



# EMBARCA, Rumo à Pesca Sustentável

## Stage 1: Deeper Mapping



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| <b>Date</b>       | May 2024  |
| <b>Authors:</b>   | Macarena García, Claudia Correia and Natalia Mora |
| <b>Reviewers:</b> | Lisa Borges e Miguel Gaspar                       |
| <b>Project:</b>   | EMBARCA, Rumo à Pesca Sustentável                 |

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## EXECUTIVE SUMMARY:

- The 'Embarca Project' is part of the Pathway to Sustainability program of the MSC, which aims to help fisheries address environmental impacts, as well as information and management gaps, by providing tools, training materials and a framework for improving environmental performance.
- This Deeper Mapping stage provides a more detailed level of description of the Portuguese fisheries than that provided in the Mapping report. Although the focus is on the 30 fisheries which have been selected by the MSC for more detailed analysis at this stage of the project, there remains some overarching description of the fisheries, the ecosystem and the management system which are more widely applicable.
- A separate supporting output of this stage consists of a presentation based on slides for the 30 UoAs.
- This Deeper Mapping includes a description of the 30 UoAs and the identification of the main weaknesses and strengths against the 3 MSC Principles presented as traffic light colour codes (Green = good /no barriers; Yellow = fair/minor barriers; and Red = bad/ significant barriers). Though it provides a useful resource for a future pre-assessment or full assessment exercise, it does not make any predictions of likely scores against any MSC performance indicator.
- The next stage of Project (Stage 2) will be to undertake 3 MSC pre-assessment of Portuguese fisheries. The selection of these fisheries will be undertaken by MSC.

## BACKGROUND GLOSSARY

|                          |  |
|--------------------------|--|
| <b>ACCOBAMS</b>          | Agreement on the Conservation of Cetaceans in the Black Sea, Mediterranean Sea and Contiguous Atlantic Area.   |
| <b>AED</b>               | Automatic Electronic Device  |
| <b>ANP</b>               | Associação Natureza Portugal (Nature Association Portugal)   |
| <b>APA</b>               | Agência Portuguesa do Ambiente (Portuguese Environmental Agency)   |
| <b>APASCOBANS</b>        | Agreement on the Conservation of Small Cetaceans of the Baltic, Northeast Atlantic, Irish and North Seas   |
| <b>CAB</b>               | Conformity Assessment Body   |
| <b>CCMAR</b>             | Centro de Ciências do Mar da Universidade do Algarve (Center of Marine Science of the University of Algarve)   |
| <b>CECAF</b>             | Fishery Committee for the Eastern Central Atlantic   |
| <b>CESAM</b>             | Centro de Estudos do Ambiente e do Mar, Universidade de Aveiro (Center for Environmental and Marine Studies, University of Aveiro)   |
| <b>CETEMARES R&amp;D</b> | Centro, Formação e Divulgação do Conhecimento Marítimo, Escola Superior de Turismo e Tecnologia do Mar, Peniche - Polytechnic Institute of Leiria (Center, Training and Dissemination of Maritime knowledge, School of Tourism and Technology of the Sea, Peniche - Polytechnic Institute of Leiria) |
| <b>CFP</b>               | Common Fisheries Policy  |
| <b>CITES</b>             | Convention on International Trade in Endangered Species of Wild Fauna and Flora  |
| <b>CMS</b>               | Convention on the Conservation of Migratory Species of Wild Animals  |
| <b>DGRM</b>              | Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos (Directorate-General for Natural Resources, Safety, and Maritime Services)  |
| <b>DQEM</b>              | Diretiva Quadro Estratégia Marinha (Marine Strategy Framework Directive)   |
| <b>EEA</b>               | European Environment Agency  |
| <b>EEZ</b>               | Exclusive Economic Zone  |
| <b>EMODnet</b>           | European Marine Observation and Data Network   |
| <b>ETP</b>               | Endangered, Threatened, and Protected Species  |
| <b>EU</b>                | European Union   |
| <b>FAO</b>               | UN Food and Agriculture Organization   |
| <b>ICCAT</b>             | International Commission for the Conservation of Atlantic Tunas  |
| <b>ICES</b>              | International Council for the Exploration of the Sea   |
| <b>ICNF</b>              | Instituto da Conservação da Natureza e Florestas (Institute for Nature and Forest Conservation)  |

