



5th Conference on Cetacean Conservation in South Mediterranean Countries

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Host Country : Lebanon

Incidental catch of vulnerable species in the Mediterranean: an overview of the “MedBycatch project” and of the results from “SoMFi 2020”

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Mediterranean
Action Plan
Barcelona
Convention



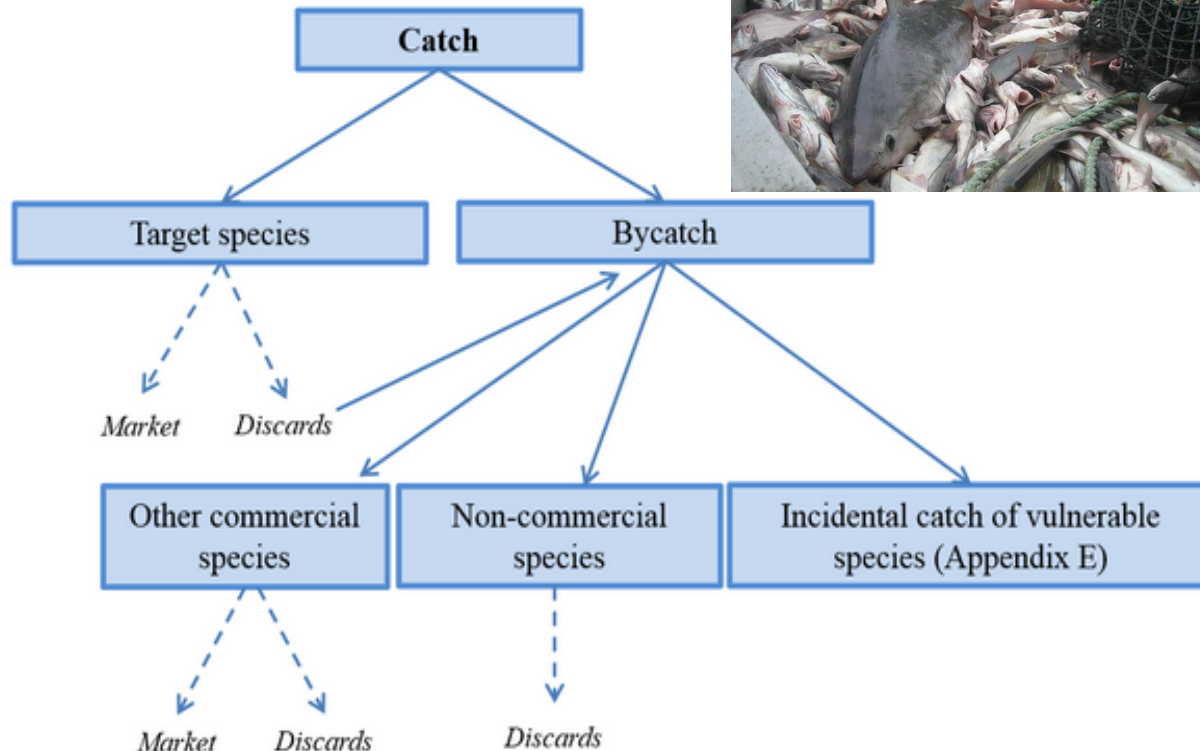
National Council for Scientific Research



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Bycatch from fishing activities represent a complex concept with significant implications for the sector, including from an economical, regulatory and public perception point of view.

It affects the resources harvested through the mortality of juvenile and undersized individuals of the target species (**i.e. discards**) before they reach their optimal size from the point of view of future yield, and from a biodiversity conservation point of view generates a threat to vulnerable species (**i.e. incidental catch**).



To address this issue and better understand bycatch, the GFCM is working with fishers, national and international partners, environmental organizations and researchers to develop new tools and approaches for reducing bycatch and to implement management measures



In relation to vulnerable species, two GFCM resolutions and one recommendation have been recently adopted:

Resolution GFCM/43/2019/6 on the establishment of a set of measures to protect **vulnerable marine ecosystems** formed by cnidarian (coral) communities in the Mediterranean Sea

Resolution GFCM/43/2019/2 on enhancing the conservation of **cetaceans** in the GFCM area of application),

Recommendation GFCM/42/2018/2 on fisheries management measures for the conservation of **sharks and rays** in the GFCM area of application

Complementing two previous decisions relevant to incidental catches:

Recommendation GFCM/36/2012/2 on the mitigation of incidental catches of **cetaceans** in the GFCM area of application

Recommendation GFCM/40/2016/2 on the progressive implementation of data submission in line with the GFCM Data Collection Reference Framework (DCRF)

Furthermore, the GFCM has launched a number of initiatives to improve knowledge on bycatch:

