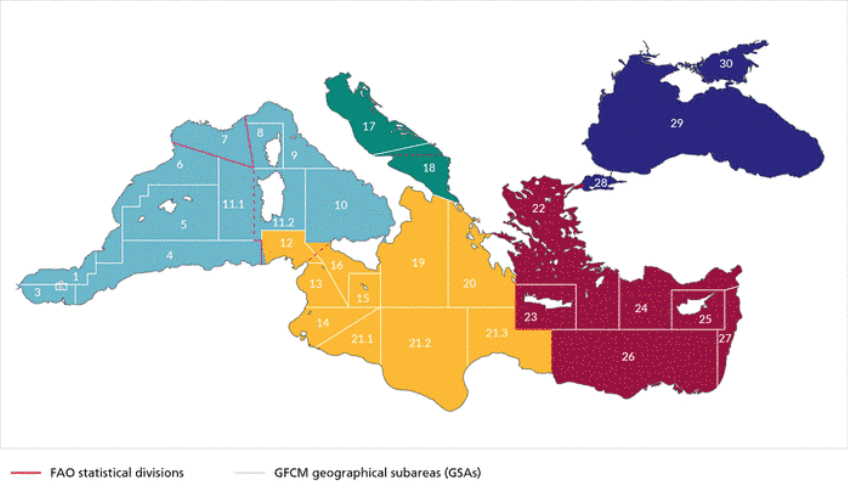
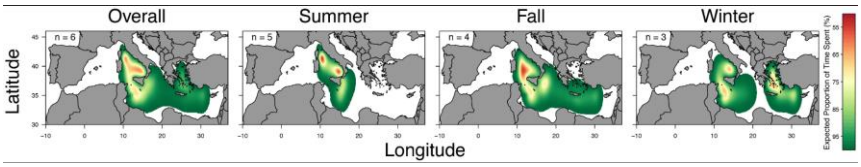
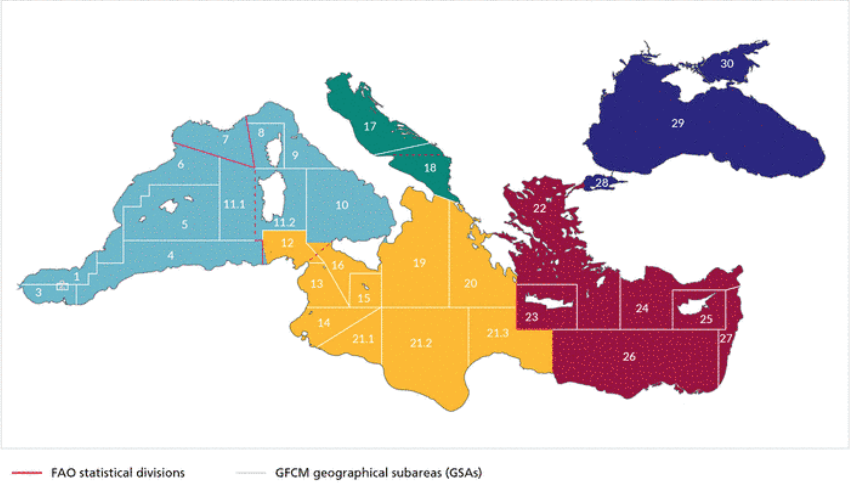
	 *Tetrapturus belone* is endemic from the Mediterranean Sea (MED), where it is almost exclusively distributed (Nakamura, 1985; Collette and Graves, 2019). Information on the distribution patterns and seasonal movements of *T. belone* in the MED is still incomplete and data on the occurrence of this species in the Levantine Basin (Bariche and Fricke, 2020; Gerovasileiou et al., 2020; Saad et al., 2024) and western MED (Robins and de Sylva, 1963) are often fragmentary. However, *T. belone* is distributed around the Italian peninsula, primarily found in the Strait of Messina, Tyrrhenian Sea and Strait of Sicily (Di Natale et al., 2005, 2011; Di Natale, 2012). Moreover, a recent study (Malara et al., 2024) tagged six individuals in the Strait of Messina and Tyrrhenian Sea with pop-up satellite tags and their movements were mainly restricted to the central Mediterranean. Utilization distributions derived from geolocation revealed an overall and seasonal importance of the Tyrrhenian Sea and Strait of Sicily (see figure below).  Based on all the above, the Areal overlap could be 10-30%.	
Encounterability	According to Malara et al. (2024), the six tagged individuals largely remained in the upper epipelagic layer above 50 m across all seasons, spending approximately 99% of time at or above this depth, with *T. belone* spending a significantly greater amount of time in the first 10 m of water. In addition, they found a higher time spent at 0 – 10 m during the night and 20 – 50 m during the day. During the site visit, the assessment team learned that the assessed gear typically fishes at depths between 50 and 200 m.	**1**