|                   |  |
|-------------------|--|
| <b>INE</b>        | Instituto Nacional de Estatística (National Institute of Statistics)   |
| <b>IPMA</b>       | Instituto Português do Mar e da Atmosfera (Portuguese Institute for the Sea and the Atmosphere)  |
| <b>IUCN</b>       | International Union for Conservation of Nature   |
| <b>MARE</b>       | Centro de Ciências do Mar e do Ambiente (Center of Marine and Environmental Sciences)  |
| <b>MCS</b>        | Monitoring, Control, and Surveillance  |
| <b>MPAs</b>       | Marine Protected Areas   |
| <b>MSC</b>        | Marine Stewardship Council   |
| <b>MSE</b>        | Management Strategy Evaluation   |
| <b>MSFD</b>       | Marine Strategy Framework Directive  |
| <b>MSY</b>        | Maximum Sustainable Yield  |
| <b>NAFO</b>       | Northwest Atlantic Fisheries Organization  |
| <b>NEAFC</b>      | Northeast Atlantic Fisheries Commission  |
| <b>NUTS</b>       | Nomenclatura das Unidades Territoriais para Fins Estatísticos (Nomenclature of Territorial Units for Statistics)                             |
| <b>OP</b>         | Organização de Produtores (Producer Organizations)   |
| <b>OSPAR</b>      | Oslo-Paris Convention (for the Protection of the Marine Environment of the North-East Atlantic)  |
| <b>PONG-Pesca</b> | Plataforma de Organizações Não Governamentais Portuguesas sobre a Pesca (Platform of Portuguese Non-Governmental Organizations on Fisheries) |
| <b>PRI</b>        | Point where Recruitment would be Impaired  |
| <b>RNAMP</b>      | National Network of Marine Protected Areas (Rede Nacional de Áreas Protegidas)   |
| <b>RFMO</b>       | Regional Fisheries Management Organization   |
| <b>STECF</b>      | Scientific, Technical and Economic Committee for Fisheries   |
| <b>SWWAC</b>      | Southwestern Waters Advisory Council   |
| <b>TAC</b>        | Total Allowable Catch  |
| <b>UoA</b>        | Unit of Assessment   |
| <b>UoC</b>        | Unit of Certification  |
| <b>VMEs</b>       | Vulnerable Marine Ecosystems   |
| <b>VMS</b>        | Vessel Monitoring System   |
| <b>WGBIE</b>      | ICES Working Group on Bycatch of Protected Species   |
| <b>WGDEEP</b>     | ICES Working Group on the Biology and Assessment of Deep-sea Fisheries Resources   |
| <b>WGIPS</b>      | ICES Working Group on International Pelagic Surveys  |

|                  |   |
|------------------|---|
| <b>WGHANSA</b>   | ICES Working Group on Harvesting and Assessment of New and Small-scale Atlantic Fisheries |
| <b>WGWIDE</b>    | ICES Working Group on Widely Distributed Stocks   |
| <b>WKANGHAKE</b> | ICES Working Group on Anchovy and Hake  |
| <b>WWF</b>       | World Wildlife Fund   |

## 1. Introduction

The 'Embarca Project' is part of the Pathway to Sustainability program of the MSC, which aims to help fisheries address environmental impacts, as well as information and management gaps, by providing tools, training materials and a framework for improving environmental performance.

The objectives of this project are:

- Use the MSC Fisheries Standard V2.01, as well as a participatory multistakeholder approach, to identify potential gaps and foster improvement processes towards environmental sustainability in Portuguese fisheries.
- Potentially deliver additional interest in MSC certification as an end goal for Portuguese fisheries.
- By identifying gaps in fisheries and defining action plans for improvement, provide fishers and fishery stakeholders roadmaps towards environmental sustainability.
- Build stakeholder engagement and improve the understanding of Portuguese fisheries and drive performance improvements in the selected fisheries.

The scope of this analysis includes all commercial fisheries operating within ICES Subarea 9a (Portuguese Continental Shelf).

Nowadays, the project consists of two stages: Stage I, which involves the mapping of fisheries in the Portuguese continental shelf, and Stage II, focusing on pre-assessments against the MSC Fisheries Standard. The mapping includes a list of all UoAs, with additional information on management systems and landing volumes, operating in the area of scope.

From the entire UoA list presented in the previous mapping report, MSC has chosen 30 UoAs for deeper analysis that includes information about the gear types, landing data, market details, regulatory measures, management bodies, fishery representatives, stakeholders, and ongoing improvement projects, providing a comprehensive understanding of the fishery's key aspects and initiatives. Moreover, this deeper analysis includes an analysis of the main weaknesses and strengths against the 3 MSC Principles should be broadly identified for each UoA. The results are expressed as traffic light colour codes (Green = Good/no barriers; Yellow = fair/minor barriers; and Red = bad/significant barriers) and summarized by Principle for each UoA.

In the subsequent project stage (Stage II), 3 of these UoAs will go on to be subject to a full MSC pre-assessment exercise. The objective of this Deeper Mapping exercise is therefore to inform this subsequent short-listing exercise and to provide a factual basis on which to draw as part of the later MSC pre-assessment exercise. To enable this, the report therefore includes:

- An overview of the key characteristics of the ecosystem and habitats relevant to the area under scope
- An overview of the fisheries governance and management framework.
- An overview of the ETP species in Portugal, considering the national legislation and international agreements.
- An in-depth description of the 30 UoAs and an analysis of the main weaknesses and strengths expressed as traffic light colours (see **Annex 7.2, Table 7.2.2**).

## 2. Selected Fisheries

The 30 selected UoAs to undergo the deeper mapping phase are presented in **Table 2.1**.

Table 2.1. List of the 30 selected UoAs (For more information see **Annex 7.2.**)