- The implementation of discards monitoring programmes in several countries;
- The participation in the MedBycatch project «*Understanding Mediterranean multi-taxa bycatch of vulnerable species and testing mitigation – a collaborative approach*»
- The involvement in the depredation projects «*Towards solutions to interactions between fisheries and cetaceans in Moroccan and Tunisian waters*»
- The participation in the project namely «*Mitigating dolphin depredation in Mediterranean fisheries – Joining efforts for strengthening cetacean conservation and sustainable fisheries*»

SoMFi, 2020

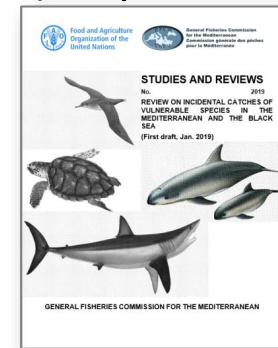


Downloadable at: <http://www.fao.org/documents/card/en/c/cb2429en>

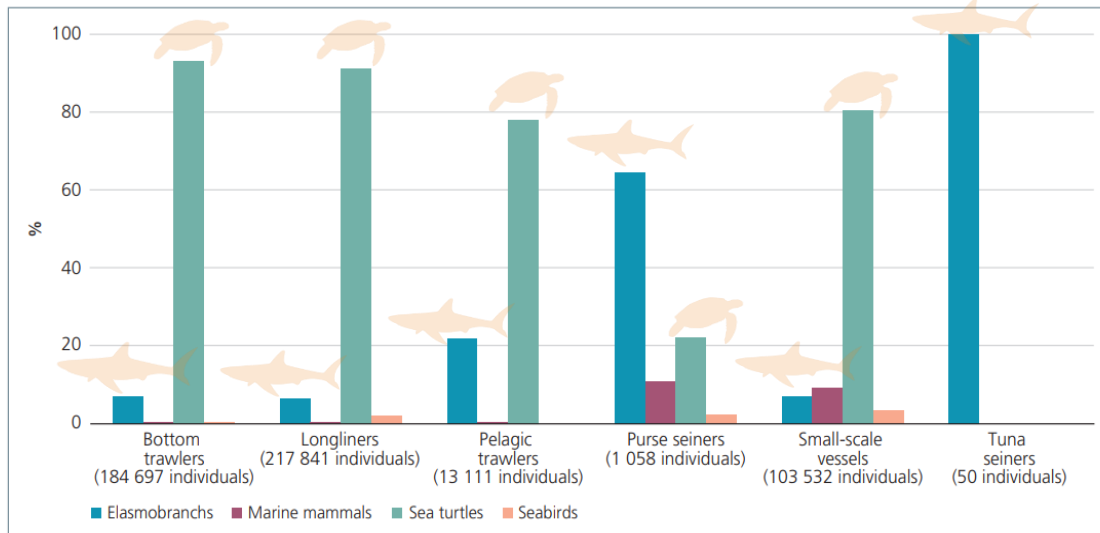
Methodology

The information used to produce this overview has been collected from 2000 through the present, from the following sources:

- i) data from the forthcoming GFCM publication *Regional review of incidental catch of vulnerable species in Mediterranean and Black Sea fisheries* (Carpentieri et al., 2021);
- ii) FAO reports and technical papers;
- iii) the GFCM-Data Collection Reference Framework (DCRF).



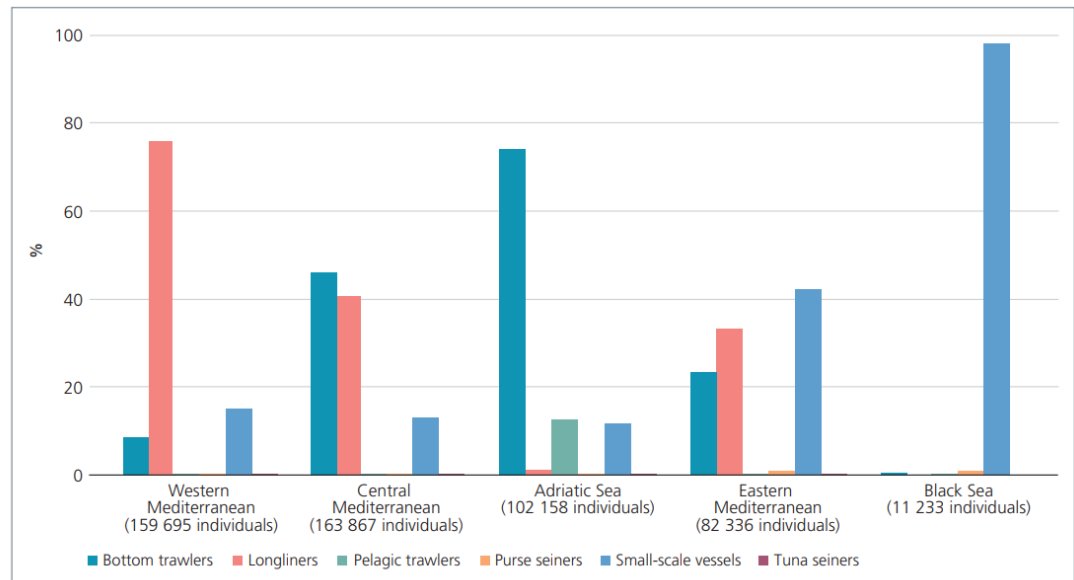
- It is worth noting that the geographical and historical coverage of the data analysed is very variable, and that only studies reporting individual values of vulnerable species were considered.
- Therefore, the data presented could underestimate the real picture and the actual frequency of vulnerable species incidental catch in the GFCM area.
- However, this analysis could provide an important figure for understanding the status and the impact of the different fishing activities on those group of species.



