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PRE-ASSESSMENT BLUFISH PROJECT

Southern Adriatic Sea (GSA 18) horned octopus bottom trawl fishery, -Assopesca (Associazione Armatori da Pesca di Molfetta), Molfetta BA -Cooperativa Santa Lucia, Manfredonia FG

MARINE STEWARDSHIP COUNCIL

Report No.: Horned_Octopus_BT_GSA18_P1_P2_P3, Rev. 0
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Preassessmen of the Southern Adriatic Sea (GSA 18) European anchovy purse seine fishery , against MSC Fisheries Standards v2.0.

Prepared by:	Verified by:
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Southern Adriatic Sea (GSA 18) horned octopus bottom trawl fishery

Pre-Assessment Report

Conformity Assessment Body (CAB)	DNV GL
Fishery client	MARINE STEWARDSHIP COUNCIL
Assessment Type	Pre-assessment

Pre-Assessment Report

September 2019

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1 Introduction

The purpose of this pre-assessment is to assess whether the fishery would meet version 2 MSC Certification Requirements.

This report is a pre-assessment which provides details of the MSC assessment process for the bottom trawl fishery targeting horned octopus in the South Adriatic Sea (GSA 18). The process begins with the draft of the pre-assessment on 6th May 2019 and was concluded in 5th August 2019, after an internal review.

A review of information presented by the client has been scored by the assessment team also after a site visit in Molfetta and Manfredonia were most of the vessels targeting deep water rose shrimp with bottom trawl are located. Please note this report does not represent a final scoring outcome or a certification decision.

The scoring presented in this report has not been reviewed by stakeholders, peer reviewers or the client – these steps will all take place from here onwards in the case the client will decide to start a full assessment. The site visit was conducted the 4th of June 2019 in Molfetta and Manfredonia.

Stakeholders are encouraged to review the scoring presented in this pre-assessment and use the Stakeholder Input Form to provide evidence to the team of where changes to scoring are necessary. DNV GL welcomes stakeholder submissions on the pre-assessment from 15th July 2019 for a period of 60 days.

The assessment team for this fishery assessment comprised of Giuseppe Scarcella, who acted as team leader and primary Principle 3 specialist; Alessandro Ligas, who was primarily responsible for evaluation of Principle 1 and Antonello Sala, who was primarily responsible for evaluation of Principle 2. Giuseppe Scarcella was also the traceability expert advisors.

2 Glossary

AIS Automatic identification system
CA Consequence Analysis (RBF)
CFP Common Fisheries Policy
CPU Catch per Unit of Effort
CSA Consequence Spatial Analysis (RBF)
EEZ Exclusive Economic Zone
EFCA European Fisheries Control Agency
ETP Endangered, threatened and protected species
EU European Union
FCR Fisheries Certification Requirements
GES Good Environmental Status
GFCM General Fisheries Commission for the Mediterranean
GSA Geographical Sub-Area
LTL Low Trophic Level
MCRS Minimum Conservation Reference Size
MEDAC Mediterranean Advisory Concil
MIPAAF Italian Ministry of Agricolture and Forestry
MLS Minimum Landing Size
MSC Marine Stewardship Council
PI Performance indicator
PISG Performance Indicator Scoring Guidepost
PRI Point of Recruitment Impairment
PSA Productivity-Susceptibility Analysis (RBF)
RBF Risk-Based Framework
SG Scoring Guidepost
SI Scoring Issue
SIC Sites of Important Communities
SPZ Special Protection Zone
STECF Scientific, Technical and Economic Commetee for Fisheries
TAC Total allowable catch
UoA Unit of Assessment
VME Vulnerable marine ecosystems

3 Executive summary

All team members listed below have completed all requisite training and signed all relevant forms for assessment team membership on this fishery.

Assessment team leader: Dr Giuseppe Scarcella
Primarily responsible for assessment under Principle 3

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 PhD 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 Research Council – Institute of Marine Science of Ancona (CNR-ISMAR). During the years of employment at CNR-ISMAR 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, otholith analysis, population dynamic and fisheries management. 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. At the moment he is member of the Scientific, Technical and Economic Committee for Fisheries for the European Commission (STECF). Dr Scarcella is author and co-author of more than 30 scientific paper peer reviewed journals and more than 150 national and international technical reports, most of them focused on the evolution of fish assemblages in artificial habitats and stock assessment of demersal species. For some years now, he has been working in fisheries certification applying the Marine Stewardship Council standard for sustainable fisheries, currently concentrating on Principle 1 of the Standard. Furthermore, Dr Scarcella holds the credential as Fishery team leader (MSC v2.0). Giuseppe has passed MSC training and has no Conflict of Interest in relation to this fishery. Full CV available on request.

Expert team member: Dr Alessandro Ligas
Primarily responsible for assessment under Principle 1

Alessandro Ligas holds a Master Degree in Biological Sciences and a PhD in Marine Ecology (University of Pisa, Italy). He has 15 years of experience in fisheries science and international and national projects. Since 2002, he is involved in the activities carried out under the EU DCF. His research focuses on the biology and population dynamics of marine fish and shellfish stocks to provide scientific advice on stocks and fisheries of commercial and ecological importance. From 2012 to 2014, he has worked as project leader (Senior Scientific Officer) at the Agri-Food and Biosciences Institute (AFBI), Belfast, UK, responsible for the design and implementation of appropriate data collection programmes in support of the assessment and management of fisheries in the Irish Sea. Currently, he holds the position of researcher at CIBM. He is the chairman of the GFCM Working Group on Stock Assessment of Demersal species (WGSAD) in the Mediterranean Sea, and has a decadal experience in participating to ICES and STECF expert working groups. His experience has allowed him to acquire thorough knowledge in the fisheries sector in both the Mediterranean and north-eastern Atlantic waters, and familiarity with European fishery legislation (e.g. CFP, MSFD).

Expert team member: Dr Antonello Sala
Primarily responsible for assessment under Principle 2

Antonello Sala is scientific researcher at the Fishing Technology Unit at the National Research Council (CNR) in Ancona, Italy. Expert in efficiency and selectivity research; fishing gear technology and fuel saving; measurements of the engineering performance of the fishing gears at sea using underwater instrumentation; fishing gear design; netting material properties; modelling and performance; physical and biological impacts produced in the marine environment by human activities. He is responsible of the Fishing Technology Unit and has over 24 years of experience of studying the wider ecosystem effects of fishing on the marine environment. Since 2010 he is member of the European "Scientific, Technical and Economic Committee for Fisheries (STECF)". Since 2014 he has been contracted by the European Fisheries Control Agency (EFCA) as external expert for the "Assistance with the development of a methodology for the statistical and technical analysis of fisheries data". His research interests are fishing gear technology and fuel saving, measurements of the engineering performance of the fishing gears at sea using underwater instrumentation and fishing gear design. Dr. Sala has been responsible scientist in several EU and national research projects and has worked numerous times as a scientific consultant and served on several national and international evaluation committees. He has published over 70 peer reviewed scientific papers and is on the editorial board of various scientific journals.

Using data collected during the previous stage of Blufish project Italy, the selected fishery have been pre-assessed with regards to the MSC Standards by the independent certification bodies. The objective is to identify the area where

improvements are needed to achieve the MSC sustainability level. During a MSC pre-assessment, certifiers and local experts evaluate, at a provisional level, a fishery's performance against the MSC fisheries standard. This allows any potential issues in a fishery's performance to be identified, and enables potential fishery clients to improve and prepare accordingly for a full assessment.

In the present pre-assessment the team used recent, publicly available information on stock status, bycatch species, and management to describe and evaluate potential MSC scoring ranges for the fishery. Main strengths and weakness of the of the fishery are summarized below. The weakness will need to be considered in Fishery Improvement Project (FIP) or full assessment.

The team did not have a specific fishery client to consult for this analysis and relied on publicly posted information to develop this assessment. However, site visit was conducted to discuss with major stakeholder interested in the certification as Assopesca (Associazione Armatori da Pesca di Molfetta) in Molfetta and Cooperativa Santa Lucia in Manfredonia where around 45 and 20 trawlers respectively are active with tonnage comprised between 25-100 GT.

Client strengths

The fishery associations based in Molfetta and Mafredonia are a well-established fishery actor in the Southern Adriatic Sea. It is well integrated in the management process in Italy.

The fishery has not a deleterious impact on other species and the habitat/ecosystem.

There is a well-established data collection system providing feedback to the decision making process.

The fishery largely takes place in the Italian waters, where the Italian Coast Guard carries out monitoring and inspections. The Italian enforcement system is generally considered to be very effective.

Client weaknesses

The harvest strategy and the HCRs in place are not tested because recently implemented only by Italy in a defined Management Plan.

There is not an analytical assessment of the target species.

Review of alternative measures to minimize mortality of ETP species is not completely in place.

Determination

On completion of the initial review of information and scoring, the assessment team conclude that principles 1, 2 and 3 score above 80.

4 Report details

4.1 Aims and constraints of the pre-assessment

The present report is a 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.

The CAB outlines that limitations placed on this pre-assessment are inaccessibility of the fishery key data as the statics on the inspection and infractions in the area.

4.2 Version details

The report shall include a statement on the versions of the fisheries program documents used for this assessment.

Table 1 – Fisheries program documents versions

Document	Version number
MSC Fisheries Certification Process	**Version 2.1**
MSC Fisheries Standard	**Version 2.01**
MSC General Certification Requirements	**Version 2.3**
MSC Pre-Assessment Reporting Template	**Version 3.1**

5 Unit(s) of Assessment

5.1 Unit(s) of Assessment

Table 2 – Unit of Assessment (UoA)

UoA 1	Description
Species	Horned octopus (*Eledone cirrhosa*)
Stock	Horned octopus in GSA 18
Geographical area	GSA 18
Gear	Bottom trawlers
Client group	Associazione Armatori da Pesca di Molfetta – Coperativa Santa Lucia di Mafredonia
Other eligible fishers	None
Justification for choosing the Unit of Assessment	Considering the biology of the species the horned octopus is considered only in GSA 18; while the management is considered for GSA 17-18.

6 Traceability

6.1 Traceability within the fishery

Italian fishery law requires that all vessels keep detailed logbooks with real time information on the species and quantities on board. Round weight is recorded after each haul, and conversion factors for each product are applied. When the catch is brought on board, the different species are immediately separated into different boxes. Each species is stored separately in the holds. 'Fish masters' are responsible for ensuring species are marked and stored appropriately and that certified and non-certified fish are not mixed. All crew members involved in the processing of the fish are also trained to ensure segregation of species throughout the process.

The Italian Coast Guard inspects all landings by Italian vessels.

The European Union regulation (EC 1224/2009), is designed to ensure full traceability of all marine fishery products traded with the European Community. This is achieved by means of a catch certification scheme in cooperation with third countries. Fishery products can now only be imported into the European Community when accompanied by a catch certificate, issued by the competent authorities of the flag State certifying that the catches concerned have been made in accordance with applicable laws, regulations and international conservation and management measures.

The internal procedures on board the vessels as well as a high level of enforcement activities by authorities in Italy are considered sufficient to ensure fish and fish products are clearly identified and their origin is known

Table 3 – 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.	*No, regulations related to fishing gear (e.g. mesh size and length) are the same for all demersal species in the Adriatic Sea.*
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, the UoC vessels only fish in the Adriatic Sea (see also Principle 3 – Effective management)*
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 - Landing - Auction If Yes, please describe how any risks are mitigated.	*No. There is not any other certified fishery.*
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.*
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.*

7 Pre-assessment results

7.1 Pre-assessment results overview

7.1.1 Overview

The scoring of the fishery is rather good for principles 2 while conditions related with the harvest strategy and the management of the resources are observed in P1 and P3.

7.1.2 Recommendations

The CAB strongly recommends potential clients to implement a communications that may need to take place with management agencies (MIPAAFT and GFCM) to explain the MSC assessment process and the implications (including costs and benefits) of certification.

7.2 Summary of potential conditions by Principle

Table 4 – Summary of 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	**0**
Principle 3 – Effective management	**0**

7.3 Summary of Performance Indicator level scores

Table 5 – Summary of Performance Indicator level scores

Performance Indicator	Draft scoring range	Data deficient?
1.1.1 – Stock status	**> 80**	**No**
Rationale or key points		
The Risk Based Framework (RBF) has been used to score this PI, because no stock status relative to reference points is available for target species, derived either from analytical stock assessment or using empirical approaches (Sartor et al., 2017). The management plan of demersal resources in GSAs 17-18 (MIPAAFT, 2018) includes as associate species the horned octopus. This management plan considers the biomass index trend coming from the scientific trawl surveys (MEDITS). The results of the RBF assessment are: CA Score: 100 PSA Score: 84 The MSC CR (see CRv2.0, Table PF7) indicates that for scores at this level, the overall score awarded for PI shall be less than 80, as near to the midway point between CA and PSA scores as possible. The total score is therefore 92. See RBF section in 8.3 for more details.		
1.1.2 – Stock rebuilding	**NA**	**No**

Rationale or key points		
The stock is not depleted.		
1.2.1 – Harvest Strategy	**60-79**	**No**
Rationale or key points		
The management plan of demersal resources in GSAs 17-18 (MIPAAFT, 2018) includes as associate species the horned octopus. This management plan considers the biomass index trend coming from the scientific trawl surveys (MEDITS). However, the Management Plan has been recently implemented, and foresees a 16% fishing activity reduction by 2020; thus, no test of its effectiveness can be conducted so far. Therefore, this scoring guidance is met at SG60.		
1.2.2 – Harvest control rules and tools	**60 – 79**	**No**
Rationale or key points		
The management plan of demersal resources in GSAs 17-18 has been recently implemented, and foresees a 16% fishing activity reduction by 2020. There is still no evidence that the measures in place will be able to keep the stock fluctuating around the target level. This meets SG60.		
1.2.3 – Information and monitoring	**≥80**	**No**
Rationale or key points		
A comprehensive range of information is available. Besides data such as size distribution of catches, survey and LPUE data, additional information includes biological parameters, and spatio-temporal distribution of juveniles and adults. This meets the requirements at SG100.		
1.2.4 – Assessment of stock status	**≥80**	**No**
Rationale or key points		
Default 80.		
2.1.1 – Primary Outcome	**≥80**	**No**
Rationale or key points		
According to the last available assessment, the primary species listed in Table 2.1 are above PRI.		
2.1.2 – Primary Management	**≥80**	**No**
Rationale or key points		
The management measures in place are considered appropriate for managing the primary main species at a point where recruitment impairment (PRI) is unlikely. These measures include aerial restrictions (based on depth), effort restrictions, minimum landing sizes, seasonal closures and technical gear measures. However, these measures are not considered to be highly likely to ensure that primary main species remain above the PRI; there is not an objective basis for confidence that the measures will work, and robust management focused on reducing fishing mortality and improving selectivity is advocated for Mediterranean fish stocks on a whole (e.g. see Paraskevas et al., 2014). Evidence of implementation is likely to exist in the form of at-sea inspection reports of gear and VMS records etc.		

2.1.3 – Primary Information	**≥80**	**No**
Rationale or key points		
As is described in detail for scoring issue 2.1.3 (a) above, the UoA is subject to both EU and GFCM fisheries data collection requirements. Some quantitative information is available to assess the impact of the UoA on non-target species with respect to status as a result of the application of the EU DCF and GFCM DCRF in the Adriatic Sea – SG 100 is met.		
2.2.1 – Secondary Outcome	**≥80**	**No**
Rationale or key points		
Information on catches of mixed bottom trawl fisheries in the Adriatic Sea comes from a number of sources: (i) data collected under the EU fisheries Data Collection Framework (DCF) / data collected under the GFCM Data Collection Reference Framework (DCRF), (ii) data from on-board observations carried out in line with EC 812/2004, (iii) information from scientific studies. Official Italian DCF catch data for bottom trawlers operating in the Adriatic Sea (i.e. GSAs 17 and 18) shows that numerous other species are caught and landed besides hake, Norway lobster, red mullet, musky octopus, albeit in very small volumes. Apart Norway lobster, none of these species have a stock assessment, but they are all currently managed through the MPs implemented by the Italian Ministry, and consequently all these species fall under the definition of Primary species. Based on the data available, the assessment team determined that there are no main secondary species being impacted by the UoA – SG 60, SG 80 and SG 100 are met.		
2.2.2 – Secondary Management	**≥80**	**No**
Rationale or key points		
Apart Norway lobster, none of these species have a stock assessment, but they are all currently managed through the MPs implemented by the Italian Ministry, and consequently all these species fall under the definition of Primary species – SG 100 is met.		
2.2.3 – Secondary Information	**≥80**	**No**
Rationale or key points		
Apart Norway lobster, none of these species have a stock assessment, but they are all currently managed through the MPs implemented by the Italian Ministry, and consequently all these species fall under the definition of Primary species – SG 60, SG 80 and SG 100 are met by default.		
2.3.1 – ETP Outcome	**≥80**	**No**
Rationale or key points		
The detrimental direct effects of the UoA on the ETP species are not known with a high degree of confidence – SG 100 is not met.		
2.3.2 – ETP Management	**60 – 79**	**No**
Rationale or key points		
GFCM Recommendation 35/2011/4 on incidental bycatch of sea turtles in fisheries in the GFCM Competence Area states that ‘Upon receipt of advice from the SAC, the GFCM shall consider, if necessary, additional measures to mitigate sea turtle bycatch in those fisheries which have been considered most relevant’, but no additional GFCM Decisions on management of sea turtle by-catch have been published since 2011 – SG 80 is not met.		

2.3.3 – ETP Information	≥80	No
Rationale or key points		
Whilst quantitative literature information on UoA related impacts is available, data which would allow for an assessment of the magnitude of these impacts at population level with a high degree of certainty is lacking. Moreover, data on post-release impacts due to injuries is lacking – SG 100 is not met.		
2.4.1 – Habitats Outcome	**≥80**	**No**
Rationale or key points		
It is widely acknowledged that extensive areas of soft bottom habitats are present in the Adriatic Sea (Vatova (1949; Gamulin-Brinda, 1967; Scardi et al., 1999; Jenkins, 2008, Piras et al., 2016). These soft bottoms show a general pattern of changing from sand to muddy / detritic bottoms with increasing distance from the shore (Brambati et al., 1983). Bottom trawlers operate in contact with benthic habitats and/or species. The fishing net is configured to interact with the seabed during the actual fishing operation. However, damage to the Mediterranean-type gear is likely to occur in hard bottom rocky substrata. Since, fishing operations usually take place over soft and flat bottom habitats, the assessment team considers 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 – SG 60 and SG 80 are met. The team also consider that there is not an 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 – SG 100 is not met.		
2.4.2 – Habitats Management	**≥80**	**No**
Rationale or key points		
Benthic habitats in general, and sensitive habitats in particular are protected from the impact of fishing gears by EU legislation: - Directive (EC) 2008/56 on establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive). The over-arching goal of the Directive is to achieve 'Good Environmental Status' by 2020 across Europe's marine environment. Good environmental status shall be determined at the level of the marine regions or sub-regions, and on the basis of a series of qualitative descriptors. Descriptor 6 requires that: 'Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected'. - Council Directive (EEC) 92/43 of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (often referred to as the 'Habitats Directive'): the main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring EU Member States to take measures to maintain or restore natural habitats as well as the populations of wild species listed in the Directive's Annexes, and to maintain habitats and species at a favourable conservation status. - Council Regulation (EC) No 1967/2006 (as amended by EC 1343/2011) concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea. Besides the coastal areas which are protected from fishing, there are at present 25 Marine Protected Areas (MPAs) as well as numerous temporal closure areas designed to reduce the impact of fishing activities on the marine environment in general (Bastari et al. 2016). These protected / temporal closure areas as well as fishing gear restrictions are enforced by the Italian coastguard, who monitor the location and movement of fishing vessels through satellite-based Vessel Monitoring System, which is compulsory on fishing vessels of 12 metres' length overall or more (EC 1224/2009). Fishing vessels of the UoC are aware of the location of protected areas, which are highlighted on their on-board navigation system. Ongoing monitoring is required under the Marine Strategy Framework Directive, which requires that EU Member States establish environmental targets and monitoring programmes for ongoing assessment, enabling the state of the marine waters concerned to be evaluated on a regular basis. Since there is active management which reduces the impacts of fishing on benthic habitats, includes special provisions for the protection of critical habitats such as nursery areas as well as VMEs, as well as for continuous monitoring and enforcement, the assessment team considers that SG 100 is met.		