| Nº | Common name (in Portuguese and English)                   | Scientific name               | Stock Reference                | Fishing gear  |
|----|---|-------------------------------|--------------------------------|---|
| 1  | Biqueirão<br>European anchovy                             | <i>Engraulis encrasicolus</i> | ane.27.9a                      | Purse seine   |
| 2  | Carapau<br>Atlantic horse mackerel                        | <i>Trachurus trachurus</i>    | hom.27.9a                      | Trawler   |
| 3  | Carapau<br>Atlantic horse mackerel                        | <i>Trachurus trachurus</i>    | hom.27.9a                      | Purse seine   |
| 4  | Lagostim<br>Norway lobster                                | <i>Nephrops norvegicus</i>    | nep.fu.2829 (NUTSII - Algarve) | Trawler   |
| 5  | Linguado-legítimo<br>Common sole                          | <i>Solea solea</i>            | sol.278c9a                     | Multipurpose (Bottom gillnets) *                        |
| 6  | Peixe-espada-preto<br>Black scabbardfish                  | <i>Aphanopus carbo</i>        | bsf.27.nea                     | Multipurpose (Bottom longline) *                        |
| 7  | Pescada-branca<br>European hake                           | <i>Merluccius merluccius</i>  | hke.27.8c9a                    | Trawler   |
| 8  | Pescada-branca<br>European hake                           | <i>Merluccius merluccius</i>  | hke.27.8c9a                    | Multipurpose (Bottom longline) *                        |
| 9  | Robalo<br>European seabass                                | <i>Dicentrarchus labrax</i>   | bss.27.8c9a                    | Multipurpose (Surface longline/<br>Gillnets and Cane) * |
| 10 | Salmonete-legítimo<br>Surmullet                           | <i>Mullus surmuletus</i>      | mur.27.9.a                     | Multipurpose  |
| 11 | Tamboril<br>Angler, European angler or<br>common monkfish | <i>Lophius piscatorius</i>    | mon.27.8c9a                    | Trawler   |
| 12 | Tamboril<br>Angler, European angler or<br>common monkfish | <i>Lophius piscatorius</i>    | mon.27.8c9a                    | Multipurpose (Bottom gillnets) *                        |
| 13 | Tamboril-preto<br>Blackbellied angler                     | <i>Lophius budegassa</i>      | ank.27.8c9a                    | Trawler   |
| 14 | Amêijoia-branca<br>Surf Clam                              | <i>Spisula solida</i>         | ulo.27.9a                      | Multipurpose (Dredgers)*                                |
| 15 | Besugo<br>Axillary seabream                               | <i>Pagellus acarne</i>        | n.a.                           | Multipurpose (Gillnets)*                                |
| 16 | Camarão-vermelho<br>Red prawn                             | <i>Aristeus antennatus</i>    | n.a.                           | Trawler   |
| 17 | Carapau-negrão<br>Blue jack mackerel                      | <i>Trachurus picturatus</i>   | n.a.                           | Trawler   |
| 18 | Carapau-negrão<br>Blue jack mackerel                      | <i>Trachurus picturatus</i>   | n.a.                           | Purse seine   |
| 19 | Cavala<br>Atlantic chub mackerel                          | <i>Scomber colias</i>         | n.a.                           | Purse seine   |
| 20 | Choco<br>Common cuttlefish                                | <i>Sepia officinalis</i>      | n.a.                           | Multipurpose (Cages and Gillnets) *                     |
| 21 | Conquilha<br>Truncate donax                               | <i>Donax trunculus</i>        | dxl.27.9a                      | Multipurpose (Dredgers)*                                |
| 22 | Corvina-legítima  | <i>Argyrosomus regius</i>     | n.a                            | Multipurpose (Gillnets)*                                |



| Nº | Common name (in Portuguese and English) | Scientific name                 | Stock Reference | Fishing gear                |
|----|---|---------------------------------|-----------------|-----------------------------|
|    | Mulloway                                |                                 |                 |                             |
| 23 | Espadarte<br>Swordfish                  | <i>Xiphias gladius</i>          | n.a             | Multipurpose (Longline)*    |
| 24 | Faneca<br>Pouting                       | <i>Trisopterus luscus</i>       | n.a.            | Trawler                     |
| 25 | Faneca<br>Pouting                       | <i>Trisopterus luscus</i>       | n.a.            | Multipurpose (Gillnets)*    |
| 26 | Gamba-branca<br>Deep-water rose shrimp  | <i>Parapenaeus longirostris</i> | dps.27.9a       | Trawler                     |
| 27 | Lula<br>European squid                  | <i>Loligo vulgaris</i>          | n.a.            | Trawler                     |
| 28 | Lula<br>European squid                  | <i>Loligo vulgaris</i>          | n.a.            | Multipurpose (Gillnets)*    |
| 29 | Polvo nep<br>Octopus vulgaris           | <i>Octopus vulgaris</i>         | n.a.            | Multipurpose (Pots/cages) * |
| 30 | Navalha/Lingueirão<br>Razor clam        | <i>Ensis siliqua</i>            | n.a.            | Multipurpose (Dredgers)*    |

\*Based on the team's knowledge of these fisheries, the most frequently used type of fishing gear is noted in brackets.

### 3. Marine environment and ecosystem

#### 3.1. Description of Environment and Ecosystem

The area of this study is part of the Bay of Biscay and the Iberian Coast ecoregion, covering the Southwestern and Eastern Atlantic Ocean waters of the EU. This ICES ecoregion includes waters from Brittany to the Gulf of Cadiz (**Figure 3.1.1**).

The Western Iberian Shelf is characterized by a narrow shelf with upwelling events in summer and the Iberian Poleward Current in winter. Off Galicia (at its northern limit) the input of freshwater from rivers and estuaries forms the Western Iberian Buoyant Plume, which is an important shaping event under downwelling-favourable winds.