Results

Overall, from a strictly numerical point of view, **sea turtles** (around 89 percent) and **elasmobranchs** (around 8 percent) continue to represent the highest share of reported incidental catch of vulnerable species.

Longliners and bottom trawlers are the most relevant vessel groups affecting conservation-priority species in the whole region (with the exception of the Black Sea)



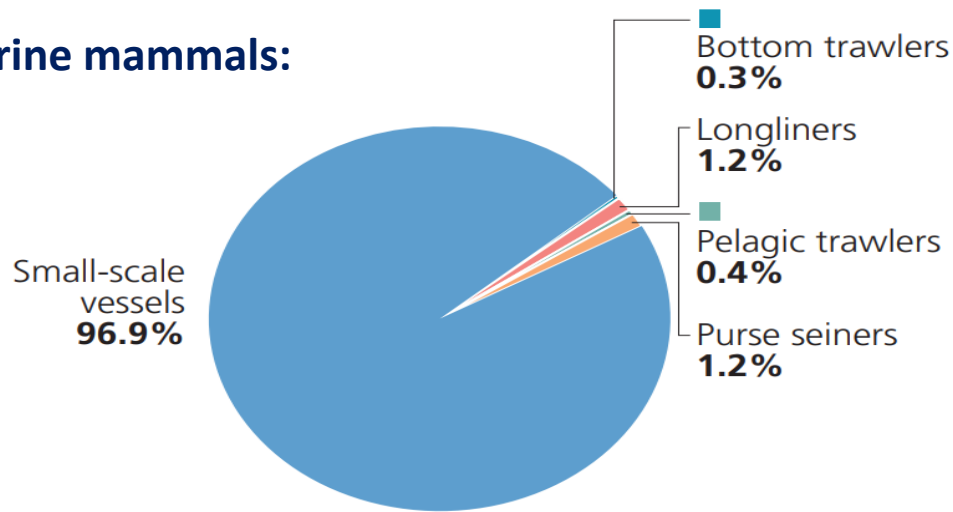
Marine mammals: The relationship between monk seals, cetaceans and fishing activities/fishers has been conflictual over time, more or less so depending on the historical period, type of fishing gear, species involved and socio-economic issues. Nonetheless, from a strictly numerical point of view, the datasets analysed indicate that in recent years, the incidental catch of cetaceans in Mediterranean fisheries has decreased with respect to earlier periods, when marine mammal bycatch, caused mainly by pelagic driftnets, was relevant

The use of these nets was banned in 2005, and since then, only a few studies have reported on the bycatch of marine mammals from other fisheries in the Mediterranean Sea. Over the last decade, studies conducted on incidental catch have declined considerably, while research on direct interactions (i.e. depredation) between marine mammals and fishing gear continues to increase, often with the aim of quantifying its importance and, if possible, also assessing the damage inflicted on fishers from an economic point of view.