Table 19. Productivity Susceptibility Analysis (PSA) productivity attributes and scores.		
	Therefore, there is a low overlap with fishing gear.	
Selectivity of gear type	The usual size composition in commercial catches ranges from 10 to 30 kg (mostly 14 to 18 kg) and averages about 200 cm in body length.[138] Bearing in mind that average size at maturity is 116 cm, it's likely that individuals < size at maturity are rarely caught.	**1**
Post capture mortality	Retained species, no individuals are released.	**3**
Catch (weight) Only where the scoring element is scored cumulatively	NA – not scored cumulatively	

Being precautionary (see **Section 7.5.1 - Primary and Secondary species**), Blue shark has been classified as Secondary after the site visit, and as it is data-deficient a PSA analysis has been carried out for this stock, as per MSC requirements (see **Table 20**).

Table 20. Productivity Susceptibility Analysis (PSA) productivity attributes and scores.		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Blue shark *Prionace glauca*	
Attribute	Rationale	Score
Average age at maturity	Age at 50% maturity was estimated at 4.9 years for males and 5.5 year for females.[139] Low risk would be <5 years, therefore, the AT has decided to take the riskiest value (i.e., 5.5), hence giving a score of 2.	**2**
Average maximum age	20 years[140]	**2**
Fecundity	4-63 young in a litter[44]	**3**
Average maximum size Not scored for invertebrates	400 cm TL[44]	**3**
Average size at maturity Not scored for invertebrates	Length at 50% maturity (L50) was estimated to be 202.9 cm LT for males and 214.7 cm LT for females.[43]	**3**
Reproductive strategy	Viviparous	**3**
Trophic level	4.4[49]	**3**
Density dependence Invertebrates only	NA	
Susceptibility		
Fishery	NA – not scored cumulatively	

[138] https://www.fishbase.se/references/FBRefSummary.php?ID=43
[139] https://www.cambridge.org/core/journals/journal-of-the-marine-biological-association-of-the-united-kingdom/article/abs/biological-characteristics-of-blue-shark-prionace-glauca-in-the-mediterranean-sea/F6F6D6BAAFC70916F8A8A998FDBED641
[140] https://www.fishbase.se/summary/Prionace_glauca.html

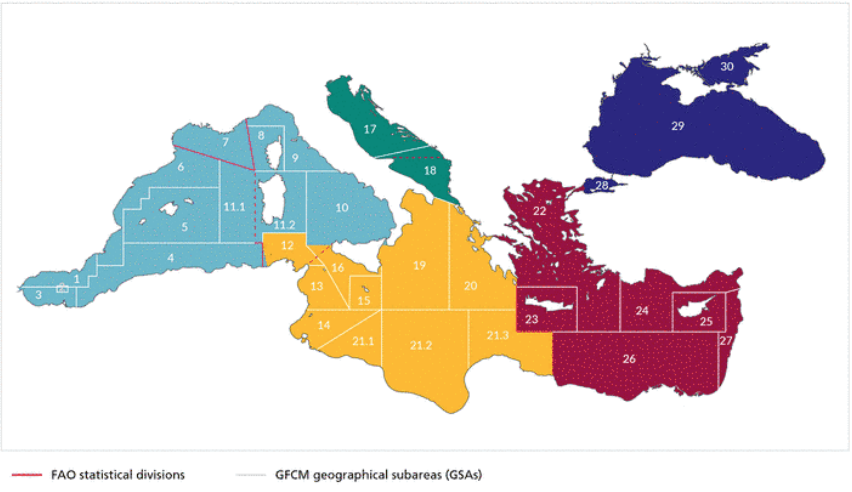
Table 20. Productivity Susceptibility Analysis (PSA) productivity attributes and scores.		
Only where the scoring element is scored cumulatively		
Attribute	Rationale	Score
Areal Overlap	This fishery occurs in GSA 10, 11, 17, 18, and 19.  The blue shark, *Prionace glauca*, is the most abundant pelagic shark in the open ocean. In the Mediterranean Sea, the blue shark stock is listed as Critically Endangered (CR) by the International Union for Conservation of Nature since 2016. Surprisingly, basic information on its biology and ecology, remains unknown. From genetic, tagging, by-catch studies it is obvious that the blue shark is distributed all over the Mediterranean Sea. [43, 141, 142, 143, 144] Based on all the above, the Areal overlap could be 10-30%.	**2**
Encounterability	*P. glauca* is an oceanic-epipelagic species that can be found close to the coast in some areas and at certain times, particularly where the shelf is narrow or even in ports and marinas. It is found in deep waters of tropical, warm and temperate seas from the surface to a depth of at least 1,291.1 m, with greater abundancy in areas outside the platform. Daily vertical movements were observed from an average depth of 74 m at night to an average depth of 412 m during the day. This behaviour was also observed in other areas such as the central Pacific. Observations of satellite transmitter data in the North Atlantic, showed that the blue shark's dives almost always take place during the day.[145] Over deep water, in the Atlantic and Pacific Ocean, tracked blue sharks spent large proportions of time in the warm surface layer above the thermocline (i.e., ~65% of their time above 50 m), whilst blue sharks off	**2**