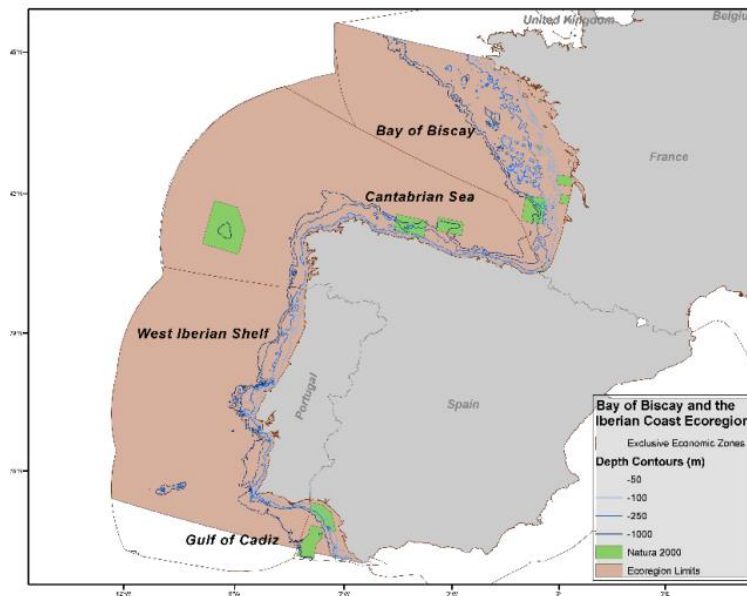


Figure 3.1.1 The Bay of Biscay and the Iberian Coast ecoregion, showing EEZs and larger offshore Natura 2000 sites. Source: [Bay of Biscay and the Iberian Coast ecoregion description \(ices.dk\)](http://ices.dk)

To safeguard and maintain the marine environment, Portugal has adopted the Marine Strategy Framework Directive (DQEM, by its acronym in Portuguese)<sup>1</sup>, implemented in national legislation through Decree-Law No. 108/2010 of 13th October in its latest<sup>2</sup> version, sets up a European framework for the protection and preservation of the marine environment, with the objective of achieving or maintaining the marine environment in a Good Environmental Status.

The directive mandates that each Member State develops a marine strategy every six years, applying to the marine waters, seabeds, and subsoils within its jurisdiction. This strategy must consider the particular region or sub-region in which it is situated.

Focusing on oceanographic characteristics, the Marine Strategy [7] outlines that the sea agitation noticed in the continental division is strongly influenced by the atmospheric circulation patterns over the North Atlantic, predominantly due to the Northwestern wave movements. An evident escalation

<sup>1</sup> Diretiva 2008/56/CE, do Parlamento e do Conselho, de 17 de junho, alterada pela Diretiva (UE) 2017/845 da Comissão, de 17 de maio

<sup>2</sup> Decreto-Lei n.º 108/2010, de 13 de outubro, alterado pelo Decreto-Lei n.º 201/2012, de 27 de agosto e alterado e republicado pelo Decreto-Lei n.º 136/2013, de 7 de outubro, alterado pelo Decreto-Lei n.º 143/2015, de 31 de julho e pelo Decreto-Lei n.º 137/2017, de 8 de novembro

in roughness is observed along the northern western coast, decreasing in intensity from the North towards the South. The findings distinctly reveal a seasonal trend across the coastline, with the winter season experiencing heightened wave heights and periods directed between Southwest and Northwest. Conversely, during the summer, both wave heights and periods diminish, with directions altering to between West-North-West and North-North-West, suggesting a shift towards a more northerly bearing.

Additionally, the surface temperature minimums in Sines (13°C) and Faro (14°C) align with the characteristics of the subtropical branch of the Eastern Central North Atlantic Water, which tends to cover the entire surface column during winter in each area. In Leixões, the minimum temperature (11°C) also reflects the influence of river runoff in winter. Conversely, the maximum temperature values are largely influenced by the interplay between solar radiation and wind effects, leading to a similar equilibrium in Leixões and Sines. In Faro, however, the peak temperatures are linked to a secondary distribution pattern, highlighting the impact of the Counter Coastal Current [6].

Furthermore, the morphological characteristics of the seabeds in national marine waters exhibit great diversity, in terms of both the range of depths involved, extending to nearly 6000 m, and the types of structures present, which include, among others, the geological continental shelf, submarine mountains, and abyssal plains. The cartography of surface sediments and rocky outcrops, obtained under the SEPLAT Program, identifies the following sediment cover areas:

- North Platform – from the northern border to the Nazaré submarine canyon;
- Esporão da Estremadura-is a promontory located on the Iberian West Bank, between Cape Carvoeiro and Cabo da Roca;
- Tagus Estuary – between the latitude of Cape Raso and Cape Espichel;
- Southwest Platform – between Cape Espichel and Cape St. Vincent;
- Algarve Platform – between Cape St. Vincent and the mouth of the Guadiana River.

### 3.2. Endangered Threatened and Protected (ETP) species

According to the MSC Fisheries Standard v2.01, Section SA3.1, ETP species are identified and classified through a comprehensive approach. This includes species recognized by national ETP legislation as requiring protection. Furthermore, the standard incorporates species listed in key binding international agreements. This list encompasses species under Appendix 1 of the Convention on International Trade in Endangered Species (CITES). It also includes species protected under the Convention on Migratory Species (CMS) including several agreements. Additionally, the standard classifies out-of-scope species (i.e. amphibians, reptiles, birds, and mammals) listed as vulnerable, endangered, or critically endangered on the IUCN Redlist as ETP species.

#### 3.2.1. International conventions and National regulations

##### Convention on International Trade in Endangered Species (CITES)

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement to protect endangered plants and animals, to which the different States adhere voluntary. However, CITES is legally binding on these States (which include European Union countries).

CITES entered into force in 1975. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species in the wild, and it accords varying degrees of protection to more than 35,000 species of animals and plants. CITES works by subjecting international trade in specimens of selected species to certain controls. All import, export, re-export and introduction from the sea of species covered by the Convention has to be authorized through a licensing system.

Species under CITES agreement are listed on three different appendixes, according to the different range of protection they may need. Appendix I, of about 1200 species, lists species that are threatened with extinction and are or may be affected by trade unless under exceptional circumstances. Commercial trade in wild-caught specimens of these species is illegal (permitted only in exceptional licensed circumstances). CITES Appendix II includes species that are not necessarily currently threatened with extinction but may become so without trade controls. Species listed under Appendix II require regulation to ensure their sustainable trade and prevent their decline in the future.