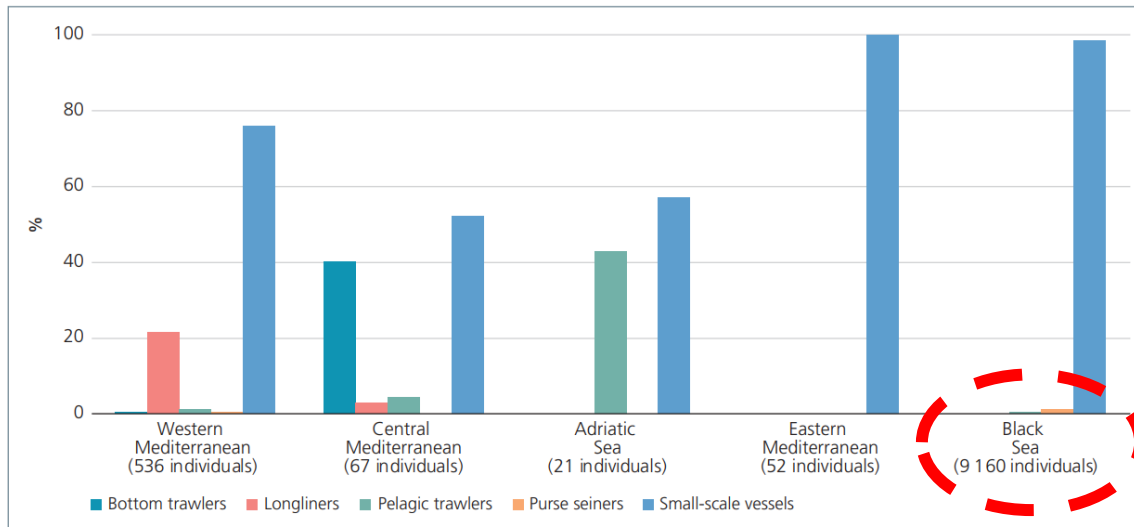
The situation is quite different in the Black Sea, where the coastal fisheries targeting Black Sea turbot continue to have an impact on the cetacean population – which is composed of three endemic species – particularly on the Black Sea harbour porpoise (*Phocoena phocoena relicta*).



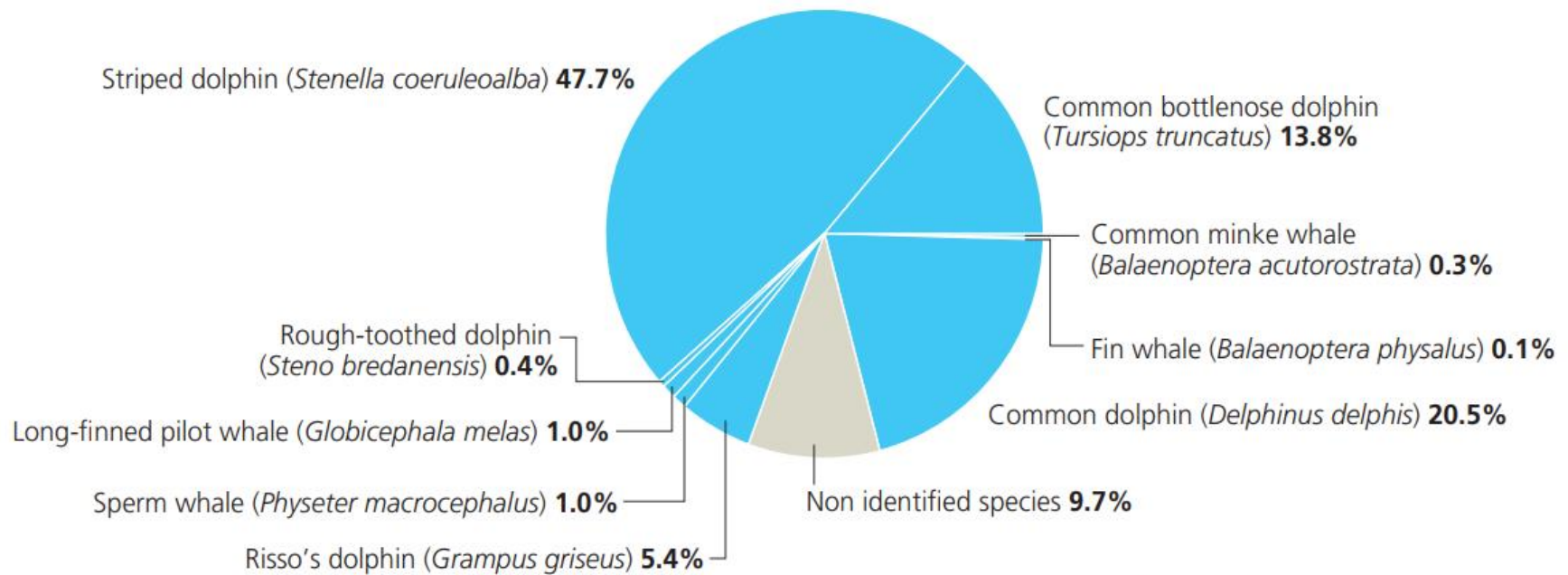
Marine mammals:



Currently, the types of vessel groups with the greatest rates of interactions with marine mammals seem to be those using set gillnets and trammel nets in coastal areas



Marine mammals:



Note: Analysis carried out on 669 individuals.