2.4.3 – Habitats Information	≥80	No

Rationale or key points

The Adriatic Sea supports a wide diversity of habitats, including coralligenous communities, maerl bottoms, seagrass meadows, rocky reef areas, and extensive areas of soft bottoms (Jenkins, 2008; MEDISEH, 2013; Bastari et al., 2016). Based on the available information the assessment team identified the following European Nature Information System (EUNIS) habitat categories to be relevant for the assessment:

Minor habitats
- A3: Infralittoral rock and other hard substrata
- A4: Circalittoral rock and other hard substrata

Main habitats:
- A5.1: Sublittoral coarse sediment
- A5.2: Sublittoral sand
- A5.3: Sublittoral mud
- A5.4: Sublittoral mixed sediments
- A5.5: Sublittoral macrophyte-dominated sediment => A5.51: Maerl beds
- A5.5: Sublittoral macrophyte-dominated sediment => A5.53: Sublittoral seagrass beds (Posidonia, Cymodocea, Zostera etc.)
- A5.5: Sublittoral macrophyte-dominated sediment => A5.54: Angiosperm communities in reduced salinity (vegetation in brackish water, Zostera in reduced salinity etc.)
- A5.6: Sublittoral biogenic reefs (mussel beds, Lophelia reefs, polychaete reefs)

A map of soft bottom habitats in the Adriatic Sea is available from Jenkins (2008); data on the benthic assemblages found in these soft bottom habitats was first compiled by Vatova (1949), and subsequently studied by a number of authors (e.g. Gamulin-Brinda, 1967; Scardi et al., 1999; Piras et al., 2016). A thorough review of existing spatial datasets showing the distribution of coralligenous, maërl and seagrass habitats across the entire Mediterranean, including the Adriatic Sea, was undertaken by the MEDISEH (Mediterranean Sensitive Habitats) project (MEDISEH, 2013), whose results are available online on the MAREA (Mediterranean hAlieutic Resources Evaluation and Advice) online map viewer (http://mareaproject.net/medviewer/), and have been published in scientific journals (e.g. Martin et al., 2014; Telesca et al., 2015). The assessment team thus considers that the nature, types and distribution of the main habitats are broadly understood – SG 60 is met.

Bottom trawlers operate in contact with benthic habitats and/or species. The fishing net is configured to interact with the seabed during the actual fishing operation. However, damage to the Mediterranean-type gear is likely to occur in hard bottom rocky substrata. Since, fishing operations usually take place over soft and flat bottom habitats, the assessment team considers 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 – SG 60 and SG 80 are met. The assessment team is of the opinion that the 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 – SG 80 is met.

Although the distribution of both main and minor habitats are known at a level of detail relevant to the scale and intensity of the UoA, the distribution of all habitats is not well known over their range since several of the available habitat maps are lacking in detail and / or are outdated – SG 100 is not met.

2.5.1 – Ecosystems Outcome	≥80	No

Rationale or key points

Coll et al. (2007) developed a trophic mass-balance model to characterise the food web of the Northern and Central Adriatic and described a total of forty functional groups, including target and non-target fish, invertebrate groups and detritus groups. The model highlighted that there is important coupling between benthic and pelagic production of detritus, benthic invertebrates and plankton. Organisms characterising mainly the low and medium trophic levels, but also the upper trophic levels were important in terms of keystoneness and total effects: phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), anchovy and dolphins were all ranked highly.

A subsequent review of functional groups acting as keystones in the Mediterranean Sea food webs confirmed this unique combination of suprabenthos, micro- and mesozooplankton, dolphins and small pelagic fish in structuring the Adriatic Sea ecosystem, and highlighted the importance of benthic organisms as key structuring species with a

relatively high proportion of biomass (Coll and Libralato, 2012). These functional groups were thus interpreted as being the features giving the ecosystem its characteristic nature and dynamics. Species which have been considered separately in this assessment (the P1 target species anchovy and sardine; ETP species striped and bottlenose dolphins) were not considered again.

Since purse seiners operate in the water column they are generally not in contact with benthic habitats and/or species and as such the assessment team considers that the UoA is highly unlikely to disrupt the functional groups 'subrabenthos' and 'benthic invertebrates' as defined by Coll et al. (2007) to a point where there would be serious or irreversible harm. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted – SG 60 and SG 80 are met.

The assessment team considers that there is also evidence that the UoA is highly unlikely to disrupt suprabenthos and benthic invertebrates – SG 100 is thus met for these scoring elements.

The modelling results obtained by Coll et al. (2007) highlight important coupling between the demersal and pelagic compartments due to links between detritus, benthic invertebrates and zooplankton. Such tight coupling may be due to the relatively shallow waters, as well as the general water exchange patterns which prevail in the Adriatic. A high proportion of zooplankton production appears to be directed to detritus, thus maintaining high levels of benthic production, which in turn generate detritus which maintains zooplankton populations (Coll et al., 2007). The important link between benthic invertebrates and detritus components of Adriatic Sea food webs may be affected directly or indirectly by fishing activities. Fishing may be enhancing the re-suspension of organic matter, and discards may be converted to benthic detritus (Coll et al., 2007; Libralato et al., 2010). Although the re-suspension of organic matter is likely to be limited since purse seines only briefly touch the bottom at the beginning or end of fishing operations, if at all, and overall discard volumes by the UoA are low (see section on secondary species for detailed data on discard volumes), the assessment team nevertheless considers that there is 'evidence' that the UoA is highly unlikely to disrupt plankton communities – SG 100 is thus met.

The potential direct and indirect impacts of the UoA on micro- and mesozooplankton communities through the re-suspension of organic matter and / or the conversion of discards to benthic detritus will not affect primary productivity by phytoplankton communities, which are mainly influenced by fluctuations in salinity, nutrients and temperature (Giani et al., 2012). For this scoring element SG 100 is thus met.

2.5.2 – Ecosystems Management	**≥80**	**No**

Rationale or key points

The management strategy in place is comprehensive, based on a wide range of applicable management measures, takes into account all the potential impacts of the UoA on key elements of the ecosystem (see scoring issue a), and once implemented successfully can be expected to work.

Bottom trawlers operate in contact with benthic habitats and/or species. The fishing net is configured to interact with the seabed during the actual fishing operation. However, damage to the Mediterranean-type gear is likely to occur in hard bottom rocky substrata. Since, fishing operations usually take place over soft and flat bottom habitats, the assessment team considers 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 – SG 60 and SG 80 are met. Similarly the UoA is unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted.
In light of the comprehensive strategy in place and the low impacts of the UoA on key elements of the ecosystem the assessment team considers that there is some objective basis for confidence that the measures/partial strategy will work – SG 60 and SG 80 are met.
Testing to support high confidence that the strategy will work has yet to be carried out, so SG 100 is not met.

2.5.3 – Ecosystems Information	**≥80**	**No**

Rationale or key points

Bottom trawlers operate in contact with benthic habitats and/or species. The fishing net is configured to interact with the seabed during the actual fishing operation. However, damage to the Mediterranean-type gear is likely to occur in hard bottom rocky substrata. Since, fishing operations usually take place over soft and flat bottom habitats, the assessment team considers 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 (Lucchetti and Sala, 2012; STECF 12-12). The fishing net is configured to interact with the seabed during the actual fishing operation. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted. The main impacts of the UoA on key ecosystem elements can thus be inferred – SG 60 is met. The assessment team considers that some of the main impacts of the UoA on key ecosystem elements have been investigated in detail – SG 80 is met. Whilst the main interactions between the UoA and ecosystem elements can to an extent be inferred from existing information, these interactions have not been investigated in detail – SG 100 is not met for micro- / mesozooplankton, benthic invertebrates and suprabenthos.		
3.1.1 – Legal and customary framework	**≥80**	**No**
Rationale or key points		
The Italian management system is required to observe, but does not formally commit to, the rights of those dependent on fisheries. The team shall interpret “formally commit” in scoring issue (c) at SG100 to mean that the UoA involved in the fishery can demonstrate a mandated legal basis where rights are fully codified within the fishery management system and/or its policies and procedures for managing fisheries under a legal framework. Such evidence has not been provided and therefore SG100 is not met.		
3.1.2 – Consultation, roles and responsibilities	**≥80**	**No**
Rationale or key points		
MEDAC is the main regular consultation process that enables local knowledge from the sector to be considered in development of the management system. However, it is not always explained by the EC how that information is used or not used. Industry stakeholders suggest this is also the case at a national level with Ministry consultation exercises, which are ad hoc exercises associated with the development of new policies prior to the drafting of regulation. However, this is not enough to consider that the management system considers always the information and explains how it is used or not use. Therefore, SG 100 is not met.		
3.1.3 – Long term objectives	**≥80**	**No**
Rationale or key points		
CFP and GFCM have clear long-term objectives that explicitly require the precautionary approach to be followed. The CFP contains clear long-term objectives that guide decision-making and are consistent with MSC principles. These are presented in section 7.6.1 of the report. The CFP is explicit in requiring the precautionary approach to guide all management policy, including the national management of vessels in the UoA. GFCM General Agreement Article 5: In giving effect to the objective of this Agreement, the Commission shall: c) apply the precautionary approach in accordance with the 1995 Agreement and the Code of Conduct for Responsible Fisheries. Therefore SG 100 is met.		
3.2.1 – Fishery specific objectives	**60 – 79**	**No**
Rationale or key points		
Both the CFP and the Italian Management plans for demersal fishery in GSA 17-18 has long term objectives. However these are only implicit in the Italian management plan and explicit objectives solely focus on the target species and such well-defined and measurable objectives do not extend to MSC P2 aspects. SG80 is met for P1 aspects, but not for P2 and SG80 is therefore only partially met.		
3.2.2 – Decision making processes	**60 – 79**	**No**

Rationale or key points
It is evident that to date GFCM amendments have occurred annually in order to respond to serious issues in the fishery (SG60 is met), but there is no evidence that all issues are taken into account. Therefore SG80 is not met.

3.2.3 – Compliance and enforcement	**≥80**	**Yes**

Rationale or key points
MCS in the Adriatic is a combination of technical measures such as the requirement for Vessel Monitoring Systems (VMS) on vessels over 12m (all UoA vessels) and e-logbooks. This is supported by at sea inspection, aerial surveillance and port inspection. There is also corroboration of logbook data with sales notes. Control authorities have a reasonable expectation and confidence that MCS measures are effective. The resources available to and used by those authorities have demonstrated an ability to enforce the regulations applying to the fishery. The Italian Coastguard manages monitoring control and surveillance of Italian vessels along with joint operations with the Croatian control authority. This is supported by the European Fisheries Control Authority (EFCA) under its Mediterranean Joint Deployment Plan (JDP). The JDP was adopted in May 2014 and has the active participation of Croatia, Cyprus, France, Greece, Italy, Malta, Portugal, Slovenia and Spain. Joint control and inspection activities conducted under the JDP are exhaustive and based on a risk assessment approach. They cover fishing and fishing-related activities including farming, weighing, processing, marketing, transport and storage of fisheries products and sport and recreational fisheries. The JDP is implemented based on the decisions of the Mediterranean steering group which supervises its overall strategy and orientation. Day-to-day operational activities are implemented through a technical joint deployment group and coordination centres in the Member States concerned (EFCA, 2014). Relevant statistics on sanctions and inspections are not available for the UoA but only for the whole Italian fleets on "*Ecomafie*" report 2018 (https://www.legambiente.it/rapporto-ecomafia).

3.2.4 – Management performance evaluation	**60-79**	**No**

Rationale or key points
The mechanism in place to evaluate some parts of the fishery-specific management system are the scientific working groups (both in the framework of SAC-GFCM and STECF) evaluation the status of the stocks. Therefore SG 60 is met. However, key parts of the management system as the effort reduction foreseen by the Italian Management plan for demersal fishery in GSA 17-18 are not evaluated therefore SG 80 is not met.

7.4 Principle 1

7.4.1 Principle 1 background

Horned octopus, *Eledone cirrhosa*, is common in the Mediterranean and in the North-eastern Atlantic, from the Celtic Sea to Moroccan waters. As regards Italian waters, *E. cirrhosa* occurs in all the seven GSAs. It is an eurybathic species, typical of soft bottoms. In the Mediterranean, it can be found from 50 to 700 m depth, even though is more frequently found between 50 and 300 m. *E. cirrhosa* is, among cephalopods, one of the most important commercial species for trawling.
It is a predatory and carnivorous species. Both in the Mediterranean and in the Atlantic, its diet is composed of decapod crustaceans, but also molluscs and cephalopod eggs. Marine mammals and fishes represent its main predators.
E. cirrhosa can reach a maximum size of about 16 cm ML. In the Mediterranean, sizes at sexual maturity range between 8.0 and 12.0 cm ML for females, and between 5.5 and 8.9 cm ML for males.
Fertility changes greatly with relation to geographical areas and to ovary maturation stage. The mean number of eggs at all stages of maturity is about 2000-5000.
In the Mediterranean, sexual maturity and reproduction occur in the first year of life. In Italian seas, recruitment to trawling occurs in spring and summer; recruits are distributed between depths of 80 and 200 m, especially in areas with a large continental shelf.
The demographic structure shows that medium-large size specimens are caught mainly during spring/summer, decreasing in number in the following season. Catch of juveniles (specimens smaller than 50 mm ML), takes place mostly in summer, in agreement with the recruitment peak. According to size classes, catches are divided into two commercial categories. Small size specimens have a high economic value, and their exploitation is particularly active given the high market demand for this commercial category known as “moscardini”.
Currently, no stock assessment conducted in compliance with a traditional approach, is available for this species or other cephalopods in the Mediterranean. *E. cirrhosa* is not subject to any restriction on minimum conservation reference size of capture or landing.

7.4.2 Catch profiles

The report may include any relevant catch profiles showing Unit of Assessment (UoA) catch over time.
The biomass index of the horned octopus in GSA18 obtained from the MEDITS survey is showing a fluctuating pattern. From 2008 onwards, the biomass shows a decreasing trend.

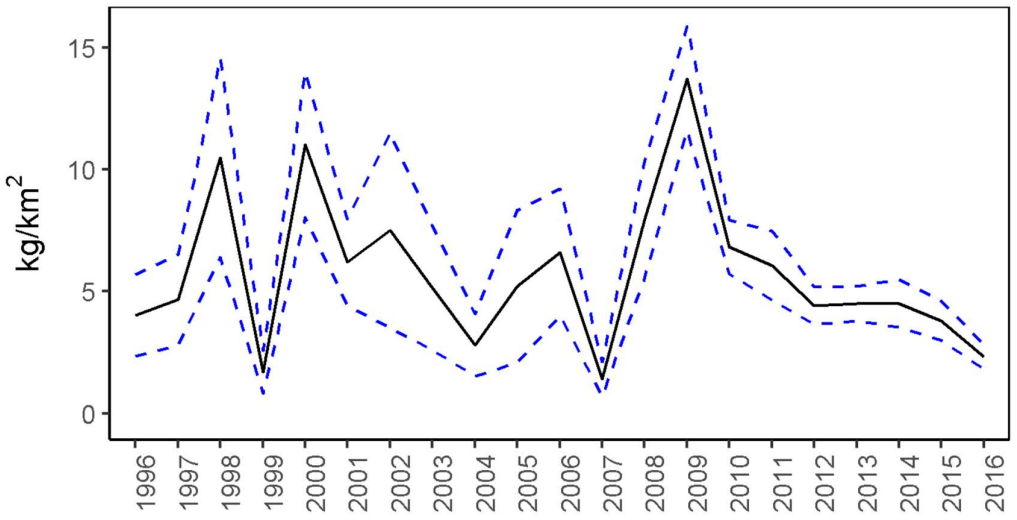

Figure 7.4.2.1. Biomass index from the MEDITS survey in GSA 18 (period 1996-2016, from MIPAAFT, 2018).

7.4.3 Total Allowable Catch (TAC) and catch data

No Total Allowable Catch (TAC) are set for this fishery; the most recent catch data are shown in Table 7.4.3.1. Those data refer to the landings of anchovy in the whole Adriatic (GSAs 17 and 18).

Table 7.4.3.1 – Total Allowable Catch (TAC) and catch data				
TAC	Year	**2016**	Amount	**-**
UoA share of TAC	Year	**2016**	Amount	**-**
UoA share of total TAC	Year	**2016**	Amount	**-**
Total green weight catch by UoC	Year (most recent)	**2016**	Amount	919 t
Total green weight catch by UoC	Year (second most recent)	**2015**	Amount	489 t

7.4.4 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?	**NA**	**NA**	**NA**

Rationale

The Risk Based Framework (RBF) has been used to score this PI, because no stock status relative to reference points is available for target species, derived either from analytical stock assessment or using empirical approaches (Sartor et al., 2017).
The management plan of demersal resources in GSAs 17-18 (MIPAAFT, 2018) includes as associate species the horned octopus. This management plan considers the biomass index trend coming from the scientific trawl surveys (MEDITS).

The results of the RBF assessment are:
CA Score: 100
PSA Score: 84
The MSC CR (see CRv2.0, Table PF7) indicates that for scores at this level, the overall score awarded for PI shall be more than 80, as near to the midway point between CA and PSA scores as possible.
The total score is therefore 92.
See RBF section in 8.3 for more details.

							Productivity Scores [1-3]								Susceptibility Scores [1-3]						Cumulative only							
Scoring element	First of each scoring element	Family name	Scientific name	Common name	Species type	Fishery descriptor	Average age at maturity	Average max age	Fecundity	Average max size	Average size at Maturity	Reproductive strategy	Trophic level	Density Dependance	Total Productivity (average)	Availability	Encounterability	Selectivity	Post-capture mortality	Total (multiplicative)	PSA Score	Catch (tons)	Weighting	Weighted Total	Weighted PSA Score	MSC PSA-derived score	Risk Category Name	MSC scoring guidepost	Consequence Score (CA)	Final MSC score (per scoring element)
1	First	Octopodidae	Eledone cirrhosa	horned octopus	Invertebrate	Trawling	1	1	2			2	2	2	1.67	3	3	2	2	1.88	2.51	920	1.00	2.51	2.51	84	Low	≥80	100	92

b	Stock status in relation to achievement of Maximum Sustainable Yield (MSY)			
	Guide post		The stock is at or fluctuating around a level consistent with MSY.	There is **a high degree of certainty** that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		**NA**	**NA**

Rationale

The Risk Based Framework has been used to score this PI.

References

MSC Fisheries Certification Requirements and Guidance Version 2.0, 1st October, 2014.
Sartor P., Mannini A., Carlucci R., Massaro E., Queirolo S., Sabatini A., Scarcella G., Simoni R. (2017). Syntheis of the knowledge on biology, ecology and fishery of the halieutic resources of the Italian seas. Biol. Mar. Mediterr. 24: 607 pp.

BELCARI P., CUCCU D. (2015) - Eledone cirrhosa. In: Sartor P., Mannini A., Carlucci R., Massaro E., Queirolo S., Sabatini A., Scarcella G., Simoni R. (eds), Sintesi delle conoscenze di biologia, ecologia e pesca delle specie ittiche dei mari italiani. Biol. Mar. Mediterr., 22: 72-80.