Regarding CITES Appendix III includes species that are subject to regulation within the jurisdiction of a country that has requested cooperation from other CITES Parties. The species in this appendix may not be globally threatened with extinction, but the requesting country seeks international assistance to monitor and control their trade for conservation purposes.

#### [Convention on the Conservation of Migratory Species of Wild Animals \(CMS\)](#)

As a United Nations environmental treaty, CMS serves as a global platform dedicated to the conservation and sustainable utilization of migratory animals and their habitats. The convention unites the Range States, which are the countries through which migratory animals pass, providing a legal framework for internationally coordinated conservation efforts across migratory ranges.

CMS, being the sole global convention focused on the preservation of migratory species, their habitats, and migration routes, collaborates with various international organizations, NGOs, media partners, and corporate sectors. It complements and cooperates with these entities to address the unique challenges associated with migratory species.

CMS Appendix I lists migratory species that have been assessed as being in danger of extinction throughout all or a significant portion of their range. According to Resolution 11.33, of the Conference Parties "endangered" means facing a very high risk of extinction in the wild in the near future. Additionally, CMS Parties are committed to strictly protecting these animals, conserving or restoring their habitats, eliminating migration obstacles, and managing other potential threats to their survival. The Convention not only establishes obligations for each State joining but also encourages collaborative actions among the Range States for the conservation of many listed species.

Migratory species that need or would significantly benefit from international co-operation are listed in Appendix II of the Convention. For this reason, the Convention encourages the Range States to conclude global or regional agreements.

As a framework Convention, CMS facilitates the development of various agreements, ranging from legally binding treaties (Agreements) to less formal instruments like Memoranda of Understanding, tailored to the specific requirements of different regions. Portugal became a Party to CMS in November 1983.

## International Union for Conservation of Nature (IUCN)

IUCN was established in 1948 and is the world's main authority on the conservation status of species. It is involved in data gathering and analysis, research, field projects, advocacy, lobbying and education. IUCN's mission is to "*influence, encourage and assist societies throughout the world to conserve nature and to ensure that any use of natural resources is equitable and ecologically sustainable.*"

Established in 1964, the IUCN Red List of Threatened Species, commonly known as the IUCN Red List or Red Data List, stands as the most extensive register documenting the conservation status of biological species worldwide. Utilizing rigorous criteria, the IUCN Red List assesses the risk of extinction for numerous species and subspecies, categorizing them as extinct (EX), extinct in the wild (EW), critically endangered (CR), endangered (EN), vulnerable (VU), near threatened (NT or LR/nt), least concern (LC or LR/lc), Lower risk (LR/cd), data deficient (DD), or not evaluated (NE).

Critically Endangered Species (CR) represents the highest level of risk assigned by the IUCN to wild species. A species is classified as critically endangered when its population is expected to decline by 80% within three generations, indicating an extremely high risk of extinction in the wild. The Endangered (EN) category applies to populations at risk due to factors such as low numbers, environmental changes, or predation threats, signifying a very high risk of extinction. Vulnerable (VU) species, categorized by the IUCN, face a high risk of extinction unless conditions affecting their survival and reproduction improve.

## National regulations

Portugal has enacted several decrees to establish protection measures for ETP species, which are as follows:

Decree-Law 263/81, approved on September 3, 1981, sets forth protection measures for marine mammals in Portuguese waters, prohibiting fishing, capturing, and killing these animals, except under strict scientific conditions. It repeals previous obsolete legislation and introduces significant penalties for violators, aiming at the conservation of these species vital for ecological balance.

Decree-Law 114/90, dated April 5, 1990, facilitates the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Decree-Law 114/90 emerged in response to Portugal's need to adapt its legislation to its accession to the European Communities, particularly regarding the protection of endangered species. This legislative adjustment aimed to align national measures with the more restrictive community regulations on the trade, detention, and transportation of protected fauna and flora. Through this decree, Portugal reinforces its commitment to nature conservation, going beyond the provisions of the Washington Convention.

Additionally, all cetacean species found in mainland Portugal are protected by national legislation (Decree-Law No. 263/1981 from September 3) and by European regulations (Habitats Directive) and international conventions and agreements (Bern, Bonn, CITES, ACCOBAMS).

Furthermore, Portugal has the "Livro Vermelho dos Vertebrados de Portugal" that is a classification of vertebrate species that inhabit the national territory, including freshwater and migratory fish, amphibians, reptiles, birds, and mammals, based on their probability of extinction within a certain

period. The last review of the book occurred between 2001 and 2004 and was published in 2005. It covered various taxonomic groups: freshwater and migratory fish, amphibians, reptiles, birds, and mammals. The evaluation results are presented on a national scale for each region. In the subsequent tables, we exclusively provide information for Continental Portugal, in accordance with the global threat category designated by the IUCN. It's important to note that within the "Livro Vermelho dos Vertebrados de Portugal", some species are classified as not applicable (NA). This category was introduced to clearly distinguish species that are not applicable from those classified as Not Threatened (NA).

### 3.2.2. List of ETP species in Portugal Continental

The following tables list marine mammals, marine turtles, sharks, rays, and chimeras which can be seen in Portugal continental waters, their scientific and common names, and the treaties and regulations to which they are subject. In relation to the IUCN, only the ones classified as vulnerable, endangered, or critically endangered are included in the following tables.