In terms of species bycatch composition, the recorded species of cetaceans decreased considerably once large driftnets were banned and subsequently dismissed. Currently, medium-small cetacean species, such as the striped dolphin, the bottlenose dolphin and the common dolphin are sporadically found in bycatch reports



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MEDASSET
Mediterranean Association
to Save the Sea Turtles



As confirmed from the Status of Mediterranean & Black Sea fishery (SoMFI, 2020) and from the Regional Review (under publication), there are important gaps in the knowledge of the actual extent of bycatch in the Mediterranean and the Black Sea.

Most of the available data on the bycatch of vulnerable species are derived from opportunistic and irregular surveys.

Data collection has never been standardised in the Mediterranean; very difficult to compare quantitative data and understand impact

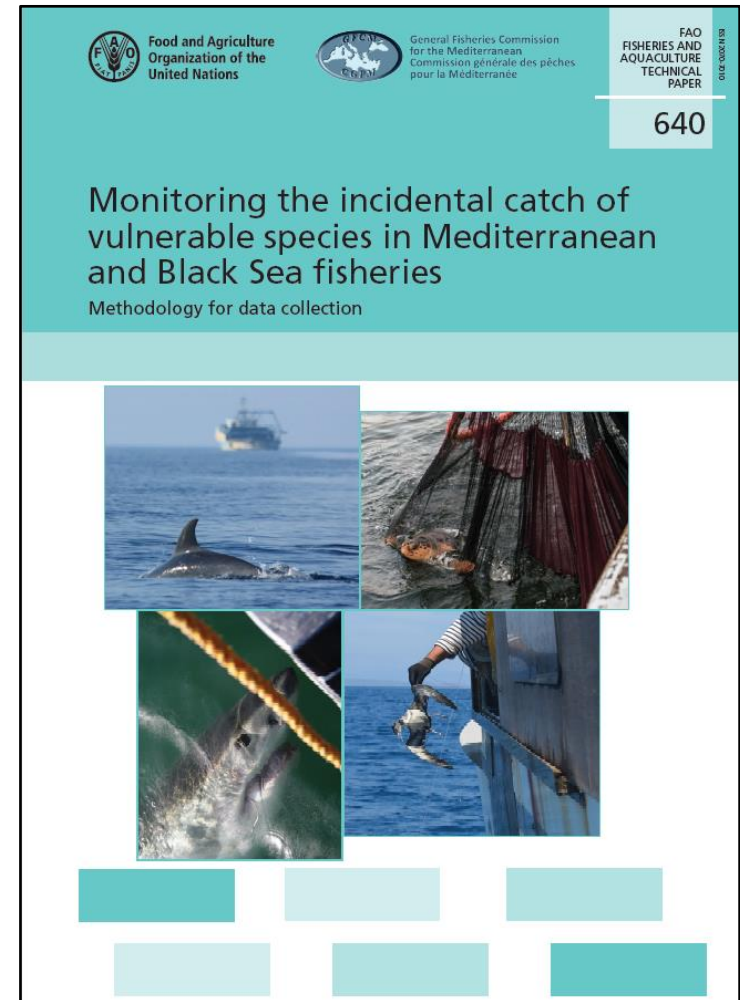
Need to expand incidental catch surveys and standardize practices in order to compare fisheries, as well as test potential methods and eventual mitigation tools.

Monitoring programmes on the incidental catch of vulnerable species are essential and represent a fundamental step towards developing and implementing appropriate conservation and management measures for the protection of vulnerable species with resident populations in the Mediterranean and the Black Sea and the concomitant sustainability of the fisheries sector.



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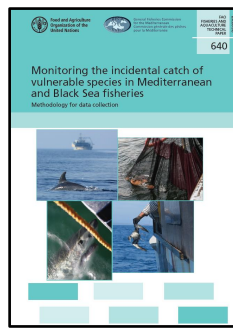
In the framework of the MAVA project **“Understanding Mediterranean multi-taxa ‘bycatch’ of vulnerable species and testing mitigation - a collaborative approach”**, to support Mediterranean countries, and specifically Morocco, Tunisia and Turkey (Italy and Croatia in the second phase), to identify and test measures to reduce impact of fisheries on these marine key species and to develop and implement standardized data collection of bycatch across the Mediterranean, have been developed the following publication



<http://www.fao.org/gfcm/publications/series/technical-paper/640/en/>

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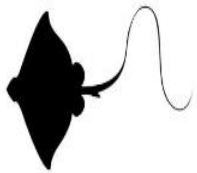
- by observers on board

- by interviews/questionnaires

- by self-sampling

The methodology present in this publication should

- provide **minimum data to be collected** for the different groups of on vulnerable species;
- **standardize the data to be collected**, including the forms to be used to allow repeatability and comparison between fisheries in the region.
- **allows for replicability and comparisons among fisheries across the region**, thus offering a harmonized basis of knowledge, information and evidence for decision-making.