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)			
Reference point used in scoring stock relative to MSY (SIb)			

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**
Data-deficient? (Risk-Based Framework needed)	**Yes**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

PI 1.1.2 – Stock rebuilding

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue		SG 60	SG 80	SG 100
a	Rebuilding timeframes			
	Guide post	A rebuilding timeframe is specified for the stock that is the **shorter of 20 years or 2 times its generation time**. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed **one generation time** for the stock.
	Met?	**NA**		**NA**
Rationale				
The stock is not depleted.				
b	Rebuilding evaluation			
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is **evidence** that the rebuilding strategies are rebuilding stocks, **or it is likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**.	There is **strong evidence** that the rebuilding strategies are rebuilding stocks, **or it is highly likely** based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the **specified timeframe**.
	Met?	**NA**	**NA**	**NA**
Rationale				
The stock is not depleted.				
References				
List any references here, including hyperlinks to publicly-available documents.				

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**<60 / 60-79 / >80**
Information gap indicator	**More information sought / Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	**-**
Condition number (if relevant)	

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**	**No**
Rationale				
The management plan of demersal resources in GSAs 17-18 (MIPAAFT, 2018) includes as associate species the horned octopus. This management plan considers the biomass index trend coming from the scientific trawl surveys (MEDITS). The harvest strategy in place (16% fishing activity reduction by 2020) for achieving the stock management objectives are likely to affect also the stock of horned octopus in GSA 18.				
b	Harvest strategy evaluation			
	Guide post	The harvest strategy is **likely** to work based on prior experience or plausible argument.	The harvest strategy may not have been fully **tested** but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been **fully evaluated** and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	**Yes**	**No**	**No**
Rationale				
The management plan of demersal resources in GSAs 17-18 (MIPAAFT, 2018) includes as associate species the horned octopus. This management plan considers the biomass index trend coming from the scientific trawl surveys (MEDITS). However, the Management Plan has been recently implemented; thus, no test of its effectiveness can be conducted so far. Therefore, this scoring guidance is met at SG60.				
c	Harvest strategy monitoring			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	**Yes**		
Rationale				
Both GFCM and STECF carried out a revision of the target stocks in the southern Adriatic. Thus is possible to conclude that a monitoring is in place to determine whether the harvest strategy is working also on horned octopus, as associate species.				
d	Harvest strategy review			

	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			**No**
Rationale				
The harvest strategy has not been reviewed so far. The Italian national programme on fisheries data collection is revised every three years.				
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				
NA				
f	Review of alternative measures			
	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	**Yes**	**Yes**	**No**
Rationale				
According to Art. 15 of the new CFP (No 1380/2013) a progressive elimination of discards in all European fisheries through the introduction of a landing obligations is foreseen. The Article 15(6) of Regulation (EU) No 1380/2013 empowers the Commission to adopt discard plans by means of a delegated act for a period of no more than three years on the basis of joint recommendations developed by Member States in consultation with the relevant Advisory Councils. In accordance with the joint recommendation provided by the MEDAC, the discard plan should cover all catches of species which are subject to minimum sizes as defined in Annex III to Regulation (EC) No 1967/. Thus it is possible to conclude that a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock is in place and reviewed every 3 years. Therefore this scoring guidance is met at SG80 but not at SG100.				
References				
EC (2013) EC Regulation 1380/2013 on the Common Fisheries Policy				

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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*	*No*	*No*
Rationale				
The management plan of demersal resources in GSAs 17-18 has been recently implemented. The management plan foresees a 16% fishing activity reduction by 2020. There is still no evidence that the measures in place will be able to keep the stock fluctuating around the target level. This meets SG60.				
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?		**No**	**No**
Rationale				
The management plan of demersal resources in GSAs 17-18 is not taking into account measures of uncertainty.				
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*	*No*	*No*
Rationale				
The Italian management plan of demersal resources in GSAs 17-18 is providing tools that are appropriate to implement HCRs. However, there is still no evidence the the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. Therefore this scoring guidance is met at SG60.				
References				
MIPAAFT 2018. Piano di Gestione Nazionale relativo alle flotte di pesca per la cattura delle risorse demersali nell'ambito delle GSA 17 (Mar Adriatico Centro-settentrionale) e GSA 18 (Mar Adriatico Meridionale). 106 pp.				

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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 range of information is available. Besides data such as size distribution of catches, survey and LPUE data, additional information includes biological parameters, and spatio-temporal distribution of juveniles and adults. This meets the requirements at 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				
The data required by the management plan are monitored with high frequency and at a high level of accuracy and coverage. The main information are total catches, size composition of the catches, abundance from the surveys (MEDITS). However, a good understanding of the inherent uncertainties is not available. Therefore SG80 is met.				
c	Comprehensiveness of information			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**Yes**	
Rationale				
Taking into consideration FAO AdriaMed regional project activities facilitating the cooperation among Adriatic countries is possible to conclude that information on all removal from all fleets and nations is well recorded.				
References				

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

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**
Data-deficient? (Risk-Based Framework needed)	**Yes**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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?		**NA**	**NA**
Rationale				
If the RBF is used to score PI 1.1.1, this PI is not scored and is awarded a default score of 80 (see MSC CRv2, Annex CC, Table CC1).				
b	Assessment approach			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	**NA**	**NA**	
Rationale				
If the RBF is used to score PI 1.1.1, this PI is not scored and is awarded a default score of 80 (see MSC CRv2, Annex CC, Table CC1).				
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?	**NA**	**NA**	**NA**
Rationale				
If the RBF is used to score PI 1.1.1, this PI is not scored and is awarded a default score of 80 (see MSC CRv2, Annex CC, Table CC1).				
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?			**NA**
Rationale				
If the RBF is used to score PI 1.1.1, this PI is not scored and is awarded a default score of 80 (see MSC CRv2, Annex CC, Table CC1).				
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?		**NA**	**NA**

Rationale
If the RBF is used to score PI 1.1.1, this PI is not scored and is awarded a default score of 80 (see MSC CRv2, Annex CC, Table CC1).

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

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

7.5 Principle 2

7.5.1 Principle 2 background

MSC puts **bycatch species** into two categories for the purposes of evaluation under Principle 2: 'primary' and 'secondary', and evaluates each category under a different set of PIs. CR v2.0 defines **primary bycatch species** in this context as those: *where management tools and measures are in place that aim to regulate fishing in relation to some biologically based limit and/or target reference levels;* ***secondary species*** *are all the others*.

MSC also makes a distinction between 'main' bycatch species and others. **Main bycatch species** are defined as those which exceed 5 % of the total catch (including discards), or 2 % if the species is considered to be vulnerable to fishing pressure (e.g. if the stock is known to be depleted or if the life history makes it vulnerable); assessment teams can also use their discretion to designate species as main if they feel it is necessary.

The electronic logbooks on otter trawl vessels allow for recording of catch other than main species (in MSC terms).The fishery is a mixed fishery targeting European hake, red mullet, spottail mantis shrimp, and deep-water rose shrimp, but with other demersal species taken as bycatch (Atlantic horse mackerel, common cuttlefish, musky- and horned octopus, Norway lobster, squids, and prawns).

In 2015-16, hake represented ~16 % of the catch, while horned octopus landings have fluctuated in the range of 4-5 % of the total (Table 2.1). Cumulative landings of other species of the demersal reached ~19 % of the total. The dataset presented in Table 2.1 was provided by the BLUFISH PROJECT (Stage 1.b) and it presents a summary of the main and minor species considered within Principle 2. In MSC terms, European hake, red mullet, spottail mantis shrimp, and common cuttlefish would be considered as main primary species for this fishery. While the minor species Norway lobster is another primary species. For the other species, since there is no direct management via reference points, they would have been considered secondary species, however they are all currently managed through the MPs implemented by the Italian Ministry, and consequently all these species fall under the definition of Primary species.

Italian vessels operating trawl gear in GSA 18 are understood to have relatively high discard levels (Tsagarakis et al., 2014), particularly for shallow water fisheries including hake, red mullet, and deep-water rose shrimp where the discard ratio was found to be 51 % (i.e. over half of the catch is returned to the sea). However, according to other views the discard fraction may be affected by several factors, including catch quantity and composition as well as market prices (Keller, 2005)

The MSC Fishery Certification Requirements (FCR) v2 defines primary species within Principle 2 as those that have management measures and tools in place intended to achieve stock management objectives reflected in either limit or target reference points (FCRv2 SA3.1.3). If management limit or reference points are not in place then the species is classified as a secondary species (regardless of whether it is retained or discarded).

7.5.1.1. Primary species

Outcome

Scientific advice on stock status for a number of species caught as by-catch by demersal trawlers operating in the Southern Adriatic Sea is available from two sources:

(i) European Commission Scientific, Technical and Economic Committee for Fisheries (STECF);
(ii) General Fisheries Commission for the Mediterranean (GFCM) Scientific Advisory Council (SAC).

Expert working groups convened by STECF and GFCM in 2018 carried out analytical stock assessments for the following stocks in the Adriatic Sea: hake, red mullet, Norwaty lobster, deep water rose shrimp, common cuttlefish, sole and spottail mantis shrimp (STECF, 2018). Scientific advices on stock status are available for these species, and these advices have been operationalized by the relevant management authorities.

A recent review of the state of Mediterranean fisheries describes ongoing efforts by the GFCM to apply multiannual management plans aimed at managing fish stocks in the Mediterranean Sea (FAO, 2018). The only management plan currently implemented specifically for Adriatic fisheries concerns the management of sardine and anchovy stocks. The Italian Minsitry also implemented Management plans for demersal fisheries in GSA17 and GSA18 (see for details https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/6896), therefore all the demersal species can be considered covered by these MPs, and in MSC terms counted as Primary.

Management

There are a number of management measures in place to regulate fisheries in the Adriatic Sea, the demersal trawl fisheries targeting European hake, red mullet, spottail mantis shrimp, deep-water rose shrimp, and Norway lobster are managed under the auspicies of both GFCM and EU. In particular, to date management has been primarily based on technical measures, many of which have been implemented by Italy, Slovenia and Croatia in order to conform to the provisions outlined in the Mediterranean Fisheries Regulation EC 1967/2006 (as amended by EC 1343/2011), as well as the applicable GFCM Recommendations also by Montenegro and Albania. Such measures include for instance effort limitation, minimum conservation reference sizes for a number of species, time/area closures, technical conditions for maximum fishing gear dimensions and characteristics, minimum mesh sizes, requirements for fishing licenses etc.

Information

The UoA is subject to both EU and GFCM quantitative fisheries data collection requirements. In the EU Regulation EC 199/2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice

regarding the Common Fisheries Policy sets out the fisheries data collection requirements for EU Member States. The Regulation outlines requirements related to the:

- Collection, management and use of data in the framework of multi-national programmes;
- Data management process;
- Use of data collected in the framework of the Common Fisheries Policy;
- Use of data to support scientific advice.

Commission Regulation (EC) No 665/2008 establishes the detailed rules for the application of Council Regulation (EC) No 199/2008, concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy. The subsequent Commission Decision 2010/93/EU sets out the data collection requirements for 2011-13, and Commission implementing Decision C(2013)5243 extended the application of this decision to 2014-2016.

Under the EU fisheries Data Collection Framework (DCF), Member States are required to compile a wide range of biological and economic data, including:

- Biological data, including stock-related data;
- Data on fleet size and fishing activity analysed by fishing season, fleet segment, areas fished and by stock;
- Economic data relating to the fishing, aquaculture and fish processing industries;
- Fisheries independent research surveys at sea;
- Data to evaluate the effects of the fisheries sector on the marine ecosystem.

This data is collected on the basis of National Programmes in which Member States indicate which data is collected, how data is collected, and what resources are allocated to the data collection process. Member States are required to report annually on the implementation of their National Programmes, and these annual reports are evaluated by the European Commission's Scientific, Technical and Economic Committee for Fisheries (STECF).

In addition to the requirements of the EU DCF outlined above, the UoA is also subject to the requirements of the GFCM Data Collection Reference Framework (DCRF), which is GFCM's framework for the collection and submission of the fisheries-related data (Table 2.2). A number of GFCM Recommendations request data from GFCM contracting parties, which is then used by the relevant GFCM subsidiary bodies to formulate scientific advice. The DCFR is based on seven different tasks:

- T1 – Global figures of national fisheries
- T2 – Catch (landing data, catch data per species)
- T3 – Incidental catch of vulnerable species
- T4 – Fleet
- T5 – Effort
- T6 – Socioeconomics
- T7 – Biological information (stock assessment, length data, other biological data, dolphin fish, red coral, European eel, ecosystem indicators)

7.5.1.2. Secondary Species

Official Italian catch data for demersal trawlers operating in the Adriatic Sea GSA 18 made available by the Italian ministry for the purpose of this assessment shows that numerous other species are landed besides Main species, albeit some in very small volumes (Table 2.1). Apart Norway lobster, none of these species have a stock asseement, but they are all currently managed through the MPs implemented by the Italian Ministry, and consequently all these species fall under the definition of Primary species.

Catches of the individual species by the UoA would thus not have comprised 5 % or more by weight of the total catch of all species by the UoA, so none of these species are considered to be 'main' species for the purpose of the Principle 2 assessment. STECF (2016b) note that discarding in this fishery is 'considered negligible'. The Landing Obligation is now in force for this fishery, so in principle there should be no discarding.

Table 2.1. List of species detected for the UoA using demersal otter trawls (OT) for Horned octopus, *Eledone cirrhosa* (EOI), in GSA 18 and scoring elements. The species underlined is the species detected for the selected UoA. Mean landing refers to landed weights in 2015-2016.

Italian name	English name	Mean landing [tons]	Percentage (%)	Component	Scoring elements	Designation	Data-deficient
Nasello	European hake	1642.702	15.696	Primary	*Merluccius merluccius*	Main	No
Triglie di fango	Red mullet	1484.833	14.188	Primary	*Mullus barbatus*	Main	No
Pannocchie	Spottail mantis shrimp	935.117	8.935	Primary	*Squilla mantis*	Main	No
Gamberi bianchi o rosa	Deep-water rose shrimp	823.827	7.872	Primary	*Parapenaeus longirostris*	Main	-
Sugarello o suro	Atlantic horse mackerel	546.266	5.220	Primary	*Trachurus trachurus*	Main	Yes
Seppia mediterranea o comune	Common cuttlefish	529.397	5.058	Primary	*Sepia officinalis*	Main	No
Moscardino muschiato	Musky octopus	521.335	4.981	Primary	*Eledone moschata*	Minor	Yes
Moscardino bianco	Horned octopus	478.280	4.570	P1	*Eledone cirrhosa*	-	Yes
Scampi	Norway lobster	418.914	4.003	Primary	*Nephrops norvegicus*	Minor	No
Totano comune	Broadtail shortfin squid	408.820	3.906	Primary	*Illex coindetii*	Minor	Yes
Calamaro mediterraneo	European squid	359.984	3.440	Primary	*Loligo vulgaris*	Minor	Yes
Mazzancolle	Caramote prawn	331.300	3.166	Primary	*Penaeus kerathurus*	Minor	No
Other (63 species)		1984.733	18.965	*Unwanted*	-	*Negligible (percentage <2%)*	

Source: estimates from MIPAAFT/National Fisheries Data Collection Programme and reported in the BLUFISH PROJECT Stage 1.b (Deeper mapping/Annex IV – GSA 18)

Table 2.2. GFCM-DCRF tasks: data and purposes. Source: GFCM (2016).

DCRF TASKS (T)			DATA	RELATED RECOMMENDATIONS
ID	TASK	SUBTASK		
T. I	GLOBAL FIGURES OF NATIONAL FISHERIES	-	Annual data on total landing, number of vessels, total capacity and total engine power by country.	–
T. II	CATCH	II.1) Landing data	Annual data on total national captures (i.e. landing) by country, area and fleet segment.	–Rec. GFCM/33/2009/3
		II.2) Catch data per species	Annual data on total catch (i.e. landing and discards) for the main commercial species reported by country, area and fleet segment.	–Rec. GFCM/33/2009/3
T. III	INCIDENTAL CATCH OF VULNERABLE SPECIES	-	Annual data (i.e. number of individuals) on incidental catch of vulnerable species (i.e. seabirds, turtles, marine mammals and shark species) by area, country and fishing gear.	–Rec. GFCM/35/2011/5 –Rec. GFCM/36/2012/3 –Rec. GFCM/35/2011/4 –Rec. GFCM/36/2012/2
T. IV	FLEET	-	Register of fishing vessels with identification features (i.e. vessel name, registration number, port, fishing gear, geographical subarea, etc.) and information on technical features (i.e. gross tonnage, kilowatt, overall length etc.) of fleets operating in the GFCM area.	–Res. GFCM/35/2011/1 –Rec. GFCM/33/2009/5 –Rec. GFCM/33/2009/6 –Rec. GFCM/33/2009/2 –Rec. GFCM33/2009/1 –Rec. GFCM/33/2009/3 –Rec. GFCM/30/2006/3
T. V	EFFORT	-	Fishing effort data calculated as a combination of capacity and activity by country, area, fleet segment and fishing gear. Information on catch per unit effort (CPUE) for the main commercial species.	–Rec. GFCM/33/2009/3
T. VI	SOCIO-ECONOMICS	-	Data related to economic and social variables of fishery by country, area and fleet segment.	–Rec. GFCM/33/2009/3

DCRF TASKS (T)			DATA	RELATED RECOMMENDATIONS
ID	TASK	SUBTASK		
T. VII	BIOLOGICAL INFORMATION	VII.1) Stock assessment	Annual data on stock identification and stock biological information on priority species: growth parameters, length/weight relationships, recruitment, biomass. Information on environmental factors that may affect population dynamics.	– Rec. GFCM/33/2009/3
		VII.2) Length data	Data related to the observed size distribution, in the landing, of identified priority species per area and fleet segment.	– Rec. GFCM/33/2009/3
		VII.3) Other biological data	Information on some biological variables (i.e. sex and maturity) of identified priority species per area and fleet segment.	– Rec. GFCM/33/2009/3
		VII.4) Dolphin fish	Annual data on total landing, fishing period and the area of fishing operations regarding dolphin fish *Coryphaena hyppurus*.	– Rec. GFCM/30/2006/2
		VII.5) Red coral	Information on red coral harvesting, weight, effort and average diameter	– Rec. GFCM/35/2011/2 – Rec. GFCM/36/2012/1
		VII.6) European eel	Annual data on total catch, gear types and fishing days, by country and for the different life stages.	-
		VII.7) Ecosystem indicators	The selected common indicators will refer to spawning stock biomass, total landings, fishing mortality, effort and incidental catch of vulnerable and non-target species	-

7.5.1.3. ETP species

Neither the Italian Ministry nor scientists reported any significant interactions between the demersal trawl fishery and any ETP species. It is reported that cetaceans (bottlenose dolphin), turtles (loggerhead) and birds (various) are present in the area, but do not interact particularly with the fishery or the fishing vessels. No seals are present in the area.

The monitoring of the by catch of Endangered, Protected, Threatened (EPT) species in fishing gears other than those already monitored under the Reg. EU 812/2004 has been performed in Italy for the first time in 2018. The study was implemented as *"Pilot Study 2: Level of fishing and impact of fisheries on biological resources and marine ecosystem - incidental by-catch of all birds, mammals and reptiles and fish protected under Union legislation and international agreements"*. It was included into the Italian National Workplan 2017-2019 as part of the activities foreseen under the EUMAP, and following the recommendation of the Regional Coordiantion Group of Mediterranean and Black Sea (RCG Med&BS) held in Larnaka (Cyprus) in September 2017.