[141] https://www.argos-system.org/blue-sharks-in-the-western-mediterranean-sea/#:~:text=Argos%20can%20help%20in%20improving,stellaris%2Dasso.org/%20)
[142] https://onlinelibrary.wiley.com/doi/10.1111/j.1439-0426.2009.01221.x
[143] https://doi.org/10.1111/eva.70005
[144] https://doi.org/10.1371/journal.pone.0305608
[145] https://www.iccat.int/Documents/SCRS/Manual/CH2/2_2_1_1_BSH_ENG.pdf

Table 20. Productivity Susceptibility Analysis (PSA) productivity attributes and scores.		
	Hawaii often moved within the upper 220 m, with occasional dives down to depths of 500 to 600 m. While in coastal areas tracked blue sharks showed considerable variation in vertical habitat use.[146] During the site visit, the assessment team learned that the assessed gear typically fishes during the day at depths between 50 and 200 m. Therefore, there could be a medium overlap with the fishing gear.	
Selectivity of gear type	A total of 870 blue sharks ranging from 70 to 349 cm in total length (LT) were sampled from the swordfish longline fishery in the Mediterranean Sea during the period 1998–2003. The most frequent size caught was 140-160 cm. Bearing in mind that average size at maturity is 202.9 cm LT for males and 214.7 cm LT for females[43], it's likely that individuals < size at maturity are frequently caught.	**3**
Post capture mortality	A postrelease survival study on 5 different shark species (including *P. glauca*) in the central Pacific Ocean was carried out from 2001 to 2006. Meta-analysis of published reports and that study (n=78 reporting PSATs) indicated that the summary effect of postrelease mortality for blue sharks was 15% (95% CI, 8.5–25.1%).[147] More recently, during the SELPAL project, based on electronic tagging data for a sample of blue sharks, the post-release mortality rate was estimated <25%.[148] During the site visit, the assessment team was informed that very rarely the UoA catches **Blue shark (*Prionace glauca*)**, although, according to them, they are always released alive by cutting the line. These interactions are not reported in their logbooks. Based on all the above, at this time, as there is no real evidence and no data from the UoA, a precautionary score of 2 is granted.	**2**
Catch (weight) Only where the scoring element is scored cumulatively	NA – not scored cumulatively	

One of the bait species, i.e., round sardinella (*Sardinella aurita*) is data deficient, hence, a PSA analysis has been carried out for this stock, as per MSC requirements (see **Table 21**).

[146] https://doi.org/10.3354/meps08500
[147] https://spo.nmfs.noaa.gov/content/postrelease-survival-vertical-and-horizontal-movements-and-thermal-habitats-five-species
[148] https://www.amop.fr/wp-content/uploads/2018/07/SELPAL-Rapport.pdf