Annex 3.a. Onboard observation - Vessel characteristics

Name of data collector(s)					
Date					
ID fishing trip					
Country					
GSA					
					Notes
Vessel name*					
Fleet segment					
Total length of the vessel					
Power (kW)					
Gross tonnage (GT)					
Port of departure					
Port of arrival					
Gear specifications					
	1 st gear	2 nd gear	3 rd gear	4 th gear	Notes
Gear type					
Net length (m)					
Mesh size (codend - mm)					
Number of hooks					
Bait					
Number of lines					
Number of pots/traps					
Soak time (the time during which the fishing gear is actively in the water)					
Other					
*If available					



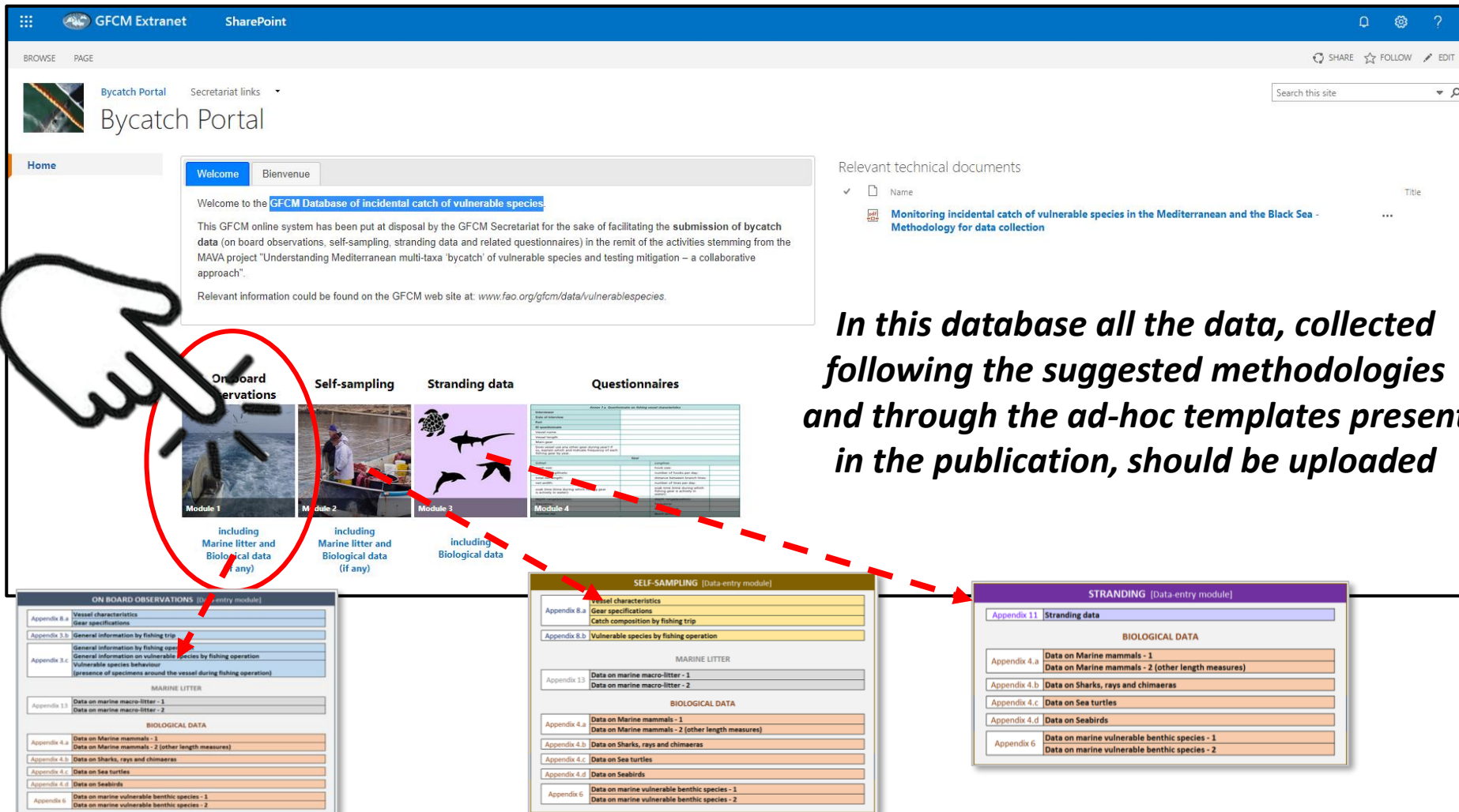
Annex 3.b. Onboard observation - General information by fishing trip

Date			
ID fishing trip			
			Notes
Total number of fishing operations			
Fishing hours			
Bycatch of vulnerable species (Y/N)			
Number of fishing operations with zero catch of vulnerable species			
General information on the catch composition			Notes
Total landing (kg)			
Main commercial species in the landing fraction			
Discard (kg and percentage), in the catch composition	kg	%	Notes
Main species in the discarded fraction			
Marine litter (Y/N)			





One of the scope of the project was also to develop and maintain a pan-Mediterranean bycatch database hosted by GFCM.