The selection of fishing gears to be monitored was based on the outcomes of the EU Project *"Strengthening regional cooperation in the area of fisheries data collection in the Mediterranean and Black Sea"* (MARE/2014/19 - SI2.705484: Spedicato, 2016) and the Regional Coordination Group Med&BS 2017. In the light of the available information, it was decided to perform the monitoring of the by catch of otter bottom trawl fisheries in 2018. All the Italian GSAs (GSAs 9, 10, 11, 16, 17, 18 e 19) are included in the monitoring programme. The methodology used for the monitoring of the incidental by catch of EPT species is the one proposed by the EU Project "Strengthening regional cooperation in the area of fisheries data collection in the Mediterranean and Black Sea" (MARE/2014/19 - SI2.705484: Spedicato, 2016). Independent observations made by trained observers are considered as the most reliable and useful means of collecting data on the by catch of vulnerable species. However, these programmes can be quite expensive. Therefore, it was decided to couple a fleet observer programme with a self sampling monitoring scheme. Integration of self-reporting tools with observer programmes allows also for cross-checking and review of self-reported data.

By catch occurrence and absence data provided through self sampling are very useful in flagging up by catch hotspots, which could be missed by a limited number of on board observations. This is particularly true because bycatch rates may be very low and so will be missed by low numbers of on board observations. Self-reporting fishers were trained by observers so that species identification could be validated by trained observers and specialists.

It is reported that the populations of bottlenose dolphins are among the best-studied in the Mediterranean (see Cetacean Alliance information). In relation to bottlenose dolphins, there are concerns over the status of some populations according to the Cetacean Alliance, but this fishery is not mentioned as an issue; in fact, they note an increased pleasure boating and development as the main concern.

The main interaction of the fishery with species other than demersal species is with Loggerhead sea turtle (*Caretta caretta*) and Spiny dogfish (*Squalus acanthias*) with a potential bycatch of around 10 % and 5 %, respectively. Scientific data indicates that the populations of all five ETP species encountered in the Adriatic Sea are part of distinct Mediterranean populations (Wallace et al., 2010; Faria et al., 2012; IUCN, 2012), with both green and loggerhead turtles found in the Adriatic closely related to turtle populations nesting in the Eastern Mediterranean (Wallace et al., 2010).

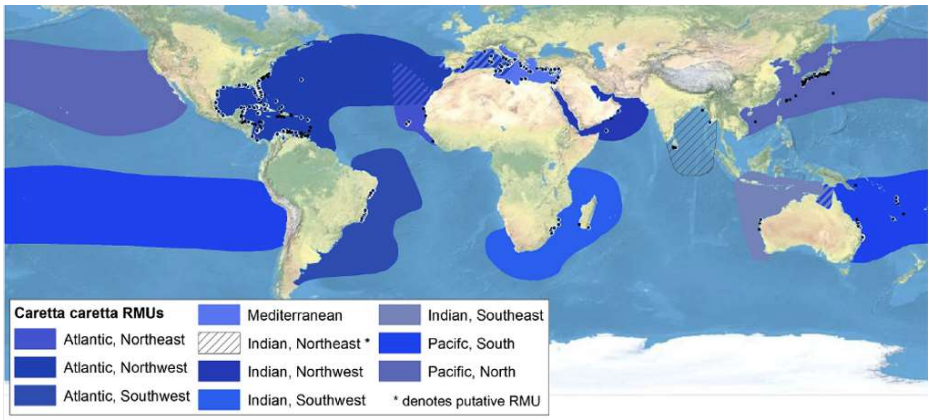

Figure 2.1 Regional management units for loggerhead turtles; nesting sites are represented by black squares. Source: Wallace et al. (2010).

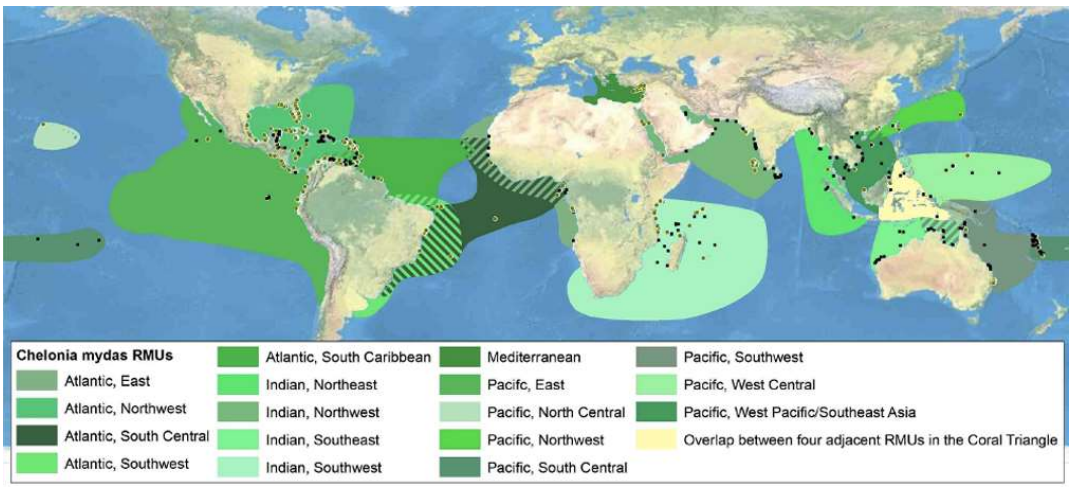

Figure 2.2 Regional management units for green turtles; nesting sites are represented by black squares. Source: Wallace et al. (2010).

Figure 2.3 Distribution of the Mediterranean bottlenose dolphin population in the Mediterranean Sea (hatched area on map). Source: IUCN (2012).

Figure 2.4 Distribution of the Mediterranean striped dolphin population in the Mediterranean Sea (hatched area on map). Source: IUCN (2012).

7.5.1.4. Habitats

The basin of the Southern Adriatic is connected to the Northern Ionian Sea through the Otranto Channel, which represents the area in which an annual flow of water masses of 35 million m^3 is conveyed. The circulation of water masses is typically cyclonic (Artegiani et al., 1997). In the basin flow the Dense Waters of the Northern Adriatic (NADW), the Deep Waters of the Adriatic (ADW) and the Intermediate Waters Levantine (LIW).

The NADW Dense Waters (cold waters) flow from north to south along the western continental shelf, the deep waters originate in the lower Adriatic basin, while the warmer and salty Levantine intermediate waters enter the northern Ionian through the Otranto Channel and flow in a south-north direction along the eastern coasts of the Adriatic. These masses of water make the funds of the eastern part of the southern basin characterized by higher aline and thermal regimes than the western part (Artegiani et al., 1997). The superficial current present along the western coasts instead pushes the masses of water from the Adriatic to the Ionian. Thanks to the presence of these flows, the basin of the Southern Adriatic is characterized by the mixing of the cooler and less salty Adriatic waters and the Ionian waters, with higher temperatures and salinity (Vilicic et al., 1995).

As for the bathymetry, the maximum depth of the southern Adriatic is 1,233 m in the so-called 'Bari pit'. This depression has rather asymmetrical contours with the steepest eastern escarpment. The western area shows substantial differences in the two northern and southern portions; the first, where the Gulf of Manfredonia is located, has a wide continental shelf (distance between the coast line and the 200 m of depth equal to 45 nautical miles) and a slightly steep slope; the second one, on the other hand, has small islands of close depth, so that the 200 m are reached about 8 miles from Capo d'Otranto.

The presence and distribution of marine flora and fauna, as well as the main ecological characteristics of the basin are linked to environmental and morphological differences (Marano et al., 1998). The demersal species have landed on both the western and eastern sides of the basin with a respective distribution of 97 % and 3 % (MIPAAFT, 2017).

The area potentially exploited by trawlers is 15,000-17,000 km^2 (70% on the western side, 30 % on the eastern side). The extension of the trailing area has a positive gradient from south to north of the basin.

The Southern Adriatic has a lower level of use than the northern one, as it is characterized mainly by deep habitats. Similarly to the northern basin there are facies and typical associations of mobile funds such as facies with Ophelia sp. and facies of dead leaves of Posidonia oceanica and other phanerogams. It contains a batial basin and includes a large depression that reaches about 1,200 m depth. The open area is dominated by the biocoenoses of offshore and debris funds.

Furthermore, in accordance with the Convention on Biological Diversity, the southern Adriatic and Ionian Strait are considered as significant EBSA areas (EBSA: Ecologically or Biologically Significant Areas). These areas contain important habitats for marine mammals such as Ziphius cavirostris, a species of Annex II of the Protocol concerning Protected Areas and Biological Diversity in the Mediterranean (SPA / BD Protocol) under the Barcelona Convention and significant densities of other iconic species such as Mobula mobular, Stenella coeruleoalba, Monachus monachus and Caretta Caretta, all listed in Annex II to the SPA / BD Protocol. Biocenosis of batial mud and white corals are present on hard substrates.

The Southern Adriatic Sea is considerably deeper than the northern basin. Its average depth is 900 m, and its deepest part is the 1,300 m deep Adriatic pit. Through the Strait of Otranto the basin is connected to the Mediterranean Sea. Despite this, the productivity of this basin is quite high when compared with other Mediterranean areas having a similar geomorphology. The reasons for this situation have been understood thanks to the oceanographic studies carried out in the Adriatic date back to the last century. However, systematic and regular measurements in the central and southern Adriatic began in the 1950s. Measurements of temperature, salinity, transparency, oxygen and phosphate were carried out on a monthly basis. In the 1960s, primary production was included in the measures carried out in the middle Adriatic. Based on the standard oceanographic parameters, it is known that the entry of Mediterranean waters is an important factor, which has caused an increase in productivity in the southern Adriatic Sea. During these periodical "ingressioni", the waters of the Mediterranean, relatively rich in nutrients, are transported in the Adriatic, increasing the productivity of the oligotrophic waters of the middle and southern Adriatic. The increase in productivity is supposed to occur mainly due to the flow of phosphorus from the eastern Mediterranean. Furthermore, an increase in temperature and salinity on an annual scale is also observed, which coincided over time with such "ingresses". A certain regularity has been observed in production fluctuations year after year and related to the passage of water from the Mediterranean to the Adriatic. A change in the composition of phytoplankton species was observed, as was increased biomass and a modified species composition in zooplankton communities. Over the years it has been found that a stronger input of water from the Mediterranean coincides with a higher primary production, a greater biomass of zooplankton and changes in the composition of the species.

The most important feature of the Mediterranean waters that enter the Adriatic (in the middle layer) is their high salinity. This high salinity is characteristic of the Levantine basin, which has one of the highest salinities of all the seas in the world (> 39 psu). The temperature of the Levante waters is higher than that of the Adriatic waters, so that the "income" is also reflected on the temperature. Referring to these phenomena and to certain climatic factors, it has been stated that the most important factor that enhances the water exchange between the two basins is the horizontal pressure gradient in the eastern Mediterranean. A large number of studies until the 1970s showed that the intensity of water exchange between the Adriatic and the Ionian Seas was the most important factor in long-term production fluctuations in the central and southern Adriatic.

Also Marasovic et al. (1999) observed the irregular increase in primary production in southern Adriatic waters and linked it to periods of intensified influxes of Mediterranean waters in the Adriatic Sea carrying higher amounts of nutrients. Their results confirm that the increase in primary biological production is related to the intensified influx of Mediterranean water into the Adriatic. However, these authors hypothesize that the upwelling, reported south of Palagruza, caused by the intense influx of Mediterranean waters, causes the enrichment of the waters of the southern Adriatic by "native" nutrients already present in this area.

In the southern Adriatic there are *Cymodocea nodosa*, *Ruppia maritima* and *Posidonia ocenanica*. While the presence of the first two is circumscribed in small parts of the Apulian coast, the second is uniformly distributed on both the Italian and Albanian side and Montegrino (Figure 2.5).

In the Southern Adriatic some information on the distribution of coralligenous are available for Albania, while no information is officially available for Montenegro, although there are internal reports that refer to the presence of bioconstructions (Figure 2.6). In Puglia there are many areas characterized by the presence of coralligenous funds (Figure 4.4.4.1), while they seem to be absent mäerl bottoms.

This deep coral biocoenosis is constructed from so-called white corals or cold-water corals (CWC), which include two main branched forms: *Lophelia Pertusa* and *Madrepora oculata*, which are a relict species of the Quaternary cold fauna. The peculiar geomorphology of the deep basin of the southern Adriatic determines the optimal conditions for a wide coverage of CWC (Savini et al., 2014). This biocoenosis (Figure 4.4.4.2) develops a complex 3D habitat providing shelter, breeding sites and nursery areas for many associated species and is of key importance as attractors and shelter for deep-sea fish fauna (D'Onghia et al. ., 2012)

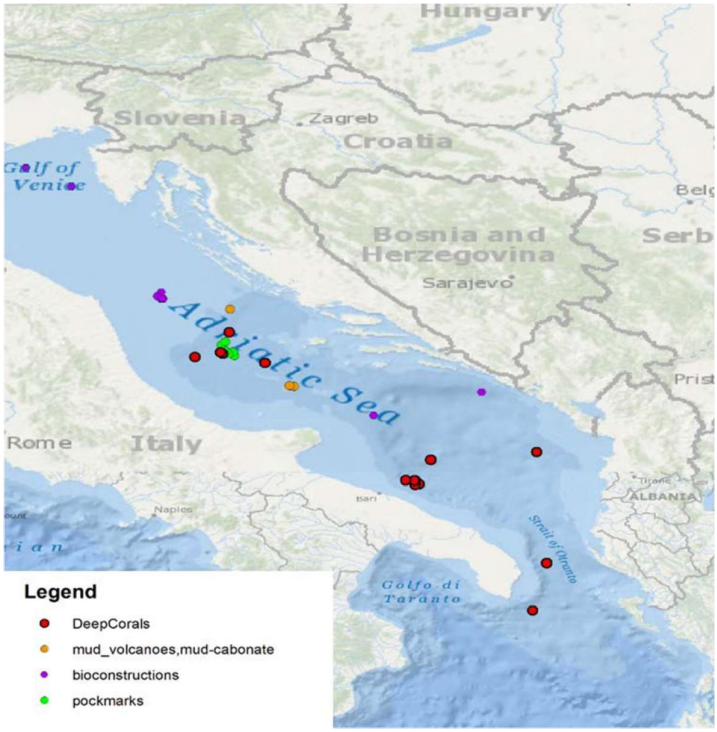

Figure 2.5. Map of the distribution of coralligenous bottoms in the southern Adriatic (Giannoulaki et al., 2013).

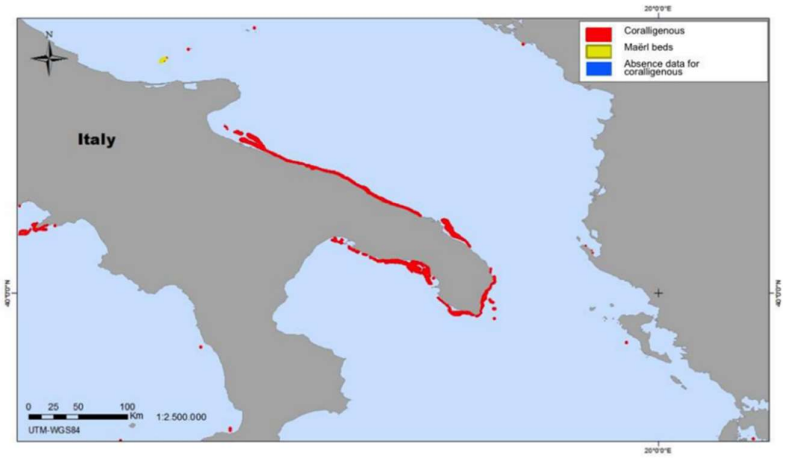

Figure 2.6. Map of the distribution of coralligenous bottoms in the southern Adriatic (Giannoulaki et al., 2013).

7.5.1.5. Ecosystem

The GSA 18 is located entirely in the Adriatic ecoregion together with the GSA 17. In this area, based on the analyzes conducted by Piroddi et al. (2016), the trend of the biomass of the different functional groups shows a decline for some of the apical predators, demersal and pelagic fishes and some invertebrates (Figure 2.7). In particular, the model was able to capture the sharp decline in pinnipeds observed in the Adriatic since the mid-70s and the less marked decline in small demersal fish observed in the mid-1990s. The model has captured some of the patterns observed for hake, sharks and stingrays, which suggest a decline of these functional groups until the late 90s, followed by a slight increase or fluctuations (in the case of hake) in last years of the period studied.

An overall satisfactory correspondence was found between the expected and available data for bentopelagic cephalopods where a decrease was observed from the beginning of the investigation period and for benthic cephalopods and crustaceans. Once again, the model does not represent well the trends for deep fish. As for the small pelagics, when the model uses the anomaly of primary production as a driver, it is not able to reflect the decreasing tendency of the biomass observed in the anchovies, while it has been able to collect a general decline for sardines. However, when using primary production estimated by a biogeochemical model, the ecosystem model is able to follow the sharp decline observed in anchovies in the mid-'70s and also slightly improve the estimate of sardine decline (Figure 2.7).

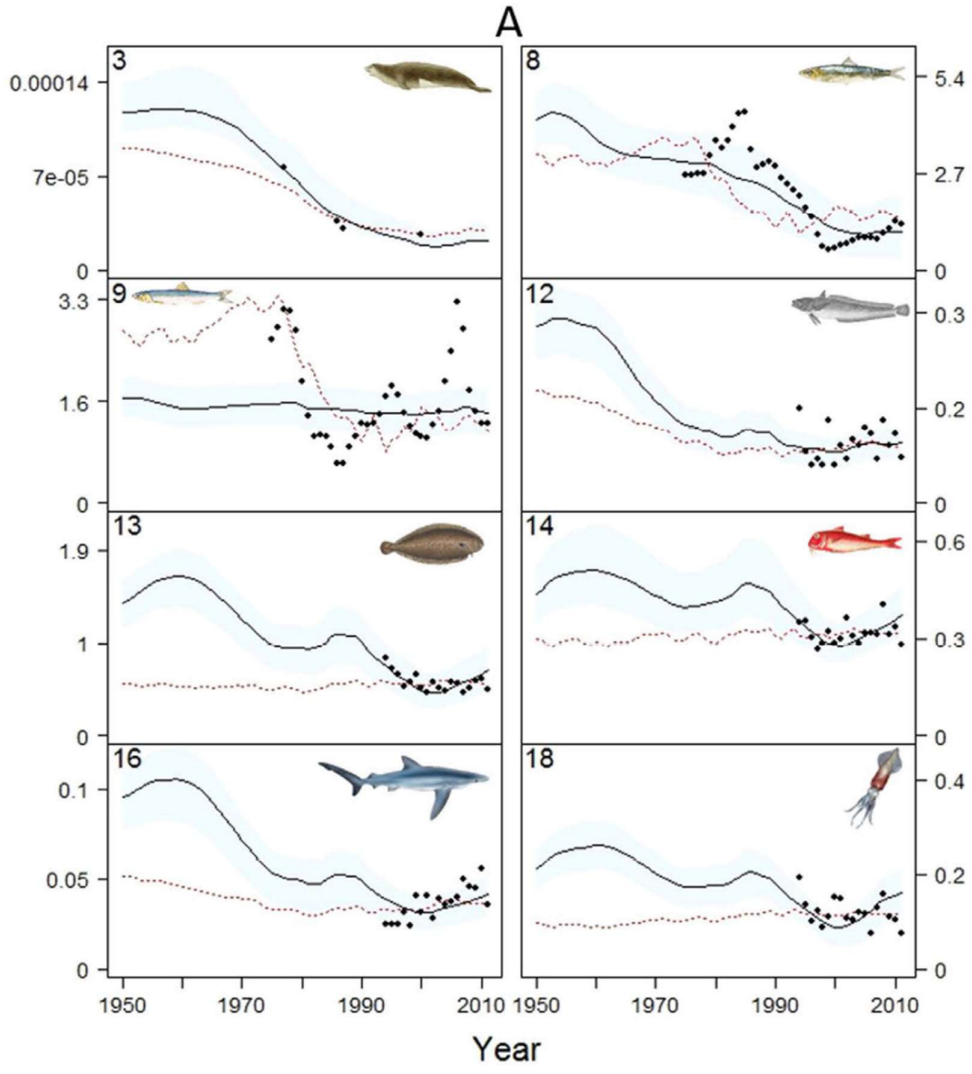

Figure 2.7. Representation of the results of the ecosystem model for some functional groups that are observed in the Adriatic Sea for the period 1950-2011 (Piroddi et al., 2016).