Table 21. Productivity Susceptibility Analysis (PSA) productivity attributes and scores.		
Performance Indicator	2.2.1	
Productivity		
Scoring element (species)	Round sardinella *Sardinella aurita*	
Attribute	Rationale	Score
Average age at maturity	2.7[149]. Estimated from Lm, Linf., K and t_o.	**1**
Average maximum age	Life span (approx.): 10.9 years estimated from Linf., K and t_o.[57]	**2**
Fecundity	26,555[57]	**1**
Average maximum size Not scored for invertebrates	41.0 cm[150]	**1**
Average size at maturity Not scored for invertebrates	21.4 cm[57]	**1**
Reproductive strategy	The breeding pattern is extremely complex, with two principal spawning periods in some areas.[58]	**1**
Trophic level	3.4[57]	**3**
Density dependence Invertebrates only	NA	
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	NA – not scored cumulatively	
Attribute	Rationale	Score
Areal Overlap	This fishery occurs in GSA 10, 11, 17, 18, and 19.  Round sardinella is distributed in the West African coast from Gibraltar southward to Saldanha Bay in South Africa, especially in the three West African upwelling areas, from Mauritania to Guinea, from Côte d'Ivoire to Ghana and from Gabon to Angola; also in Mediterranean Sea and Black	**1**

[149] https://www.fishbase.se/popdyn/KeyFactsSummary_1.php?ID=1043&GenusName=Sardinella&SpeciesName=aurita&vStockCode=1059&fc=794

[150] https://www.fishbase.se/summary/1043

Table 21. Productivity Susceptibility Analysis (PSA) productivity attributes and scores.		
	Sea. In the western Atlantic Ocean from Cape Cod in USA to Argentina, including Bahamas, Antilles, Gulf of Mexico and the Caribbean coast.[58] Based on all the above, the Areal overlap would be <10%	
Encounterability	This is a bought bait species, therefore, there is a low (in fact, none) overlap with the fishing gear from the UoA.	**1**
Selectivity of gear type	Round sardinella used for bait is taken with purse seine gear in the same waters as the UoA, using a mesh size of 10 mm (1 cm). Size of retained round sardinella is approximately 15-20 cm. Average size at maturity is 21 cm. Individuals below maturity size are frequently cught. Selectivity score is 3.	**3**
Post capture mortality	Default value for a retained species.	**3**
Catch (weight) Only where the scoring element is scored cumulatively	NA – not scored cumulatively	

The results of the PSAs are shown below (**Table 22**). The **Mediterranean spearfish** achieves an MSC PSA derived score of 96 (i.e., unconditional pass), the **blue shark** had a PSA derived score is 70 (i.e., a condition would be raised), and the **round sardinella** would also achieve an MSC PSA derived score of 98 (i.e., unconditional pass).

Table 22. MSC Productivity Susceptibility Analysis (PSA) derived scores.

		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
Tetrapturus belone	Mediterranean spearfish	1	1	1	2	2	1	3		1.57	2	1	1	3	1.13	1.93	97	Low	≥80
Prionace glauca	Blue shark	2	2	3	3	3	3	3		2.71	2	2	3	2	1.58	3.14	70	Med	60-79
Sardinella aurita	Round sardinella	1	2	1	1	1	1	3		1.43	1	1	3	3	1.20	1.87	98	Low	≥80

8.4. Harmonised fishery assessments

The following are the overlapping fisheries with which harmonization would be required at full assessment.

Table 23. Overlapping fisheries.

Fishery name	Certification status and date	Performance Indicators to harmonise
SATHOAN French Mediterranean Bluefin tuna artisanal longline and handline fishery	Certified since 23 Oct 2020	P1
JC Mackintosh Greenstick, handline and fishing rod bluefin tuna fishery	Certified since 08 Sep 2022	P1
Usufuku Honten Northeast Atlantic longline bluefin tuna fishery	Certified since 10 Aug 2020	P1, PI 2.3.1
AGAC four oceans Integral Purse Seine Tropical Tuna Fishery	Certified since 08 Dec 2021	PI 2.3.1
Anabac Atlantic purse seine yellowfin tuna (Thunnus albacares) and skipjack tuna (Katsuwonus pelamis) fishery (FAD and FSC)	Certified since 25 Jun 2021	PI 2.3.1
US North Atlantic swordfish, yellowfin, and albacore tuna fishery	Certified since 28 Mar 2013	PI 2.3.1
Atlantic Ocean tropical tuna French purse seine	Certified since 14 Mar 2024	PI 2.3.1
Tuna Alliance Atlantic albacore longline fishery	Certified since 20 Jun 2023	PI 2.3.1

For Principle 3, scores that relate to the RFMO level are consistently harmonized. There are no other Italian bluefin tuna fisheries in the MSC programme requiring further harmonization.

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