Additionally, **Tables 3.2.2.1** and **3.2.2.2**, based on information from the Livro Vermelho (Cabral et al 2005), detail the type of occurrence of the species in Portugal, indicating whether the species is a breeder (Rep) or visitor (Vis), and, distinguishing within the first group, whenever possible, between resident (Res) species/populations and migratory breeders (MigRep). Occasional occurrences (Oc) are also noted [3].

**Table 3.2.2.1** Marine mammals in Portugal & agreements, regulations and treaties to which they are subject. Source: team's own creation.

| Scientific Name                   | Common name (in Portuguese and English)    | Livro Vermelho de Portugal <sup>3</sup> | CITES - Appendix I | CITES - Appendix II | IUCN Status Global | Type of Occurrence Continental Portugal <sup>4</sup> | CMS (App. I / App. II) |
|-----------------------------------|--|---|--------------------|---------------------|--------------------|--|------------------------|
| <i>Balaenoptera acutorostrata</i> | Baleia-anã<br>Common Minke Whale           | VU                                      | X                  | ---                 | LC                 | RES  | ---                    |
| <i>Balaenoptera musculus</i>      | Baleia-azul<br>Blue Whale                  | NA                                      | X                  | ---                 | EN                 | OC   | ---                    |
| <i>Balaenoptera physalus</i>      | Baleia-comum<br>Fin Whale                  | EN                                      | X                  | ---                 | EN                 | VIS  | 2002 / 2002            |
| <i>Delphinus delphis</i>          | Golfinho-comum<br>Common Dolphin           | LC                                      | ---                | X                   | LR/lc              | RES  | ---                    |
| <i>Eubalaena glacialis</i>        | Baleia-basca<br>North Atlantic Right Whale | NA                                      | X                  | ---                 | EN                 | OC   | 1979 / -               |

<sup>3</sup> Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT or LR/nt), Least Concern (LC or LR/lc), Lower Risk; Conservation Dependent (LR/cd), Data Deficient (DD) or Not Evaluated (NE) and Not Applicable (NA).

<sup>4</sup> Breeding (Rep), Visitor (Vis), Resident species/populations (Res) Migratory Breeder (MigRep) and Occasional occurrence (Oc.)

| Scientific Name               | Common name (in Portuguese and English)          | Livro Vermelho de Portugal <sup>3</sup> | CITES - Appendix I | CITES - Appendix II | IUCN Status Global | Type of Occurrence Continental Portugal <sup>4</sup> | CMS (App. I / App. II) |
|-------------------------------|--|---|--------------------|---------------------|--------------------|--|------------------------|
| <i>Megaptera novaeangliae</i> | Baleia-de-bossa<br>Humpback Whale                | NA                                      | X                  | ---                 | EN                 | OC   | ---                    |
| <i>Phocoena phocoena</i>      | Bôto<br>Harbour Porpoise                         | VU                                      | ---                | X                   | VU                 | RES  | ---                    |
| <i>Pseudorca crassidens</i>   | Falsa-Orca<br>False Killer Whale                 | NA                                      | ---                | X                   | LR/lc              | OC   | ---                    |
| <i>Tursiops truncatus</i>     | Roaz<br>Bottlenose Dolphin                       | LC                                      | ---                | X                   | DD                 | RES  | ---                    |
| <i>Stenella coeruleoalba</i>  | Golfinho-riscado<br>Striped Dolphin              | LC                                      | ---                | X                   | LR/cd              | RES  | ---                    |
| <i>Grampus griseus</i>        | Grampo; Moleiro<br>Risso's Dolphin               | DD                                      | ---                | X                   | DD                 | RES  | ---                    |
| <i>Globicephala melaena</i>   | Baleia-piloto<br>Long-finned Pilot               | DD                                      | ---                | X                   | LR/c               | ---  | ---                    |
| <i>Orcinus orca</i>           | Orca; Roaz-da-bandeira<br>Killer Whale, Orca     | DD                                      | ---                | X                   | LR/cd              | ---  | - / 1991               |
| <i>Ziphius cavirostris</i>    | Baleia-bicuda-de-cuvier<br>Cuvier's Beaked Whale | DD                                      | ---                | X                   | DD                 | ---  | ---                    |
| <i>Kogia breviceps</i>        | Cachalote-pigmeu<br>Pygmy Sperm Whale            | DD                                      | ---                | X                   | LR/c               | ---  | ---                    |
| <i>Physeter macrocephalus</i> | Cachalote<br>Sperm Whale                         | NA                                      | X                  | ---                 | VU                 | OC   | 2002/2002              |
| <i>Balaenoptera borealis</i>  | Baleia-sardineira<br>Sei Whale                   | NA                                      | X                  | ---                 | EN                 | OC   | ---                    |

**Table 3.2.2.2:** Reptiles-Marine turtles in Portugal and the agreements and regulations to which they are subject. Source: team's own creation

| Scientific Name        | Common name (in Portuguese and English) | Livro Vermelho de Portugal | CITES - Appendix I | CITES - Appendix II | IUCN Status <sup>5</sup> | Type of Occurrence Continental Portugal <sup>6</sup> | CMS (App. I / App. II) |
|------------------------|---|----------------------------|--------------------|---------------------|--------------------------|--|------------------------|
| <i>Caretta caretta</i> | Tartaruga-                              | NA                         | X                  | ---                 | EN                       | OC   | 1985 / 1979            |

<sup>5</sup> Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT or LR/nt), Least Concern (LC or LR/lc), Lower Risk; Conservation Dependent (LR/cd), Data Deficient (DD) or Not Evaluated (NE) and Not Applicable (NA).