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?	*Yes*	*Yes*	*No*
Rationale				
According to the last available assessment, the primary species listed in Table 2.1 are above PRI.				
b	Minor primary species stock status			
	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?			
Rationale				
Not scored				
References				

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	> 80

Information gap indicator	**More information sought**
Data-deficient? (Risk-Based Framework needed)	**No**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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?	**Yes**	**Yes**	**No**
Rationale				
The management measures in place are considered appropriate for managing the primary main species at a point where recruitment impairment (PRI) is unlikely. These measures include aerial restrictions (based on depth), effort restrictions, minimum landing sizes, seasonal closures and technical gear measures. *However, these measures are not considered to be highly likely to ensure that primary main species remain above the PRI; there is not an objective basis for confidence that the measures will work, and robust management focused on reducing fishing mortality and improving selectivity is advocated for Mediterranean fish stocks on a whole (e.g. see Paraskevas et al., 2014). Evidence of implementation is likely to exist in the form of at-sea inspection reports of gear and VMS records etc.*				
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?	**Yes**	**Yes**	**No**
Rationale				
There are a number of management measures in place to regulate fisheries in the Adriatic Sea. To date management has been primarily based on technical measures, many of which have been implemented by Italy, Slovenia and Croatia in order to conform to the provisions outlined in the Mediterranean Fisheries Regulation EC 1967/2006, amended by EC 1343/2011, as well as the applicable GFCM Recommendations. Such measures include for instance minimum landing sizes for a number of species, time/area closures, technical conditions for maximum fishing gear dimensions and characteristics, minimum mesh sizes, requirements for fishing licenses etc. Although the management plan for otter trawls being implemented in the Adriatic does not directly consider species caught as by-catch, several of the measures (e.g. area closures, reduction of fishing effort) will nevertheless also serve to manage and reduce catches of non-target species, and can be seen as a partial management strategy for such species. However no testing to support high confidence that the partial strategy will work has been carried out – SG 100 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 overall objective as set out in scoring issue (a).**

	Met?		**Yes**	**No**
Rationale				
Based on available effort data as well as enforcement and control information there is some objective basis for confidence that the measures are being implemented successfully in the UoA – SG 80 is met. *The management strategy for otter trawls currently implemented in the Adriatic concerns the management of the main demersal species (e.g., hake, Norway lobster, red mullet, musky and horned octopus), and the process of adopting sub-regional management plans for other stocks by the relevant authorities has yet to be finalised. The otter trawl fisheries management plan does not specifically mention management of non-target species, and as it cannot be considered a partial management strategy in place that is designed to maintain / not hinder rebuilding of such species. In addition there is no clear evidence currently available that the measures are achieving their overall objectives – SG 100 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?	**NA**	**NA**	**NA**
Rationale				
SA3.5.2 of the MSC Fisheries Certification – Requirements v2.0 states: 'If the primary species is a shark, the team shall score scoring issue (d)'. Since there are no species caught by the UoA for which management tools and measures are in place, and hence no primary species which are sharks, the team did not score issue (d).				
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				
Scoring issue (e) was not scored in line with GSA 3.5.3 of the MSC Fisheries Certification – Requirements v2.0: 'If there is no unwanted catch of primary species, or no primary species at all, then the 'Review of alternative measures' scoring issue (e) is not scored.'				
References				
N/A				

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

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

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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**	**Yes**	**No**

Rationale

The UoA is subject to both EU and GFCM fisheries data collection requirements.

- *Under the EU fisheries Data Collection Framework (DCF) established by Council Regulation (EC) No 199/2008, Commission Regulation (EC) No 665/2008, and Commission Decision 2010/93/EU, Member States are required to compile a wide range of biological and economic data, including:*
- *Biological data, including stock-related data;*
- *Data on fleet size and fishing activity analysed by fishing season, fleet segment, areas fished and by stock;*
- *Economic data relating to the fishing, aquaculture and fish processing industries;*
- *Fisheries independent research surveys at sea;*
- *Data to evaluate the effects of the fisheries sector on the marine ecosystem.*

Moreover, the UoA is also subject to the requirements of the GFCM Data Collection Reference Framework (DCRF), which is GFCM's framework for the collection and submission of the fisheries-related data. A number of GFCM Recommendations request data from GFCM contracting parties, which is then used by the relevant GFCM subsidiary bodies to formulate scientific advice. The DCFR is based on seven different tasks:

- *T1 – Global figures of national fisheries*
- *T2 – Catch (landing data, catch data per species)*
- *T3 – Incidental catch of vulnerable species*
- *T4 – Fleet*
- *T5 – Effort*
- *T6 – Socioeconomics*
- *T7 – Biological information (stock assessment, length data, other biological data, dolphin fish, red coral, European eel, ecosystem indicators)*
- *Both qualitative and quantitative information is available to assess the impact of the UoA on non-target species as a result of the application of the EU DCF and GFCM DCRF in the Adriatic Sea. The available catch data indicates that there are in fact no main primary species caught by this fishery – SG 60 and 80 are met.*
- *The required quantitative information to assess the impact of the UoA on non-target species with a high degree of certainty is however not available. Data quality issues reported by the last STECF expert working*

group performing stock assessments for species caught as by-catch by the UoA in the Adriatic Sea (STECF 16-08, 2016) for instance included:

- *Issues with the time series of landings data and size structure data for some species;*
- *A lack of length composition information in discards data;*
- *Problems with fisheries independent data coming from the MEDITS survey in GSA 17 and 18 due to changes in methodology and survey timing.*

SG 100 is not met.

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?			**Yes**

Rationale

As is described in detail for scoring issue 2.1.3 (a) above, the UoA is subject to both EU and GFCM fisheries data collection requirements. Some quantitative information is available to assess the impact of the UoA on non-target species with respect to status as a result of the application of the EU DCF and GFCM DCRF in the Adriatic Sea – SG 100 is met.

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 manage **main** primary species.	Information is adequate to support a **strategy** to manage **all** primary species, and evaluate with a **high degree of certainty** whether the strategy is achieving its objective.
	Met?	**Yes**	**Yes**	**No**

Rationale

As is described in detail for scoring issue 2.1.3 (a) above, the The UoA is subject to both EU and GFCM fisheries data collection requirements. The information collected as a result of the application of the EU DCF and GFCM DCRF in the Adriatic Sea would be adequate to support a partial strategy to manage main primary species. Moreover the management plan for bottom trawl fisheries in the Adriatic Sea constitutes a partial strategy to manage by-catch species since management measures (e.g. season and area closures) will also have an effect on by-catch species. In any case the available catch data actually indicates that there are in fact no main primary species caught by the UoA – SG 60 and SG 80 are met.
There is currently no cohesive and strategic arrangement to manage species caught as by-catch by the UoA. Several data quality issues remain (STECF 16-08, 2016) and have yet to be addressed by the relevant authorities, so it would not be possible to evaluate with a high degree of certainty whether a potential future strategy is achieving its objective – SG 100 is not met.

References

STECF 16-08 (2016). Scientific, Technical and Economic Committee for Fisheries (STECF) – Mediterranean assessments part 2. Publications Office of the European Union, Luxembourg, EUR 27758 EN, 483 pp.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	

Condition number (if relevant)	

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
a	Main secondary species stock status			
	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?	**Yes**	**Yes**	**Yes**
Rationale				
		Information on catches of mixed bottom trawl fisheries in the Adriatic Sea comes from a number of sources: (i) data collected under the EU fisheries Data Collection Framework (DCF) / data collected under the GFCM Data Collection Reference Framework (DCRF), (ii) data from on-board observations carried out in line with EC 812/2004, (iii) information from scientific studies. *Official Italian DCF catch data for bottom trawlers operating in the Adriatic Sea (i.e. GSAs 17 and 18) shows that numerous other species are caught and landed besides hake, Norway lobster, red mullet, musky octopus, albeit in very small volumes. Apart Norway lobster, none of these species have a stock asseement, but they are all currently managed through the MPs implemented by the Italian Ministry, and consequently all these species fall under the definition of Primary species.* *Based on the data available, the assessment team determined that there are no main secondary species being impacted by the UoA – SG 60, SG 80 and SG 100 are 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?			**Yes**

Rationale
Based on (a), the assessment team determined that there are no Minor secondary species being impacted by the UoA – SG 100 is met.

References
STECF, 2016a. Reports of the Scientific, Technical and Economic Committee for Fisheries (STECF) – Mediterranean assessments part 2 (STECF-16-08). 2016. Publications Office of the European Union, Luxembourg, EUR 27758 EN, JRC 101548, 483 pp.
STECF, 2016c. Scientific, Technical and Economic Committee for Fisheries (STECF) – 52nd Plenary Meeting Report (PLEN-16-02); Publications Office of the European Union, Luxembourg; EUR 28106 EN; doi:10.2788/6958.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

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

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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?	**Yes**	**Yes**	**Yes**
Rationale				
Apart Norway lobster, none of these species have a stock asseement, but they are all currently managed through the MPs implemented by the Italian Ministry, and consequently all these species fall under the definition of Primary species – SG 100 is 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/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?	**Yes**	**Yes**	**Yes**
Rationale				
Based on (a), the assessment team determined that there are no Secondary species being impacted by the UoA – SG 100 is 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?		**Yes**	**Yes**
Rationale				
Based on (a), the assessment team determined that there are no Secondary species being impacted by the UoA – SG 100 is 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**	**Yes**

Rationale				
Based on (a), the assessment team determined that there are no Secondary species (and therefore no sharks) being impacted by the UoA – SG 100 is met.				
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-related mortality of **unwanted** catch of main secondary 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 secondary 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 secondary species, and they are implemented, as appropriate.
	Met?	**Yes**	**Yes**	**Yes**
Rationale				
Based on (a), the assessment team determined that there are no Secondary species being impacted by the UoA – SG 100 is met.				
References				
List any references here, including hyperlinks to publicly-available documents.				

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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**	**Yes**	**Yes**
Rationale				
Apart Norway lobster, none of these species have a stock asseement, but they are all currently managed through the MPs implemented by the Italian Ministry, and consequently all these species fall under the definition of Primary species – SG 60, SG 80 and SG 100 are met by default.				
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?			**Yes**
Rationale				
Based on (a), the assessment team determined that there are no Secondary species being impacted by the UoA - SG 100 is met by default.				
c	Information adequacy for management strategy			
	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?	**Yes**	**Yes**	**Yes**
Rationale				
Based on (a), the assessment team determined that there are no Secondary species being impacted by the UoA – SG 60, SG 80 and SG 100 are met by default.				
References				

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

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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.
	Met?	*NA*	*NA*	*NA*
Rationale				
Scientific data indicates that the populations of all ETP species encountered in the Adriatic Sea - loggerhead turtle (Caretta caretta), green turtle (Chelonia mydas), bottlenose dolphin (Tursiops truncatus), and striped dolphin (Stenella coeruleoalba) - are part of Mediterranean populations, which are recognised as distinct regional management units (Wallace et al., 2010; IUCN, 2012). Similarly there is evidence for distinct twaite shad populations in the Atlantic and Mediterranean Seas (Faria et al., 2012). *With regards to turtles, scientific advances have recently been made to estimate the impact of fisheries bycatch on Mediterranean populations of loggerhead and green sea turtles (Casale and Heppell, 2016), but there are no set bycatch limits for protection and rebuilding of these populations in force at present. Similarly there are no set limits for the capture of twaite shad in the Mediterranean Sea. Since there are currently no national or international set limits for catches of the Mediterranean populations of the relevant ETP species scoring issue (a) was not scored.*				
b	Direct effects			
	Guide post	Known direct effects of the UoA are likely to not **hinder recovery** of ETP species.	Known direct effects of the UoA are 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?	*Yes*	*Yes*	*No*
Rationale				
The detrimental direct effects of the UoA on the ETP species are not known with a high degree of confidence – SG 100 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?		**Yes**	**No**
Rationale				
The detrimental indirect effects of the UoA on the ETP species are not known with a high degree of confidence – SG 100 is not met.				
References				
Bearzi, G., Fortuna, C. & Reeves, R. (2012). Tursiops truncatus (Mediterranean subpopulation). The IUCN Red List of Threatened Species 2012: e.T16369383A16369386. Available online at: http://dx.doi.org/10.2305/IUCN.UK.2012-1.RLTS.T16369383A16369386.en (accessed 14/06/2016).				

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Clusa, M., Carreras, C., Pascual, M., Gaughran, S. J., Piovano, S., Giacoma, C., ... & Maffucci, F. (2014). Fine-scale distribution of juvenile Atlantic and Mediterranean loggerhead turtles (Caretta caretta) in the Mediterranean Sea. Marine biology, 161(3), 509-519.

Dolman, S., Baulch, S., Read, F., Ritter, F., & Evans, P. (2015). Towards an EU Action Plan on Cetacean Bycatch. Conference paper presented at 22nd ASCOBANS Advisory Committee Meeting. The Hague, Netherlands, 29 September - 1 October 2015; AC22/Inf.4.1.e.

Faria, R., Weiss, S., & Alexandrino, P. (2012). Comparative phylogeography and demographic history of European shads (Alosa and A. fallax) inferred from mitochondrial DNA. BMC evolutionary biology, 12(1), 1.

Fortuna, C. M., Vallini, C., Filidei Jr, E., Ruffino, M., Consalvo, I., Di Muccio, S., ... & Mazzola, A. (2010b). By-catch of cetaceans and other species of conservation concern during pair trawl fishing operations in the Adriatic Sea (Italy). Chemistry and Ecology, 26(S1), 65-76.

Fortuna, C.M., Filidei E. jr., Giovanardi, O. (2014). Valutazione delle catture accidentali di specie protette nel traino pelagico: BYCATCH 2012-2013 – estensione 2013. Relazione finale, 29pp.

Freyhof, J. 2008. Alosa fallax. The IUCN Red List of Threatened Species 2008: e.T904A13091973.

ICES. 2015. Report of the Working Group on Bycatch of Protected Species (WGBYC), 2-6 February 2015, ICES Headquarters, Copenhagen, Denmark. ICES CM 2015\ACOM:26. 82 pp.

La Mesa, G., Annunziatellis, A., Filidei, E., & Fortuna, C. M. (2015). Modeling environmental, temporal and spatial effects on twaite shad (Alosa fallax) by-catches in the central Mediterranean Sea. Fisheries Oceanography, 24(2), 107-117.

IUCN (2012). Marine Mammals and Sea Turtles of the Mediterranean and Black Seas. Gland, Switzerland and Malaga, Spain: IUCN. 32 pp.

Sala, A., Bonanomi, S., Benetti, A., Cani, M. V., Ciofi, C., Colombelli, A., Corrias, V., Ferrer, I. M., Filiciotto, F., Fortuna, M. C., Gaspari, S., Giovanardi, O., Marcone, A., Mazzola, A., Mazzoldi, C., Moro, F., Notti, E., Pulcinella, J., Raicevich, S., Rampazzo, F., Renier, D., Vizzini, S., Zane, L., 2018. Evaluation of the accidental catches of protected species in the pelagic trawling (BYCATCH 2016-2017). Final Report to the Italian Ministry of Agriculture and Forestry (Project MIPAF 7A02), 110 pp.

Sala, A., Brčić, J., De Carlo, F., Lucchetti, A., Pulcinella, J., Virgili, M., 2015. Evaluation of the accidental catches of protected species in the pelagic trawling (BYCATCH 2013-2014). Final Report to the Italian Ministry of Agriculture and Forestry (Project MIPAF 7A02), 59 pp (doi: 10.13140/2.1.3021.3927).

Sala, A., Brčić, J., De Carlo, F., Lucchetti, A., Virgili, M., 2013. Evaluation of the accidental catches of protected species in the pelagic trawling (BYCATCH 2012-2013). Final Report to the Italian Ministry of Agriculture and Forestry (Project MIPAF n. 7A02), 36 pp (doi: 10.13140/2.1.4594.2562).

Wallace, B. P., DiMatteo, A. D., Hurley, B. J., Finkbeiner, E. M., Bolten, A. B., Chaloupka, M. Y., ... & Bourjea, J. (2010). Regional management units for marine turtles: a novel framework for prioritizing conservation and research across multiple scales. PLoS One, 5(12), e15465.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

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

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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				
The assessment team considers that there is currently comprehensive strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality designed to achieve above national and international requirements for the protection of these species – SG 100 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				
Not relevant - there are requirements for protection or rebuilding provided through national ETP legislation or international agreements.				
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** that the strategy will work.
	Met?	**Yes**	**Yes**	**No**
Rationale				
To date no detailed quantitative analysis has been carried out to assess the impact of fishery-related mortality on turtles and cetaceans (FAO, 2016). The most comprehensive review of the impact of incidental catches on Mediterranean Sea turtle populations is that carried out by Casale (2011). A quantitative analysis of the effectiveness of the strategy has thus yet to be carried out – SG 100 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?		**Yes**	**No**

Rationale

There is thus no clear evidence that the strategies are being implemented successfully – SG 100 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.
	Met?	**Yes**	**No**	**No**

Rationale

GFCM Recommendation 35/2011/4 on incidental bycatch of sea turtles in fisheries in the GFCM Competence Area states that 'Upon receipt of advice from the SAC, the GFCM shall consider, if necessary, additional measures to mitigate sea turtle bycatch in those fisheries which have been considered most relevant', but no additional GFCM Decisions on management of sea turtle by-catch have been published since 2011 – SG 80 is not met.

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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**	**Yes**	**No**
Rationale				
Whilst quantitative literature information on UoA related impacts is available, data which would allow for an assessment of the magnitude of these impacts at population level with a high degree of certainty is lacking. Moreoever data on post-release impacts due to injuries is lacking – SG 100 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 mortality and injury of ETP species, and evaluate with a **high degree of certainty** whether a strategy is achieving its objectives.
	Met?	**Yes**	**Yes**	**No**
Rationale				
Overall the information is not adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives – SG 100 is not met.				
References				
ICES. 2015. Report of the Working Group on Bycatch of Protected Species (WGBYC), 2-6 February 2015, ICES Headquarters, Copenhagen, Denmark. ICES CM 2015\ACOM: 26. 82 pp. *Fortuna, C. M., Vallini, C., Filidei Jr, E., Ruffino, M., Consalvo, I., Di Muccio, S., ... & Mazzola, A. (2010b). By-catch of cetaceans and other species of conservation concern during pair trawl fishing operations in the Adriatic Sea (Italy). Chemistry and Ecology, 26(S1), 65-76.*				

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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**	**No**

Rationale

It is widely acknowledged that extensive areas of soft bottom habitats are present in the Adriatic Sea (Vatova (1949; Gamulin-Brinda, 1967; Scardi et al., 1999; Jenkins, 2008, Piras et al., 2016). These soft bottoms show a general pattern of changing from sand to muddy / detritic bottoms with increasing distance from the shore (Brambati et al., 1983).

Bottom trawlers operate in contact with benthic habitats and/or species. The fishing net is configured to interact with the seabed during the actual fishing operation. However, damage to the Mediterranean-type gear is likely to occur in hard bottom rocky substrata. Since, fishing operations usually take place over soft and flat bottom habitats, the assessment team considers 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 – SG 60 and SG 80 are met.