GFCM Extranet SharePoint

BROWSE PAGE

Bycatch Portal Secretariat links

Search this site

Home

Welcome Bienvenue

Welcome to the [GFCM Database of incidental catch of vulnerable species](#).

This GFCM online system has been put at disposal by the GFCM Secretariat for the sake of facilitating the submission of bycatch data (on board observations, self-sampling, stranding data and related questionnaires) in the remit of the activities stemming from the MAVA project "Understanding Mediterranean multi-taxa 'bycatch' of vulnerable species and testing mitigation – a collaborative approach".

Relevant information could be found on the GFCM web site at: www.fao.org/gfcm/data/vulnerablespecies.

Relevant technical documents

✓ Name Title

[Monitoring incidental catch of vulnerable species in the Mediterranean and the Black Sea - Methodology for data collection](#)

On board observations Self-sampling Stranding data Questionnaires

Module 1 Module 2 Module 3 Module 4

Including Marine litter and Biological data (if any)

Including Marine litter and Biological data (if any)

Including Biological data

ON BOARD OBSERVATIONS [Data-entry module]

Appendix 8.a Vessel characteristics (gear specifications)

Appendix 3.b General information by fishing trip

Appendix 3.c General information on vulnerable species by fishing operation

Appendix 3.d Vulnerable species behaviour (presence of specimens around the vessel during fishing operation)

MARINE LITTER

Appendix 11 Data on marine macro-litter - 1

Data on marine macro-litter - 2

BIOLOGICAL DATA

Appendix 4.a Data on Marine mammals - 1

Data on Marine mammals - 2 (other length measures)

Appendix 4.b Data on Sharks, rays and chimaeras

Appendix 4.c Data on Sea turtles

Appendix 4.d Data on Seabirds

Appendix 6 Data on marine vulnerable benthic species - 1

Data on marine vulnerable benthic species - 2

SELF-SAMPLING [Data-entry module]

Appendix 8.a Vessel characteristics

Gear specifications

Catch composition by fishing trip

Appendix 8.b Vulnerable species by fishing operation

MARINE LITTER

Appendix 11 Data on marine macro-litter - 1

Data on marine macro-litter - 2

BIOLOGICAL DATA

Appendix 4.a Data on Marine mammals - 1

Data on Marine mammals - 2 (other length measures)

Appendix 4.b Data on Sharks, rays and chimaeras

Appendix 4.c Data on Sea turtles

Appendix 4.d Data on Seabirds

Appendix 6 Data on marine vulnerable benthic species - 1

Data on marine vulnerable benthic species - 2

STRANDING [Data-entry module]

Appendix 11 Stranding data

BIOLOGICAL DATA

Appendix 4.a Data on Marine mammals - 1

Data on Marine mammals - 2 (other length measures)

Appendix 4.b Data on Sharks, rays and chimaeras

Appendix 4.c Data on Sea turtles

Appendix 4.d Data on Seabirds

Appendix 6 Data on marine vulnerable benthic species - 1

Data on marine vulnerable benthic species - 2

In this database all the data, collected following the suggested methodologies and through the ad-hoc templates present in the publication, should be uploaded



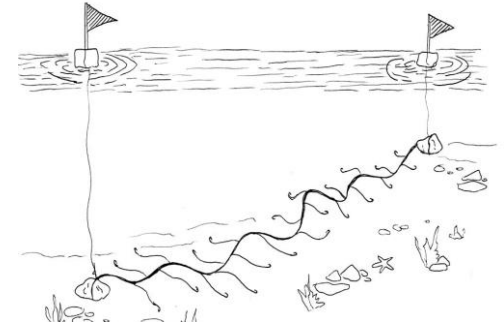
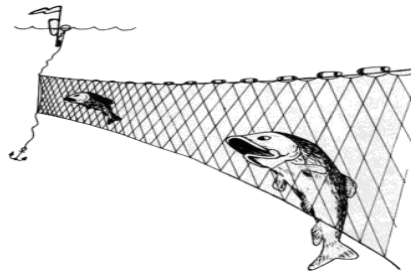
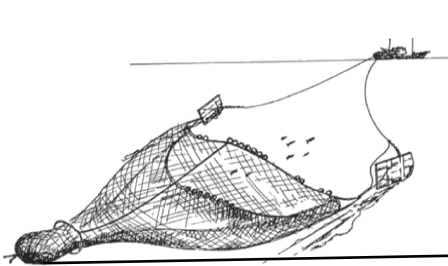
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Morocco: 909 observations onboard and 1890 questionnaires were carried out in GSA 14.