<sup>6</sup> Breeding (Rep), Visitor (Vis), Resident species/populations (Res) Migratory Breeder (MigRep) and Occasional occurrence (Oc).



|                               |   |    |   |     |    |    |             |
|-------------------------------|---|----|---|-----|----|----|-------------|
|                               | común<br>Loggerhead<br>Sea Turtle                   |    |   |     |    |    |             |
| <i>Chelonia mydas</i>         | Tartaruga-<br>verde<br>Green Sea<br>Turtle          | NA | X | --- | EN | OC | 1979 / 1979 |
| <i>Dermochelys coriacea</i>   | Tartaruga-de-<br>couro<br>Leatherback<br>Sea Turtle | NA | X | --- | CR | OC | 1979 / 1979 |
| <i>Eretmochelys imbricata</i> | Tartaruga-de-<br>pente<br>Hawksbill Sea<br>Turtle   | NA | X | X   | CR | OC | 1985 / 1979 |

The report “Tubarões e Raias: Guardiões do oceano em crise” [1] highlights the significant number of rays and pelagic sharks captured by the European fleet, which includes Portugal, predominantly in the Atlantic Ocean. Notably, 88% of all captures of pelagic sharks, especially the blue shark and the shortfin mako shark, are executed by European longliners in the North Atlantic. Numerous ray, shark, and chimera species are listed under Appendices I and II of CITES, as well as on the global IUCN list and CMS [1].

**Table 3.2.2.3** presents the main species of sharks, rays, and chimeras found in continental Portugal. The data were derived from the report “Tubarões e Raias: Guardiões do oceano em crise” [1], which offers an extensive analysis of their distribution in Portugal and conservation status according to IUCN and CITES criteria. Additionally, the table features species listed in Appendix I or II of the CMS within Portugal.

**Table 3.2.2.3:** Main species of sharks, rays, and chimeras in continental Portugal and the agreements and regulations to which they are subject. Source: team’s own creation using the data of ANP/WWF, 2021 [1].

| Scientific name                | Common name (in Portuguese and English)        | CITES - Appendix I | CITES - Appendix II | UICN GLOBAL <sup>7</sup> (2021) | CMS (App. I / App. II) |
|--------------------------------|--|--------------------|---------------------|---------------------------------|------------------------|
| <i>Aetomylaeus bovinus</i>     | Ratão-bispo<br>Bull Ray                        | ---                | ---                 | CR                              | ---                    |
| <i>Alopias superciliosus</i>   | Tubarão-raposo-olhudo<br>Bigeye Thresher Shark | ---                | X                   | VU                              | - / 2014               |
| <i>Alopias vulpinus</i>        | Tubarão-raposo<br>Common Thresher Shark        | ---                | X                   | VU                              | - / 2014               |
| <i>AmblyRaja radiata</i>       | Raia-repregada<br>Thorny Skate                 | ---                | ---                 | VU                              | ---                    |
| <i>Carcharodon carcharias</i>  | Tubarão-branco<br>Great White Shark            | ---                | X                   | VU                              | 2002 / 2002            |
| <i>Carcharhinus brevipinna</i> | Tubarão-tecelão<br>Spinner Shark               | ---                |                     | VU                              |                        |

<sup>7</sup> Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT or LR/nt), Least Concern (LC or LR/lc), Lower Risk; Conservation Dependent (LR/cd), Data Deficient (DD) or Not Evaluated (NE) and Not Applicable (NA).



| Scientific name                 | Common name (in Portuguese and English)                      | CITES - Appendix I | CITES - Appendix II | UICN GLOBAL <sup>7</sup> (2021) | CMS (App. I / App. II) |
|---------------------------------|--|--------------------|---------------------|---------------------------------|------------------------|
| <i>Carcharhinus falciformis</i> | Tubarão-luzídio<br>Silky Shark                               | ---                | X                   | VU                              | - / 2014               |
| <i>Carcharhinus longimanus</i>  | Tubarão-de-pontas brancas<br>Oceanic Whitetip Shark          | ---                | X                   | CR                              | 2020 / -               |
| <i>Carcharhinus obscurus</i>    | Tubarão-faquet<br>Dusky Shark                                | ---                | ---                 | EN                              | ---                    |
| <i>Carcharhinus plumbeus</i>    | Tubarão-corre-costa<br>Sandbar Shark                         | ---                | ---                 | VU                              | ---                    |
| <i>Centrophorus granulosus</i>  | Barroso<br>Gulper Shark                                      | ---                | ---                 | EN                              | ---                    |
| <i>Centrophorus lusitanicus</i> | Tubarão-lusitano<br>Portuguese Dogfish                       | ---                | ---                 | VU                              | ---                    |
| <i>Centrophorus squamosus</i>   | Lixa<br>Leafscale Gulper Shark                               | ---                | ---                 | EN                              | ---                    |
| <i>Centroscymsus owstonii</i>   | Xara-preta-de-natura<br>Roughskin Dogfish                    | ---                | ---                 | VU                              | ---                    |
| <i>Cetorhinus maximus</i>       | Tubarão-frade<br>Basking Shark                               | ---                | X                   | EN                              | 2005 / 2005            |
| <i>Chimaera monstrosa</i>       | Ratazana<br>Rabbitfish                                       | ---                | ---                 | VU                              | ---                    |
| <i>Dalatias licha</i>           | Gata<br>Kitefin Shark  | ---                | ---                 | VU                              | ---                    |
| <i>Dipturus intermedius</i>     | Raia-oirega<br>Flapper Skate                                 | ---                | ---                 | CR                              | ---                    |
| <i>Echinorhinus brucus</i>      | Tubarão-prego<br>Bramble Shark                               | ---                | ---                 | EN                              | ---                    |
| <i>Galeorhinus galeus</i>       | Perna-de-moça, Cação<br>Tope Shark                           | ---                | ---                 | CR                              | - / 2020               |
| <i>Glaucostegus cemiculus</i>   | Viola-barba-negra<br>Blackchin Guitarfish                    | ---                | ---                 | CR                              | ---                    |
| <i>Gymnura altavela</i>         | Uge-manta, Raia<br>Spiny Butterfly Ray                       | ---                | ---                 | EN                              | ---                    |
| <i>Isurus oxyrinchus</i>        | Tubarão-anequim,<br>Rinquim, Marracho<br>Shortfin Mako Shark | ---                | X                   | EN                              | - / 2008               |
| <i>Isurus paucus</i>            | Tubarão-anequim-de-gadanha<br>Longfin Mako Shark             | ---                | X                   | EN                              | - / 2008               |
| <i>Lamna nasus</i>              | Tubarão-sardo,<br>Marracho, Anequim<br>Porbeagle             | ---                | X                   | VU                              | - / 2008               |
| <i>LeucoRaja circularis</i>     | Raia-de-S. Pedro<br>Sandy Skate                              | ---                | ---                 | EN                              | ---                    |
| <i>LeucoRaja fullonica</i>      | Raia-pregada   | ---                | ---                 | VU                              | ---                    |