The team also consider that there is not an 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 – SG 100 is not 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?	**Yes**	**Yes**	**No**

Rationale

Information on the distribution of VME habitats in the Adriatic Sea is available from a number of sources (e.g. Casellato and Stefanon, 2008; Martin et al., 2014; Telesca et al., 2015), and publically available online through the MAREA-MEDISEH project online map viewer (http://mareaproject.net/medviewer/). Sensitive habitats in general and VMEs in particular are protected from the impact of fishing gears by a number of EU Directives, including the Habitat's Directive (EEC 92/43), the Marine Strategy Framework Directive (EC 2008/56), and the Mediterranean fisheries Regulation (EC 1967/2006 as amended by EC 1343/2011).

In addition to these legislative instruments there are at present 25 Marine Protected Areas (MPAs) in the Adriatic Sea (including coastal MPAs which partly cover marine areas); 21 of these MPAs are in the eastern Adriatic including 17 in Croatia (Bastari et al., 2016). 4 additional MPAs are currently in the planning phases: 2 in Albania and 2 in Central Italy (Randone, 2016). These protected areas are strictly enforced by the Italian coastguard, who monitor the location of fishing vessels through VMS. Indeed fishing vessels of the UoC are aware of the location of protected areas, which are highlighted on their on-board navigation system.
Since the location of VMEs is well known, a number of effective management measures are in place to protect VMEs from fishing in the area where the UoA operates, and these measures are being adequately implemented by the local authorities and appear to be respected by fishers, the assessment team considers 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 – SG 60 and SG 80 are met.

Precise information on the location of fishing grounds based on data from satellite-based Vessel Monitoring System (VMS) was not available to the assessment team. There is thus no 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 – SG 100 is not met.

	Minor habitat status			
c	Guide post			There is **evidence** that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
	Met?			**No**

Rationale

Hard bottom rocky substrata were identified to be minor habitats since they are not common in the Adriatic Sea in general, and thus not commonly encountered by the UoA. Although there is some evidence that rocky areas / reefs are in some cases included in Marine Protected Areas or temporal closure areas (a map of MPAs is available in Bastari et al., 2016), precise information on the location of fishing grounds based on data from satellite-based Vessel Monitoring System (VMS) was not available to the assessment team. There is thus no evidence that the UoA is highly unlikely to reduce structure and function of minor habitats to a point where there would be serious or irreversible harm – SG 100 is not met.

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

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

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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**	**Yes**

Rationale

Benthic habitats in general, and sensitive habitats in particular are protected from the impact of fishing gears by EU legislation:

- *Directive (EC) 2008/56 on establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive). The over-arching goal of the Directive is to achieve 'Good Environmental Status' by 2020 across Europe's marine environment. Good environmental status shall be determined at the level of the marine regions or sub-regions, and on the basis of a series of qualitative descriptors. Descriptor 6 requires that: 'Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected'.*
- *Council Directive (EEC) 92/43 of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (often referred to as the 'Habitats Directive'): the main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring EU Member States to take measures to maintain or restore natural habitats as well as the populations of wild species listed in the Directive's Annexes, and to maintain habitats and species at a favourable conservation status.*
- *Council Regulation (EC) No 1967/2006 (as amended by EC 1343/2011) concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea.*

Besides the coastal areas which are protected from fishing, there are at present 25 Marine Protected Areas (MPAs) as well as numerous temporal closure areas designed to reduce the impact of fishing activities on the marine environment in general (Bastari et al. 2016). These protected / temporal closure areas as well as fishing gear restrictions are enforced by the Italian coastguard, who monitor the location and movement of fishing vessels through satellite-based Vessel Monitoring System, which is compulsory on fishing vessels of 12 metres' length overall or more (EC 1224/2009). Fishing vessels of the UoC are aware of the location of protected areas, which are highlighted on their on-board navigation system.

Ongoing monitoring is required under the Marine Strategy Framework Directive, which requires that EU Member States establish environmental targets and monitoring programmes for ongoing assessment, enabling the state of the marine waters concerned to be evaluated on a regular basis.

Since there is active management which reduces the impacts of fishing on benthic habitats, includes special provisions for the protection of critical habitats such as nursery areas as well as VMEs, as well as for continuous monitoring and enforcement, the assessment team considers that SG 100 is 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**	**No**

Rationale

Based on (i) the variety of measures in place to reduce the impact of fisheries in general, and bottom trawl fisheries in particular on the benthic habitats (see scoring issue (a) above for details), and (ii) available studies assessing the habitat impacts of fishing (e.g. Lucchetti and Sala, 2012; Lucchetti et al., 2018), there is some objective basis for confidence that the measures / partial strategy will work – SG 60 and SG 80 are met.

Testing to support high confidence that the strategy will work has yet to be carried out, so SG 100 is not 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**	**No**

Rationale

There is some quantitative evidence that the measures/partial strategy is being implemented successfully, for example:

- *Several coastal / marine Natura 2000 sites have been established in the Adriatic Sea in line with the EEC 92/43;*
- *Protected areas, temporal closures and fishing gear restrictions are being enforced by the Italian coastguard, who monitor the location and movement of fishing vessels through satellite-based Vessel Monitoring System, which is compulsory on fishing vessels of 12 metres' length overall or more (EC 1224/2009). The UoA has a good compliance record, in particular with regards to respecting areas and seasons closed to fishing.*

The assessment team thus considers that SG 80 is met.

Clear quantitative evidence that the strategy is being implemented successfully and is achieving its objective is lacking – SG 100 is not 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?	**Yes**	**Yes**	**No**

Rationale

Some quantitative evidence that the UoA complies with its management requirements to protect VMEs is available:

- *Satellite-based Vessel Monitoring System (VMS) data are routinely used by the authorities in charge of enforcement;*
- *Information on the number of infringements issued by the Italian authorities against vessels of the UoA as part of monitoring and enforcement inspections is routinely compiled and shows that fishing in closed / protected areas is not a concern.*

The assessment team thus considers that SG 60 and SG 80 are met.

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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 Adriatic Sea supports a wide diversity of habitats, including coralligenous communities, maerl bottoms, seagrass meadows, rocky reef areas, and extensive areas of soft bottoms (Jenkins, 2008; MEDISEH, 2013; Bastari et al., 2016). Based on the available information the assessment team identified the following European Nature Information System (EUNIS) habitat categories to be relevant for the assessment:

Minor habitats
- *A3: Infralittoral rock and other hard substrata*
- *A4: Circalittoral rock and other hard substrata*

Main habitats:
- *A5.1: Sublittoral coarse sediment*
- *A5.2: Sublittoral sand*
- *A5.3: Sublittoral mud*
- *A5.4: Sublittoral mixed sediments*
- *A5.5: Sublittoral macrophyte-dominated sediment => A5.51: Maerl beds*
- *A5.5: Sublittoral macrophyte-dominated sediment => A5.53: Sublittoral seagrass beds (Posidonia, Cymodocea, Zostera etc.)*
- *A5.5: Sublittoral macrophyte-dominated sediment => A5.54: Angiosperm communities in reduced salinity (vegetation in brackish water, Zostera in reduced salinity etc.)*
- *A5.6: Sublittoral biogenic reefs (mussel beds, Lophelia reefs, polychaete reefs)*

A map of soft bottom habitats in the Adriatic Sea is available from Jenkins (2008); data on the benthic assemblages found in these soft bottom habitats was first compiled by Vatova (1949), and subsequently studied by a number of authors (e.g. Gamulin-Brinda, 1967; Scardi et al., 1999; Piras et al., 2016). A thorough review of existing spatial datasets showing the distribution of coralligenous, maërl and seagrass habitats across the entire Mediterranean, including the Adriatic Sea, was undertaken by the MEDISEH (Mediterranean Sensitive Habitats) project (MEDISEH, 2013), whose results are available online on the MAREA (Mediterranean hAlieutic Resources Evaluation and Advice) online map viewer (http://mareaproject.net/medviewer/), and have been published in scientific journals (e.g. Martin et al., 2014; Telesca et al., 2015). The assessment team thus considers that the nature, types and distribution of the main habitats are broadly understood – SG 60 is met.

Bottom trawlers operate in contact with benthic habitats and/or species. The fishing net is configured to interact with the seabed during the actual fishing operation. However, damage to the Mediterranean-type gear is likely to occur in hard bottom rocky substrata. Since, fishing operations usually take place over soft and flat bottom habitats, the

assessment team considers 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 – SG 60 and SG 80 are met. The assessment team is of the opinion that the 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 – SG 80 is met.

Although the distribution of both main and minor habitats are known at a level of detail relevant to the scale and intensity of the UoA, the distribution of all habitats is not well known over their range since several of the available habitat maps are lacking in detail and / or are outdated – SG 100 is not met.

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 attributes of the main habitats.	The physical impacts of the gear on all habitats have been quantified fully.
	Met?	**Yes**	**Yes**	**No**

Rationale

Information on the impacts of bottom trawlers on benthic habitats is available from both scientific and grey literature (STECF 12-12), and the distribution of main habitats is known (for details refer to scoring issue a).

The available information is thus 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 – SG 60 is met.

Although the information was not available to the assessment team, the Italian coastguard monitors the location and movement of fishing vessels through satellite-based Vessel Monitoring System, which is compulsory on fishing vessels of 12 metres' length overall or more (EC 1224/2009). The UoA has a good compliance record, in particular with regards to respecting areas and seasons closed to fishing. Information to allow for an adequate identification of the main impacts of the UoA on the main habitats, and information on the spatial extent of interaction and on the timing and location of use of the fishing gear is thus adequate – SG 80 is met.

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 UoA's area of operation is continuously monitored by the relevant authorities through the use of VMS data. EU Member States have obligations to monitor any increase in risk to benthic habitats in general and sensitive habitats in particular under the Marine Strategy Framework Directive (EC 2008/56) as well as the Habitats Directive (EEC 94/43). Furthermore, under the MSFD Member States are required to implement 'programmes of measures for the protection and management of the marine environment', and to present interim reports describing progress in the implementation of these programmes to the Commission. The effectiveness of the implemented management measures is thus also monitored. The assessment team thus considers that adequate information continues to be collected to detect any increase in risk to the main habitats – SG 80 is met.

Although Member States have an obligation to measure changes in habitat distributions over time under the MSFD and Habitats Directive, the assessment team considers that sufficiently detailed habitat maps are currently not available for all marine habitats in the Adriatic Sea – SG 100 is not met.

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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
	Ecosystem status			
a	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**	**Yes**	**No**

Rationale

Coll et al. (2007) developed a trophic mass-balance model to characterise the food web of the Northern and Central Adriatic and described a total of forty functional groups, including target and non-target fish, invertebrate groups and detritus groups. The model highlighted that there is important coupling between benthic and pelagic production of detritus, benthic invertebrates and plankton. Organisms characterising mainly the low and medium trophic levels, but also the upper trophic levels were important in terms of keystoneness and total effects: phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), anchovy and dolphins were all ranked highly.

A subsequent review of functional groups acting as keystones in the Mediterranean Sea food webs confirmed this unique combination of suprabenthos, micro- and mesozooplankton, dolphins and small pelagic fish in structuring the Adriatic Sea ecosystem, and highlighted the importance of benthic organisms as key structuring species with a relatively high proportion of biomass (Coll and Libralato, 2012). These functional groups were thus interpreted as being the features giving the ecosystem its characteristic nature and dynamics. Species which have been considered separately in this assessment (the P1 target species anchovy and sardine; ETP species striped and bottlenose dolphins) were not considered again.

Bottom trawlers operate in contact with benthic habitats and/or species. The fishing net is configured to interact with the seabed during the actual fishing operation. However, damage to the Mediterranean-type gear is likely to occur in hard bottom rocky substrata. Since, fishing operations usually take place over soft and flat bottom habitats, the assessment team considers 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 – SG 60 and SG 80 are met – SG 60 and SG 80 are met.

The assessment team considers that there is also evidence that the UoA is likely to disrupt suprabenthos and benthic invertebrates – SG 100 is thus not met for these scoring elements.

The modelling results obtained by Coll et al. (2007) highlight important coupling between the demersal and pelagic compartments due to links between detritus, benthic invertebrates and zooplankton. Such tight coupling may be due to the relatively shallow waters, as well as the general water exchange patterns which prevail in the Adriatic. A high proportion of zooplankton production appears to be directed to detritus, thus maintaining high levels of benthic production, which in turn generate detritus which maintains zooplankton populations (Coll et al., 2007). The important link between benthic invertebrates and detritus components of Adriatic Sea food webs may be affected directly or indirectly by fishing activities. Fishing may be enhancing the re-suspension of organic matter, and discards may be converted to benthic detritus (Coll et al., 2007; Libralato et al., 2010). The re-suspension of organic matter is likely to not be limited sincebottom trawls touch the bottom during fishing operations, if at all, and overall discard volumes by the UoA are low (see section on secondary species for detailed data on discard volumes) – SG 100 is thus not met.

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

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

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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**	**Yes**	**Yes**

Rationale

The potential impacts of the UoA on the key elements of the ecosystem are constrained by a number of relevant measures, including:

- *Regulation (EU) No 1380/2013 on the Common Fisheries Policy (CFP) outlining a set of rules for managing European fishing fleets and for conserving fish stocks. Under the CFP an ecosystem-based approach to fisheries management needs to be implemented, and environmental impacts of fishing activities should be limited.*
- *Commission Delegated Regulation (EU) No 1392/2014 of 20 October 2014 establishing a discard plan for certain small pelagic fisheries in the Mediterranean Sea, which specifies the details for implementing the landing obligation specified in the new Common Fisheries Policy (CFP).*
- *Regulation (EC) No 1967/2006 (as amended by EC 1343/2011) concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea. This regulation outlines a number of measures to protect Mediterranean marine ecosystems from the effects of fishing, including requirements to ban fishing in coastal waters, to protect sensitive habitats and to establish fishing protected areas.*
- *Directive 2008/56/EC on establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive - MSFD). The MSFD outlines a legislative framework for an ecosystem-based approach to the management of human activities which supports the sustainable use of marine goods and services. The overarching goal of the Directive is to achieve 'Good Environmental Status' (GES) by 2020 across Europe's marine environment. Descriptors 1 and 4 of the MSFD include requirements that "the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions" and that "all elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity".*

Achieving GES under the MSFD requires Member States to follow a plan of action stipulated by the Directive as follows:

- *Preparation of an 'initial assessment' of the environmental status of marine waters by July 2012;*
- *Determination of GES, and establishment of associated environmental targets and indicators by July 2012;*
- *Implementation of a monitoring programme for the ongoing assessment of GES and targets by July 2014;*
- *Development of a programme of measures designed to achieve GES by 2015, which will be made operational by 2016.*
- *A review process to reassess the effectiveness of national action plans every six years.*

The assessment team considers that there is thus a strategy that consists of a plan in place, and that this strategy contains measures to address all main impacts of the UoA on the ecosystem. There is evidence that at least some of these measures are in place – SG 100 is met.

b	Management strategy evaluation			
	Guide post	The **measures** are considered likely to work, based on plausible argument (e.g., general experience,	There is **some objective basis for confidence** that the measures/ partial strategy will work, based on some information directly about the	**Testing** supports **high confidence** that the partial strategy/ strategy will work, based on information directly

		theory or comparison with similar UoAs/ ecosystems).	UoA and/or the ecosystem involved.	about the UoA and/or ecosystem involved.
	Met?	**Yes**	**Yes**	**Yes**

Rationale

The management strategy in place is comprehensive, based on a wide range of applicable management measures, takes into account all the potential impacts of the UoA on key elements of the ecosystem (see scoring issue a), and once implemented successfully can be expected to work.

Bottom trawlers operate in contact with benthic habitats and/or species. The fishing net is configured to interact with the seabed during the actual fishing operation. However, damage to the Mediterranean-type gear is likely to occur in hard bottom rocky substrata. Since, fishing operations usually take place over soft and flat bottom habitats, the assessment team considers 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 – SG 60 and SG 80 are met. Similarly the UoA is unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted. In light of the comprehensive strategy in place and the low impacts of the UoA on key elements of the ecosystem the assessment team considers that there is some objective basis for confidence that the measures/partial strategy will work – SG 60 and SG 80 are met.
Testing to support high confidence that the strategy will work has yet to be carried out, so SG 100 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?		**Yes**	**No**

Rationale

Evidence that the strategy is being implemented successfully comes from a number of sources, such as for example:

- *Records of control and enforcement activities carried out by the relevant authorities, e.g. records of infringements issued by the Italian coast guard.*
- *Information on fishing vessel activities from satellite-based VMS and / or AIS data, which although not available to the assessment team is routinely used for law enforcement purposes.*
- *The information collected and processed by the Italian authorities to comply with the MSFD implementation requirements is publically available through the European Environment Information and Observation Network (EIONET) Reporting Obligations Database (http://rod.eionet.europa.eu/obligations/608), and further information specifically for Italy is provided on the website of the Instituto Superiore per la Protezione e la Ricerca Ambientale (http://www.sintai.sinanet.apat.it/msfd/). The available reports provide a detailed analysis of the ecological characteristics and status of the marine environment in the Adriatic Sea, the influence of anthropogenic influences such as commercial fishing activities, and provide details on the implementation of the MSFD in the Adriatic.*

The assessment team thus considers that there is some evidence that the management strategy is being implemented successfully – SG 80 is met. Evidence that the strategy is achieving its objectives is however not yet available for the Adriatic Sea – SG 100 is not met.

References

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

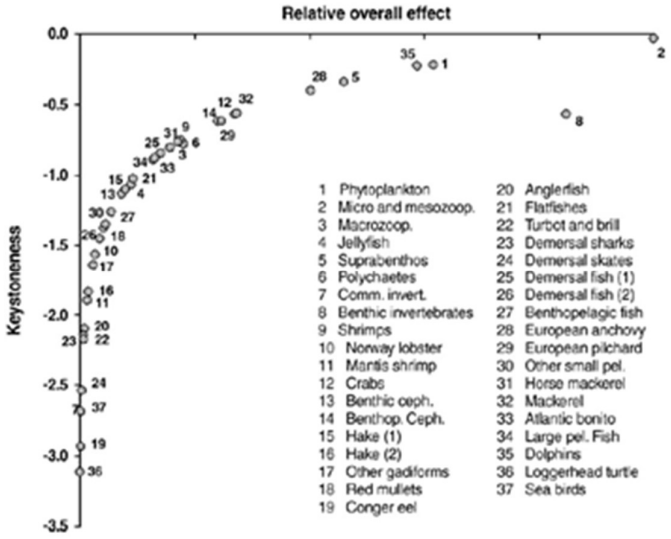
Overall Performance Indicator score	
Condition number (if relevant)	

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**	**Yes**	

Rationale

Coll et al. (2007) developed a trophic mass-balance model to characterise the food web of the Northern and Central Adriatic and described a total of forty functional groups, including target and non-target fish, invertebrate groups and detritus groups. Key elements of the ecosystem were identified by ranking functional groups according to (1) relative overall effect) and (2) a keystoneness index. Phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), and dolphins were identified to be key ecosystem elements.



Relative overall effect (εi) and keystoneness index (KSi) of functional groups in the Adriatic Sea ecosystem. Keystone groups are those with higher εi and higher KSi (Coll et al., 2007).
This result was substantiated by subsequent work (Coll et al., 2008d; Coll et al., 2009c); a review of functional groups acting as keystones in the Mediterranean Sea food webs compiled by Coll and Libralato (2012) confirmed that suprabenthos, micro- and mesozooplankton, dolphins and small pelagic fish are the most important functional groups in structuring the Adriatic Sea ecosystem.
Besides identifying these functional groups as key elements, these studies also describe their role in the Adriatic ecosystem. The assessment team thus considers that information is adequate to broadly understand the key elements of the ecosystem – SG 80 is met.