Tunisia: 22 ports were sampled, a total of 190 observations onboard and 752 questionnaires have been implemented in GSA 12 and GSA 13.

290 observations onboard and 826 questionnaires were carried out in GSA 14.

Turkey: the observer programme was carried out across 20 ports and 2 GSAs (GSA 22 and GSA 24). 92 On-board observations were carried out across 13 ports during the trawling season, which is from September to April; 2160 questionnaires across 20 ports were carried out all year round.



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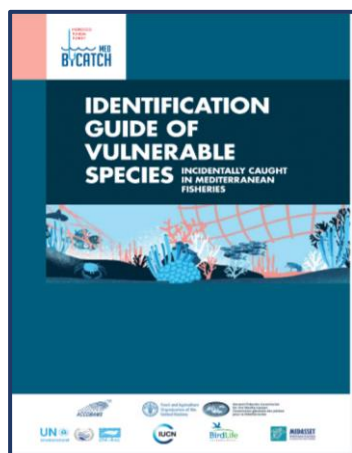
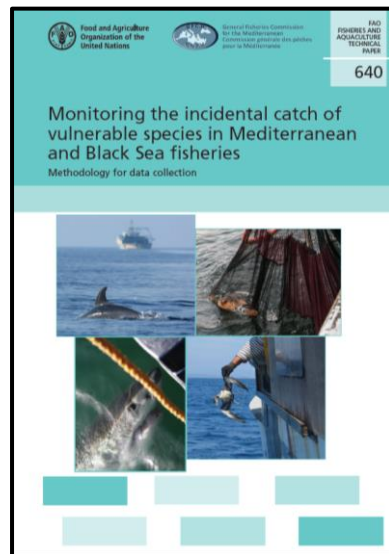
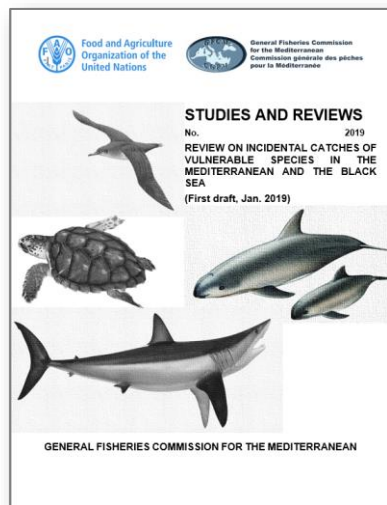
Country	GSA	Group of vulnerable species concerned	Main species concerned	The vessel group interested	The fishing gear	Area	Period	Mitigation Measure
Tunisia	14	Elasmobranchs	Sandbar shark (<i>Carcharhinus plumbeus</i>)	Small-scale vessels	Longliners (Bottom longliners for groupers)	Zarzis/Djerba	April - July	Spatio-temporal measures (Depth+different hooks+ nature of the bait)
Tunisia	14	Elasmobranchs, Sea turtles	Blackchin guitarfish (<i>Rhinobathos cemiculus</i>) Loggerhead turtle (<i>Caretta caretta</i>)	Small-scale vessels	Gillnet (Garracia)	Zarzis/Djerba	April - July	Spatio-temporal measures (depth/period) + soak time
Tunisia	14	Elasmobranchs	Blackchin guitarfish (<i>Rhinobathos cemiculus</i>)	Small-scale vessels	Longliners (bottom longline for grouper)	Zarzis/Djerba	April - July	Spatio-temporal measures (Depth + different hooks and baits)
Tunisia	14	Elasmobranchs, Sea turtles		Trawlers	Bottom trawlers for groupers	Whole GSA 14	Whole year	Grid & spatio-temporal measures
Turkey	22 & 24	Elasmobranchs, Sea turtles	Guitarfishes, sting rays, Butterfly ray	Trawler >12m	Bottom Otter Trawls	Whole GSA 24 Muğla (GSA 22)	Sept - April	Flexible Turtle Excluder Device (TED)
Turkey	22 & 24	Sea birds		Polyvalent <12m	Longliners	GSA22&24		Tori line
Turkey	22 & 24	Sea Turtles		Polyvalent <12m	Static Nets	Muğla (GSA 22) Antalya & Mersin (GSA 24)		Green LED lights
Turkey	22 & 24	Elasmobranchs, Sea turtles		Polyvalent <12m	Longliners	Muğla (GSA 22) Antalya & Mersin (GSA 24)	Spring - Summer	Circle hooks

MEDBYCATCH PROJECT 2ND PHASE: MITIGATION TRIALS

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Thank you for your attention