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**	**Yes**	**No**

Rationale

Bottom trawlers operate in contact with benthic habitats and/or species. The fishing net is configured to interact with the seabed during the actual fishing operation. However, damage to the Mediterranean-type gear is likely to occur in hard bottom rocky substrata. Since, fishing operations usually take place over soft and flat bottom habitats, the assessment team considers 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 (Lucchetti and Sala, 2012; STECF 12-12).
The fishing net is configured to interact with the seabed during the actual fishing operation. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted. The main impacts of the UoA on key ecosystem elements can thus be inferred – SG 60 is met.
The assessment team considers that some of the main impacts of the UoA on key ecosystem elements have been investigated in detail – SG 80 is met.

Whilst the main interactions between the UoA and ecosystem elements can to an extent be inferred from existing information, these interactions have not been investigated in detail – SG 100 is not met for micro- / mesozooplankton, benthic invertebrates and suprabenthos.

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?		**Yes**	**Yes**

Rationale

As detailed in report sections 2.3 (P1 target species) and 2.4.1 – 2.4.4, (P2 primary / secondary / ETP species and habitats) impacts of the fishery on ecosystem components have been identified. Numerous ongoing / past research projects have contributed to our understanding of the Adriatic ecosystem in general, and on the main functions of ecosystem components in particular. A substantial body of scientific literature exists on the topic – the reference list provided with this assessment list gives an overview of some of the most relevant scientific and grey literature. The assessment team is of the opinion that the Adriatic Sea is one of the most studied areas of the Mediterranean Sea, and that as such SG 80 and SG 100 are 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?		**Yes**	**Yes**

Rationale

As detailed in report sections 2.3 / 2.4.1 – 2.4.4, adequate information is available on the impacts of the UoA on the main components (i.e., P1 target species, secondary and ETP species and Habitats) to allow some of the main consequences for the ecosystem to be inferred – SG 80 is met.
As detailed in report section 2.4.5, adequate information is also available on the impacts of the UoA on key ecosystem elements (i.e. phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), anchovy and dolphins (Coll et al., 2007)) to allow the main consequences for the ecosystem to be inferred – SG 100 is met.

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?		**Yes**	**Yes**

Rationale

Monitoring data which would allow to detect any increase in risk level comes from a number of sources:

- *The fisheries Data Collection Framework (DCF) implemented by European Member States / the Data Collection Reference Framework (DCRF) implemented through the GFCM: Data on fishing effort, catches and discards are routinely collected for the UoA. Fisheries independent data is collected through the scientific surveys MEDITS (Mediterranean International Trawl Survey), MEDIAS (Mediterranean International Acoustic Survey) and SOLEMON (survey for the study of flatfish stocks in the central and northern Adriatic Sea).*
- *The activity of the UoA is continuously monitored by the relevant authorities, including through the use of satellite-based VMS data.*
- *Monitoring strategies and programmes being implemented by EU Member States as part of obligations arising from the implementation of the Marine Strategy Framework Directive. Member States are obliged to implement the monitoring activities for ongoing assessment and regular updating of environmental targets, including on the maintenance of biological diversity, marine food-webs and sea-floor integrity.*
- *Scientific research activities in the Adriatic Sea is ongoing (see report section 2.4.5 for examples of relevant research projects), and will complement information coming from fisheries and environmental monitoring activities by providing further information on best practices to manage impacts.*

The assessment team thus considers that adequate data continue to be collected to detect any increase in risk level, and that the available information is adequate to support the development of strategies to manage ecosystem impacts – SG 80 and SG 100 are met.

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	**>80**
Information gap indicator	**Information sufficient to score PI**

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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7.6 Principle 3

7.6.1 Principle 3 background

The UoA consists of stock Deep-water rose shrimp shared between EU Member States (Italy and Croatia) and third countries (Montenegro and Albania).

The fishery area of operation is FAO Central Mediterranean Subarea 37.2 - Adriatic Division 37.2.1; Geographical Sub-Area 18 (Southern Adriatic).

The UoA vessels are Italian-registered and so fish under Italian licences, are members of Italian POs and report (via electronic logbooks) to the Italian management authorities.

The main management body for the UoA is therefore the Italian central government, which operates in accordance with its commitments as a Member State of the European Union and as a contracting party of the regional fishery management organisation, the UN FAO's General Fisheries Commission of the Mediterranean and Black Sea (GFCM). How each organisation works to manage the fishery is described in the sections below.

EUROPEAN UNION

As Italy is an EU Member State, the key legal framework for the management of the UoA is set out at European level by the Common Fisheries Policy (CFP; European Regulation 1380/2013). The CFP provides a framework under which shared stocks in European waters (stocks where the geographic distribution covers more than one European EEZ, or stocks fished outside 12 miles in a given EEZ) are managed on a common European basis.

EU vessels are all bound by the same rules and regulations as defined under the EU Common Fisheries Policy (CFP) (EC reg. 1380/2013). These rules continue to apply to vessels fishing outside EU waters, including outside the EEZs of the Member States in North Adriatic (although the Italian vessels are shown to not operate beyond the Italian EEZ).

The CFP also defines common objectives and requirements that the Italian, Croatian and Slovenian operators in the fishery must adhere to. These are implemented in each Member State; in the case of Italy via presidential decrees.

The objective of the CFP is to ensure that fisheries and aquaculture are ecologically, economically and socially sustainable. It is also concerned with maintaining employment and the sector's economic viability.

Following the 2002 CFP reform, a new system for limiting the fishing capacity of the EU fleet entered into force on 1 January 2003. This system gave more responsibility to the Member States in achieving a better balance between the fishing capacity of their fleets and the available resources. An Italian Ministerial Circular of 07 October 2004 laid down a plan that aims at reducing fishing effort, particularly by encouraging a reduction in fishing vessels operating within 6 nautical miles of the baseline and using trawl nets.

The CFP is reviewed every 10 years and its most recent revision (EU Reg. 1308/2013) sought to make fisheries more sustainable. The new policy came into force in 2014, including commitments to:

- Fish stocks exploited at Maximum sustainable yield (MSY),
- Greater regionalization (through increased roles for Regional Advisory Councils, including the North Sea Advisory Council (North Sea AC),
- An ecosystem approach to fisheries by ensuring fishing capacity is in line with fishing opportunities and moving more stocks under Long Term Management Plans,
- An obligation to land the fish that is caught (discard ban).

The EC's DG Maritime Affairs and Fisheries has recently published its strategic plan 2016-2020[1], which sets out fisheries management objectives and targets as well as those for marine environmental management.

For Monitoring, Control and Surveillance activities, the EU Member States are required to comply with the agreed control regulations within the CFP framework. Since 2007 these have been coordinated at an EU level by the European Fisheries Control Agency (EFCA). Its goal is to coordinate the fisheries inspection and control operational activities of Member States, and provide assistance to the Member States in their application of the CFP.

The CFP includes requirements for fishing vessels longer than 12 metres to report their logbook data, including catch data, electronically and to have an approved satellite-based vessel monitoring system (VMS) on board. Fishing vessels

[1] http://ec.europa.eu/atwork/synthesis/amp/doc/mare_sp_2016-2020_en.pdf

longer than 18 metres are also required to have an automatic identification system (AIS) on board. From 1 May 2014, AIS must be on board all vessels over 15 metres in length.

As a European Union Member State, Italy has a responsibility to monitor fishing activities and catches, and to share such information via the Data Collection Framework (DCF), which is consistent with commitments under the GFCM.

The vessels are required to report the location and quantity of species retained on a daily basis via an electronic logbook that is transmitted to control authorities. Skippers must also notify authorities ahead of landing their fish and only into designated ports.

European fisheries management also involves taking decisions based on the best available scientific data. The European Commission receives advice from the STECF and various other scientific organisations. In the event of data gaps, the EU has the means to fund studies and projects in the short, medium, and long term with the aim of rectifying the lack of data.

The Commission and MIPAAFT are the major donors of the ADRIAMED FAO regional project. ADRIAMED aims to promote scientific cooperation among the Adriatic nations. Its goal is to improve the management of fishing activities in conformity with the Code of Conduct for Responsible Fisheries (FAO 1995).

STECF can be consulted for the annual stock assessment results and STECF reports and recommendations are publicly available. The outcomes of the deliberations of the EU Fisheries Commission are also publicly available via their communications and regulations.

Management plan under the Mediterranean regulation 1976/2006

The basic EC regulation for the fishing activity in the Mediterranean Sea is Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94.

The Regulation's aim is to establish an effective management framework, through an appropriate sharing of responsibilities between the Community and the Member States. It also extends to the Mediterranean High Sea the strict protection of certain marine species already afforded by Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, which was previously only applicable to marine waters under Member States' sovereignty.

This regulation introduces for the first time the concept of management plans for Mediterranean fisheries, which was present in the basic CFP regulation since 2002. A reference to those plans can be found in the preamble of the regulation, both at community level and national level:

> "*In view of the specific characteristics of many Mediterranean fisheries, which are restricted to certain geographical sub-zones, and taking into account the tradition of applying effort management system at sub-regional level, it is appropriate to provide for the establishment of Community and national management plans, combining in particular effort management with specific technical measures*."

It also introduces a procedure to deal with new fishing protected areas:

> "*By Decision 98/392/EC2 the Council has concluded the United Nations Convention on the Law of the Sea, which contains principles and rules relating to the conservation and management of the living resources of the high seas. In accordance with the rules of that Convention, the Community endeavours to coordinate the management and conservation of living aquatic resources with other coastal States.*"

Chapter VII of Regulation 1967/2006 includes provisions for Management Plans.

Article 18 refers to Community-level management plans that should be deployed to manage specific Mediterranean fisheries, in particular, in areas totally or partially beyond the territorial waters of Member States. Until now, there have not been any such plans at Community level.

Management plans may include measures which go beyond the provisions of this Regulation for the purpose of: increasing the selectivity of fishing gear; reducing discards and limiting the fishing effort. The measures to be included in the management plans had to be proportionate to the objectives, the targets and the expected time frame.

Landing obligation

The European MS exploiting demersal stocks in the Adriatic Sea are mainly Italy, Croatia and Slovenia. In such countries the CFP regulation (EU) No 1380/2013 aims to progressively eliminate discards in all Union fisheries through the introduction of a landing obligation. Article 15(6) empowers the Commission to adopt discard plans by means of a delegated act for a period of no more than three years on the basis of joint recommendations developed by Member States in consultation with the relevant Advisory Councils. In accordance with the joint recommendation provided by the

Mediterranean Advisory Council (MEDAC), the discard plan should cover all catches of species which are subject to minimum sizes as defined in Annex III to Regulation (EC) No 1967/2006.

To avoid disproportionate costs of handling unwanted catches and in accordance with Article 15(5)(c)(ii) of Regulation (EU) No 1380/2013, a *de minimis* exemption from the landing obligation in terms of percentage of the total annual catches of species subject to the landing obligation can be set. The joint recommendations submitted by the concerned Member States support the case for the *de minimis* exemption, due to the increased costs entailed in the management of unwanted catches, both on board (sorting and boxing, storage and conservation) and on land (transport and storage, conservation, marketing and processing or destruction as special waste), compared to the limited and sometimes non-existent economic profit that could be derived from those unwanted catches. The evidence provided by the Member States was reviewed by the Scientific, Technical and Economic Committee for Fisheries (STECF, 2013) which concluded that the joint recommendations contained reasoned arguments related to the increase of costs in handling unwanted catches, supported in some cases with a qualitative assessment of the costs.

GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN (GFCM)

The fishery advisory body in the Mediterranean is the General Fisheries Commission for the Mediterranean and Black Sea (hereafter GFCM). GFCM is a regional fisheries management organization (RFMO) established under the provisions of Article XIV of the FAO Constitution. The GFCM was established as a Council in 1952 and became a Commission with greater powers in 1997.

The main objective of the GFCM is to promote the development, conservation, rational management and best utilization of living marine resources as well as the sustainable development of aquaculture in the Mediterranean, the Black Sea and connecting waters (GFCM area of application).

The GFCM is currently composed of 23 member countries, including Italy, (and also the European Union) who contribute to its autonomous budget to finance its functioning. Membership is open to Mediterranean coastal States and regional economic organizations as well as to United Nations member States whose vessels engage in fishing in its area of application.

The GFCM implements its policy and activities through its Secretariat, based at its headquarters in Rome, Italy. The Commission holds its regular sessions annually and operates during the intersession by means of its committees:

- Scientific Advisory Committee (SAC),
- Committee on Aquaculture (CAQ),
- Compliance Committee (CoC),
- Committee of Administration and Finance (CAF) and their subsidiary bodies, including the ad hoc Working Group for the Black Sea (WGBS),
- GFCM Bureau steers strategic orientations to the Commission and the Secretariat.

The Commission has the authority to adopt binding recommendations for fisheries conservation and management in its area of application and plays a critical role in fisheries governance in the region. In particular, its measures can relate to the regulation of fishing methods, fishing gear and minimum landing size, the establishment of open and closed fishing seasons and areas, and fishing effort control. GFCM Resolution GFCM/37/2013/2 establishes guidelines on the management of fishing capacity in the GFCM area to be followed by contracting parties. The GFCM is one of the few RFMOs worldwide entitled to adopt spatial management measures that regulate or restrict human activities in the high seas, e.g. by introducing closures or prohibiting the use of certain gears.

In cooperation with other RFMOs, the GFCM coordinates efforts by governments to effectively manage fisheries at the regional level following the FAO Code of Conduct for Responsible Fisheries (CCRF). Moreover, it closely cooperates with other international organizations in matters of mutual interest and it benefits from the support of cooperation projects and programmes at the regional and subregional level in order to enhance scientific cooperation and capacity-building among its members. The GFCM also manages a database of national fisheries legislation of member countries[2].

The GFCM has recently amended its legal framework and the Agreement for its establishment with a view to enhancing its efficiency and thus better responding to current and future challenges in the whole region[3].

The decision-making process can be considered to be well developed through the use of the GFCM – Scientific Advisory Committee (SAC) and its integrated advisory structure comprised of the STECF/MEDAC/European Commission, as well as the different interested parties having the option to participate in the decision-making. Advice to the GFCM can only be given by the SAC with other groups able to advise the SAC, but not the GFCM directly (GFCM Fishery Officer,

[2] http://nationallegislation.gfcmsecretariat.org/index
[3] http://www.fao.org/gfcm/background/about/en/

pers comm.). The outcomes of the technical meetings and scientific councils are considered when taking decisions on fisheries management and made available on the GFCM website.

As with the CFP, National management plans must be consistent with GFCM plans, and can only be more restrictive, not. The Compliance Committee meets years to assess how the contracting parties have enforced the agreed plans.

Proposed developments for 2016 include an on-board observer programme (as set out in the GFCM mid-term strategy 2016-2020), which will be GFCM-wide complementing the EU's existing observer and reporting activities under the EU's Data Collection Framework.

ITALIAN MANAGEMENT

The "*Ministero delle politiche agricole alimentari, forestali e del turismo*" (hereafter MIPAAFT) is the Central Government Ministry that is responsible for managing fishing activity in Italy. The "*Direzione generale della pesca marittima e dell'acquacoltura*" (hereater PEMAC) is part of this ministry and is responsible for carrying out this task.

In Italy no legal or natural persons are allowed to engage in commercial fishing without the preliminary registration in the Fishing Company Register. Crew members are also registered in the Seamen Register and ships are recorded in apposite Vessels Register. This obligatory recording regime came from the Navigation Code, Presidential Decree No. 328/1952 of 1952, Law No. 963/1965 of 1965, and Presidential Decree No. 1639/1968 of 1968.

MIPAAF is the competent authority for Monitoring, Control and Surveillance (hereafter MCS).

In order to register, professional seamen must satisfy the following statutory requirements:

a) they must show that fishing is their sole or principal source of income; and

b) they must demonstrate that they have acquired adequate professional knowledge and skills to conduct commercial fishing operations (training course).

Currently this regime is confirmed by the context of the new Legislative Decree 153/2004. The registers are kept by the local offices of the Ministry of Transport (Comando Generale delle Capitanerie di Porto or Coast Guard Authorities) located along the Italian coastline.

The Italian Coast Guard is delegated responsibility by MIPAAFT for fisheries control at sea and on land. It works with the local and national agencies to apply these controls (e.g. with the financial ministry and police to progress prosecutions). On MCS, the Coastguard works with EFCA, Croatian and Slovenian control authorities to implement joint deployment plans such as those for specific fisheries (e.g. Blue Fin Tuna) or more generally (Mediterranean).

It operates the National Fishery Control Centre (Centro Controllo Nazionale Pesca - CCNP); in Rome and 15 regional offices, each with their own assets for aerial, sea and land-based inspections. For fisheries in GSA 18, the Italian Coastguard carries out aerial surveillance, sea-based inspections and port inspections with resources targeted using a risk analysis approach. Statistics on inspections and infringement are not available for the present UoA but only for the whole Italian fleet (see Ecomafie Report 2018 - https://www.legambiente.it/rapporto-ecomafia/). However from the interaction with stakeholder during the site visit was clear that the level of inspection is quite high and the number of infringements is relatively low.

In recent years inspectors have remained on board to contribute to the scientific information for the fishery. By inspectors also observing hauls, this has improved the sampling levels in the quantification of discards as per DCF commitments.

The Italian Government regularly convenes the sector to inform them of the resolutions and changes that affect or may affect the fishery, and they work hand in hand to find the best solution. This also means that the Government has first-hand knowledge of the sector's issues and concerns (MIPAAFT officer pers. comm.).

The fisheries sector participates in the Mediterranean Advisory Council (MEDAC[4]). The MEDAC is made up of European and national organizations representing the fisheries sector (including the industrial fleet, small-scale fisheries, the processing sector and trade unions) and other interest groups (such as environmental organizations, consumer groups and sports/recreational fishery associations) which operate in the Mediterranean area in the framework of the CFP.

The role of MEDAC includes the preparation of opinions on fisheries management and socio-economic aspects in support of the fisheries sector in the Mediterranean, to be submitted to the Member States and the European institutions in order to facilitate the achievement of the objectives of the CFP; MEDAC also proposes technical solutions and suggestions, such as joint recommendations (ex. Art. 18 Reg.1380 / 2013) at the request of the Member States. MEDAC consists of an executive committee and a number of thematic working groups (including Management Plans and GFCM issues) and regional focus groups, (including the Southern Adriatic).

[4] http://en.med-ac.eu/index.php

The Italian fishery sector itself is organized within co-operatives, many of which are also Producer Organisations (an EU-recognized marketing body that often also acts as a representative of its members). Federpesca[5] and Federcoopesca[6] are umbrella bodies that represent these numerous sector organisations at a national level and are members of MEDAC.

The Italian ministerial decree of 30th January 2018, adopts new management plans for demersal stocks in GSA 17-18 (MIPAAFT, 2018a). The decree clearly defines the objective to recover the staus of the demersal stocks within biological limits. In December 2018 the Italian administration (MIPAAFT, 2018b) with a specific directorial decree (Prot. 26510 of 28.12.2018) modified the previous management plans for demersal species GSA 17 and 18. The modified management plan adopts a reduction of fishing effort in 2019 and 2020 of 8% in relation to the mean fishing days observed in the period 2015-2017. Moreover, the modified plan foreseen further changes in fishing effort in the period 2021-2023 in accordance with the evaluation of the stock status observed in 2020.

CO-OPERATION IN FISHERIES MANAGEMENT

Shared management for key stocks has been developed in recent years. The Adriatic Fishing District was founded by the Ministerial Decrees in 2010 and 2012, in accordance with EC legislation enabling the identification of fishing areas which apply rules of common governance. Cross-border projects are ongoing between Italian districts and Croatian and Slovenian fishing communities targeting shared Northern Adriatic resources.

From 2012 the District activities are coordinated by a Management Committee, composed of three Regional Councillors for Fisheries and Aquaculture and a representative of MIPAAFT. A support committee there is a Technical Working Group, under the supervision of an advisory committee; the first is composed of the three regional managers of fisheries and aquaculture, a MIPAAFT representative and observes of Assopesca Molfetta and Cooperativa Santa Lucia in Manfredonia.

The Fishing District has expertise in several areas, including the definition of annual and multi-annual projects; the preparation of Local Management Plans, co-ordination with coastal Institutions, the application of guidelines and monitoring and review of the Local Management Plans.

FISHERY-SPECIFIC MANAGEMENT

For the Adriatic demersal fisheries, GFCM, EU and Italian Ministry has developed a number of measures, which together should be considered the Management Plan for the fishery:

- GFCM defined mesh size regulation for trawl fishery;
- EU Med Reg 1976 defined a MLS for the species;
- Italian Ministry established a managemtn plan for demersal species in place in December 2018, characterized by both technical measures (area closure), effort and capacity reduction.

STECF in 2019 was requested to test the performance of HCRs for Adriatic sea stocks of hake, sole, deep water rose shrimp, red mullet, Nephrops and spottail mantis shrimp. The HCRs were based in (i) effort management and catch limits for sole and Nephrops, (ii) two options of intermediate period effort reductions and (iii) two options of spatial management, the sole sanctuary and 6nm closures. Additionally STECF was required to estimate areas of high persistence of adults or juveniles for the same stocks (see https://stecf.jrc.ec.europa.eu/reports/management-plans).

[5] http://www.federpesca.it
[6] http://www.federcoopesca.it

7.6.2 Principle 3 Performance Indicator scores and rationales

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**	**Yes**
Rationale				

Italy has an effective national legal system and binding procedures listed within comprehensive suite of fisheries legislation that is updated to implement commitments under the EU's CFP and the under the GFCM.
A summary of this legislation is available at:
http://nationallegislation.gfcmsecretariat.org/index.php?title=Italy

As the UoA includes shared stocks that are subject to international cooperation for management, at the SG100 level for scoring issue (a), the following is required:

a. The existence of national laws, agreements and policies governing the actions of the authorities and actors involved in managing the UoA,
b. That binding legislation exists governing comprehensive international cooperation under the obligations of UNCLOS Articles 63(2), 64, 118, 119, and UNFSA Articles 8 and 10, and
c. That cooperation under the RFMO/arrangement, and the actions of the RFMO, shall demonstrably and effectively deliver UNFSA Article 10.

In relation to a: Membership of the EU requires co-operation with other parties to deliver such management outcomes under the Common Fisheries Policy.
In relation to b: Membership of the GFCM also has binding procedures governing co-operation with other parties. General Agreement on Establishment of the GFCM: "*Further recognizing that, under international law, States are required to cooperate in the conservation and management of living marine resources and the protection of their ecosystems"*
In relation to c: General Agreement on Establishment of the GFCM: Further recalling the Agreement for the Implementation of the Provisions of the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks of 4 December 1995, the Agreement to promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas of 24 November 1993, as well as other relevant international instruments concerning the conservation and management of living marine resources, SG 100 is therefore met.

b	Resolution of disputes			
	Guide post	The management system incorporates or is subject by law to a **mechanism** for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes which is **considered to be effective** in dealing with most issues	The management system incorporates or is subject by law to a **transparent mechanism** for the resolution of legal disputes that is appropriate to the context of the fishery and has been

			and that is appropriate to the context of the UoA.	**tested and proven to be effective**.
	Met?	**Yes**	**Yes**	**No**

Rationale

The Italian legal system provides recourse for the resolution of disputes resulting from the management system. This can be applied at a local and national level.
An amendment of the GFCM Agreement was launched in 2013 following a performance review finalised in 2011, which concluded that the Agreement should be amended to clarify the objectives and functions of the GFCM, and strengthen its efficiency. This included the establishment of a well-defined dispute settlement mechanism in case disputes arise between Contracting Parties.
Article 19: Settlement of disputes on the interpretation and application of the Agreement
1. In the event of a dispute between two or more of Contracting Parties concerning the interpretation or application of this Agreement, the Parties concerned shall consult among each other with a view to seeking solutions by negotiation, mediation, inquiry or any other peaceful means of their own choice.
2. If the parties concerned cannot reach agreement in accordance with paragraph 19.1, they may jointly refer the matter to a committee composed of one representative appointed by each of the party of the dispute, and in addition the Chairperson of the Commission. The findings by such committee, while not binding in character, shall constitute the basis for renewed consideration by the Contracting Parties concerned of the matter out of which disagreement arose.
3. Any dispute concerning the interpretation or application of this Agreement not resolved under paragraphs 19.1 and 19.2 may, with the consent in each case of all parties to the dispute, be referred for settlement to arbitration. The results of the arbitration procedure shall be binding upon the parties.
4. In cases where the dispute is referred to arbitration, the arbitral tribunal shall be constituted as provided in the Annex to this Agreement. The Annex forms an integral part of this Agreement.

The Contracting Parties to the GFCM endorsed the "Amended Agreement for the establishment of the General Fisheries Commission for the Mediterranean" at the GFCM 38 Annual Session on 19-24 May 2014.
This meets SG80 requirements, but to date there is no evidence of this dispute resolution system being tested and proven to be effective. So SG100 not 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

The Italian management system is required to observe, but does not formally commit to, the rights of those dependent on fisheries.
The team shall interpret “formally commit” in scoring issue (c) at SG100 to mean that the UoA involved in the fishery can demonstrate a mandated legal basis where rights are fully codified within the fishery management system and/or its policies and procedures for managing fisheries under a legal framework. Such evidence has not been provided and therefore SG100 is not met.

References

GFCM general agreement
Common Fisheries Policy Regulation (EU) no. 1380/2013 (the “Basic Regulation”)
Italian general fisheries laws:
D.P.R. 2 October 1968, n. 1639 - Executive Regulation of the L. 963/1965.
L 41/1982 - Plane for rationalization and develop of maritime fishery (repealed).
D.Lgs. 153/2004 - Application of L. 38/2003 on maritime fisheries.
D.Lgs. 154/2004 - Fisheries and aquaculture modernization.

Overall Performance Indicator (PI) Rationale

Considering the rationales reported for the SI a, b and c the overall performance should be 85.

Draft scoring range	**≥80**
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**	**Yes**
Rationale				

Section 7.6.1 describes the various management, industry and scientific organisations involved in fisheries management. GFCM co-ordinates regional management and scientific data collection to inform fishery management.
The EC through the CFP sets framework for fisheries management, which is then implemented by the Italian ministry (implements the CFP and GFCM binding recommendations).
MEDAC is a multi-stakeholder group that feeds advise into these complementary processes. Federpesca and Federcoopesca are industry bodies representing the Italian catching sector as members of MEDAC.
The functions and relationships between these management, industry and advisory groups are well defined and understood by participants for all areas of responsibility (SG100 is 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				

MEDAC is the main regular consultation process that enables local knowledge from the sector to be considered in development of the management system. However, it is not always explained by the EC how that information is used or not used. Industry stakeholders suggest this is also the case at a national level with Ministry consultation exercises, which are ad hoc exercises associated with the development of new policies prior to the drafting of regulation. However, this is not enough to consider that the management system considers always the information and explains how it is used or not use. Therefore, SG 100 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

The reform of the CFP with a greater emphasis on regionalization and sea basin-level management (enhancing the role of the MEDAC), along with the development of the Better Regulation Guidelines ensures more effective consultation and is a recent improvement in performance that meets SG100.

References

Common Fisheries Policy Regulation (EU) no. 1380/2013 (the “Basic Regulation”)

Overall Performance Indicator (PI) Rationale

Considering the rationales reported for the SI a, b and c the overall performance should be 95.

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

CFP and GFCM have clear long-term objectives that explicitly require the precautionary approach to be followed.
The CFP contains clear long-term objectives that guide decision-making and are consistent with MSC principles. These are presented in section 7.6.1 of the report.
The CFP is explicit in requiring the precautionary approach to guide all management policy, including the national management of vessels in the UoA.
GFCM General Agrement Article 5:
In giving effect to the objective of this Agreement, the Commission shall:
c) apply the precautionary approach in accordance with the 1995 Agreement and the Code of Conduct for Responsible Fisheries. Therefore SG 100 is met.

References

GFCM General Agreement
Common Fisheries Policy Regulation (EU) no. 1380/2013 (the “Basic Regulation”)

Overall Performance Indicator (PI) Rationale

See previous 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**	**Partial**	**Partial**

Rationale

The Italian Management plans for demersal fishery in GSA 17-18 has defined specific long term objectives. However these are only implicit in the Italian management plan and explicit objectives solely focus on the target species and such well-defined and measurable objectives do not extend to MSC P2 aspects.
SG80 is met for P1 aspects, but not for P2 and SG80 is therefore only partially met.

References

Italian Demersal Management Plan GSA 17-18

Overall Performance Indicator (PI) Rationale

According to the rationale explained above the PI should score less than 80 and a condition should be considered here.

Draft scoring range	**60-79**
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				

The GFCM develops binding recommendations that are required to be implemented by the GFCM contracting parties. Those recommendations are drafted based on advice from the Scientific Advisory Council (SAC), which is the only body able to provide advice directly to the GFCM. Submissions from other parties (e.g. European Union) can also be taken into account.
The GFCM checks compliance by those parties required to implement the binding recommendations and reports on the extent to which this has been achieved.

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**	**No**	**No**
Rationale				

It is evident that to date GFCM amendments have occurred annually in order to respond to serious issues in the fishery (SG60 is met), but there is no evidence that serious and other important issues identified in relevant research, monitoring, evaluation and consultation are taken into account. Therefore SG80 is not met.

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

The precautionary approach is used within the advice received from the SAC and STECF, using the best available data collected in the EU-MAP.

	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**	**Yes**
Rationale				

The SAC and General Council reports are published on the GFCM website. Work to date, as stock assessment forms and compliance reports, are examples of comprehensive information on fishery performance and management actions that are readily available.

	Approach to disputes			
e	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				

In working through the SAC and General Council, along with the establishment of specific working groups that involve all contracting parties, the GFCM is proactively attempting to avoid legal disputes through the agreement of advice and resulting decisions.

References

Overall Performance Indicator (PI) Rationale

According to the rationales reported above the PI should score less than 80 and a condition should be considered here.

Draft scoring range	**60-79**
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
a	MCS implementation			
	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**	**Yes**
Rationale				

MCS in the Adriatic is a combination of technical measures such as the requirement for Vessel Monitoring Systems (VMS) on vessels over 12m (all UoA vessels) and e-logbooks. This is supported by at sea inspection, aerial surveillance and port inspection. There is also corroboration of logbook data with sales notes.
Control authorities have a reasonable expectation and confidence that MCS measures are effective. The resources available to and used by those authorities have demonstrated an ability to enforce the regulations applying to the fishery. The Italian Coastguard manages monitoring control and surveillance of Italian vessels along with joint operations with the Croatian control authority.
This is supported by the European Fisheries Control Authority (EFCA) under its Mediterranean Joint Deployment Plan (JDP). The JDP was adopted in May 2014 and has the active participation of Croatia, Cyprus, France, Greece, Italy, Malta, Portugal, Slovenia and Spain. Joint control and inspection activities conducted under the JDP are exhaustive and based on a risk assessment approach. They cover fishing and fishing-related activities including farming, weighing, processing, marketing, transport and storage of fisheries products and sport and recreational fisheries.
The JDP is implemented based on the decisions of the Mediterranean steering group which supervises its overall strategy and orientation. Day-to-day operational activities are implemented through a technical joint deployment group and coordination centres in the Member States concerned (EFCA, 2014).

Relevant statistics on sanctions and inspections are not available for the UoA but only for the whole Italian fleets on "*Ecomafie*" report 2018 (https://www.legambiente.it/rapporto-ecomafia).

b	Sanctions			
	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				

Sanctions are reported to be consistently applied and are thought to provide effective deterrence. However, this has not been clearly demonstrated and SG100 is not met.

c	Compliance			
	Guide post	Fishers are **generally thought** to comply with the management system for the fishery under assessment, including, when required,	**Some evidence exists** to demonstrate fishers comply with the management system under assessment, including, when required, providing	There is a **high degree of confidence** that fishers comply with the management system under assessment, including, providing

		providing information of importance to the effective management of the fishery.	information of importance to the effective management of the fishery.	information of importance to the effective management of the fishery.
	Met?	**Yes**	**Yes**	**No**

Rationale

The statistics on inspection and infringements are not directly available for the present UoA. However, during site visit was evidenced that fishers comply with the management system, but there is not a high degree of confidence about this conclusion. Therefore SG 100 is not met.

d	Systematic non-compliance			
	Guide post		There is no evidence of systematic non-compliance.	
	Met?		**Yes**	

Rationale

Some stakeholders during the site visit did report non-compliance (i.e. fishing within 3 nautical miles), but this was recognized as an occasional occurrence and not indicative of systematic non-compliance

References

EFCA Mediterranean Deployment Plan 2014 http://www.efca.europa.eu/en/content/mediterranean-reports-2014.

Overall Performance Indicator (PI) Rationale

According to the rationales reported above the PI should score above 80.

Draft scoring range	**≥80**
Information gap indicator	**More information sought:** Avaialbility of statistics related to the UoA about penalities and non-compliance

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**	**No**	**No**
Rationale				

The mechanism in place to evaluate some parts of the fishery-specific management system are the scientific working groups (both in the framework of SAC-GFCM and STECF) evaluation the status of the stocks. Therefore SG 60 is met. However, key parts of the management system as the effort reduction foreseen by the Italian Management plan for demersal fishery in GSA 17-18 are not evaluated therefore SG 80 is not met.

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				

The fishery-specific management system is subject to regular internal review of the Italian management plan revised every 5 years, also an external review from STECF in carried out occasionally only. Therefore SG 100 is not met.

References

Overall Performance Indicator (PI) Rationale

According to the rationales reported above the PI should score above 80.

Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

8 Appendices

8.1 Assessment information

8.1.1 Small-scale fisheries

Taking into account the information gathered during the site visit is not possible to conclude that the UoA can be defined as small-scale fishery.

8.2 Evaluation processes and techniques

8.2.1 Site visits

The following site visit were and engagement with stakeholder were carried out:

- 23/05/2019 – Engagement with stakeholder of MIPAAFT and GFCM
- 04/06/2019 – Site visit in Molfetta in Assopesca – Cooperativa Santa Lucia Manfredonia
- 05/06/2019 – Site visit in CNR-IRBIM – discussion about assessment and data collection
- 07/06/2019 – Site visit at MEDAC headquarter Rome.

8.2.2 Recommendations for stakeholder participation in full assessment

The following stakeholder should be involved in the full assessment:

- MIPAAFT.
- GFCM.
- MEDAC.
- NGOs (Oceanan, WWF, GreenPeace, MedReact, etc.).
- COISPA scientists.
- CNR-IRBIM scientists.

8.3 Risk-Based Framework outputs – delete if not applicable

8.3.1 Consequence Analysis (CA)

Table 8.3.1 – CA scoring template

	Scoring element	Consequence subcomponents	Consequence score
Principle 1: Stock status outcome	1.1.1	Population size	100
		Reproductive capacity	
		Age/size/sex structure	
		Geographic range	
Rationale for most vulnerable subcomponent	Fishing activity may produce some minimal impact on population size and none on the reproductive capacity, age/size/sex structure and geographic range.		
Rationale for consequence score	The MEDITS survey data show some fluctuation in population size that are mostly due to natural variability; in general, the biomass of the stock remained constant in the investigated period (see figure 7.4.2.1) Reference: BELCARI P., CUCCU D. (2017) – *Eledone cirrhosa*. In: Sartor P., Mannini A., Carlucci R., Massaro E., Queirolo S., Sabatini A., Scarcella G., Simoni R. (eds), Sintesi delle conoscenze di biologia, ecologia e pesca delle specie ittiche dei mari italiani. Biol. Mar. Mediterr., 22: 72-80. MIPAAFT 2018. Piano di Gestione Nazionale relativo alle flotte di pesca per la cattura delle risorse demersali nell'ambito delle GSA 17 (Mar Adriatico Centro-settentrionale) e GSA 18 (Mar Adriatico Meridionale). 106 pp.		

8.3.2 Productivity Susceptibility Analysis (PSA)

Table 8.3.2 – PSA productivity attributes and scores		
Performance Indicator	1.1.1	
Productivity		
Scoring element (species)	1, *Eledone cirrhosa* [7]	
Attribute	Rationale	Score
Average age at maturity	The horned octopus mature at the end of their first year of life	1
Average maximum age	Life span is known to be between 12 and 18 months.	1
Fecundity	Females produce between 2000 and 9000 eggs	2
Average maximum size Not scored for invertebrates	NA	NA
Average size at maturity Not scored for invertebrates	NA	NA
Reproductive strategy	Horned octopus is a demersal egg layer.	2
Trophic level	It is a predatory and carnivorous species. Both in the Mediterranean and in the Atlantic, its diet is composed of decapod crustaceans.	2
Density dependence Invertebrates only	There is no scientific evidence of depensatory or compensatory dynamics on population size.	2
Susceptibility		
Fishery Only where the scoring element is scored cumulatively	*Bottom trawl in GSA 18*	
Attribute	Rationale	Score
Areal Overlap	The species is exclusively exploited by trawl fisheries. The species is distributed on muddy bottoms from 70 to 700 m depth, that represent the main fishing ground exploited by trawl fisheries.	3
Encounterability	The species is distributed on muddy bottoms from 70 to 700 m depth, that represent the main fishing ground exploited by trawl fisheries.	3
Selectivity of gear type	Small individuals are not caught by trawl nets.	2
Post capture mortality	There is evidence of some released post-capture and survival, although the discards of this species is negligible.	2

[7] Reference:
BELCARI P., CUCCU D. (2015) - *Eledone cirrrhosa*. In: Sartor P., Mannini A., Carlucci R., Massaro E., Queirolo S., Sabatini A., Scarcella G., Simoni R. (eds), Sintesi delle conoscenze di biologia, ecologia e pesca delle specie ittiche dei mari italiani. Biol. Mar. Mediterr., 22: 72-80.

Catch (weight)	920 tons of catches in 2017.	

8.4 Harmonised fishery assessments – delete if not applicable

No other certified fisheries are present in the area. However, cumulative impacts of rose shrimp and horned octopus fishery have to be considered.

9 Corporate branding

This template may be formatted to comply with the Conformity Assessment Body (CAB) corporate identity. The CAB shall ensure that content and structure follow the template.

Examples of appropriate amendments are:

a. A title page with the company logo;
b. A company header and footer used throughout the report;
c. Replacement of font styles;
d. Inclusion of contact details for the CAB in relation to consultation
e. Deletion of any sections that are not applicable, though CABs should leave any sections that will be populated later in the assessment; and,

Deletion of introductory text or instructions.

10 Template information and copyright

This document was drafted using the 'MSC Pre-Assessment Reporting Template v3.1'.

Template version control

Version	Date of publication	Description of amendment
1.0	15 August 2011	Date of first release
1.1	31 October 2013	Updated in line with changes to CR v1.3
2.0	08 October 2014	Confirmed background sections (Section 3) as optional (use of 'may' statements) Modified Table 6.3 to create a simplified scoring sheet to be completed in place of full evaluation tables Made amendments to PIs based on Fishery Standard Review changes (e.g. removed original PIs 1.1.2, 3.1.4 and 3.2.4).
2.1	9 October 2017	Inclusion of optional full evaluation tables
3.0	17 December 2018	Release alongside Fisheries Certification Process v2.1
3.1	29 March 2019	Minor document changes for usability

A controlled document list of MSC program documents is available on the MSC website (msc.org)

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