| Scientific name                | Common name (in Portuguese and English)                  | CITES - Appendix I | CITES - Appendix II | UICN GLOBAL <sup>7</sup> (2021) | CMS (App. I / App. II) |
|--------------------------------|--|--------------------|---------------------|---------------------------------|------------------------|
|                                | Shagreen Ray   |                    |                     |                                 |                        |
| <i>Mobula birostris</i>        | Manta, Urjamanta<br>Giant Manta Ray                      | ---                | X                   | EN                              | 2011 / 2011            |
| <i>Mobula mobular</i>          | Jamanta, Jimanta, Uge<br>Devil Fish                      | ---                | X                   | EN                              | 2014 / 2014            |
| <i>Mobula tarapacana</i>       | Manta-cornuda,<br>jamanta-chilena<br>Sicklefin Devil Ray | ---                | X                   | EN                              | 2014 / 2014            |
| <i>Mustelus mustelus</i>       | Cação-liso, Caneja<br>Common Smooth-Hound                | ---                | ---                 | VU                              | ---                    |
| <i>Mustelus punctulatus</i>    | n.d.* (Portuguese Name)<br>Blackspotted Smooth-Hound     | ---                | ---                 | VU                              | ---                    |
| <i>Myliobatis aquila</i>       | Ratão-águia, Arreição<br>Common Eagle Ray                | ---                | ---                 | CR                              | ---                    |
| <i>Oxynotus centrina</i>       | Peixe-porco<br>Angular Roughshark                        | ---                | ---                 | VU                              | ---                    |
| <i>Pristis pristis</i>         | Peixe-serra, Espadarte-serra<br>Smalltooth Sawfish       | X                  | ---                 | CR                              | ---                    |
| <i>Raja maderensis</i>         | Raia-da-madeira<br>Madeira Skate                         | ---                | ---                 | VU                              | ---                    |
| <i>Raja undulata</i>           | Raia-curva<br>Undulate Ray                               | ---                | ---                 | EN                              | ---                    |
| <i>Rhincodon typus</i>         | Tubarão-baleia<br>Whale Shark                            | ---                | X                   | EN                              | 2017 / 1999            |
| <i>Rhinobatus rhinobatus</i>   | Viola<br>Common Guitarfish                               | ---                |                     | EN                              | ---                    |
| <i>Rostroraja alba</i>         | Raia-tairoga<br>White Skate                              | ---                |                     | EN                              | ---                    |
| <i>Scymnodon ringens</i>       | Arreganhada<br>Knifetooth Dogfish                        | ---                |                     | VU                              | ---                    |
| <i>Somniosus microcephalus</i> | Tubarão-da-Gronelândia<br>Greenland Shark                | ---                |                     | VU                              | ---                    |
| <i>Sphyrna lewini</i>          | Tubarão-martelo recortado<br>Hammerhead Shark            | ---                | X                   | CR                              | ---                    |
| <i>Sphyrna mokarran</i>        | Tubarão-martelo-gigante<br>Great Hammerhead Shark        | ---                | X                   | CR                              | ---                    |
| <i>Sphyrna zygaena</i>         | Tubarão-martelo,<br>Cornuda<br>Smooth Hammerhead Shark   | ---                | X                   | VU                              | - / 2020               |
| <i>Squalus acanthias</i>       | Galhudo-malhado  | ---                | ---                 | VU                              | - / 2008               |

| Scientific name          | Common name (in Portuguese and English) | CITES - Appendix I | CITES - Appendix II | IUCN GLOBAL <sup>7</sup> (2021) | CMS (App. I / App. II) |
|--------------------------|---|--------------------|---------------------|---------------------------------|------------------------|
|                          | Spiny Dogfish                           |                    |                     |                                 |                        |
| <i>Squatina aculeata</i> | Anjo-de-mathias<br>Sawback Angel Shark  | ---                | ---                 | CR                              | ---                    |
| <i>Squatina squatina</i> | Anjo<br>Angel Shark                     | ---                | ---                 | CR                              | ---                    |

\* n.d. No data

### 3.2.3. Non ETP species found in Portugal

This section presents a list of mammals, rays, sharks, and chimeras found in Portuguese continental waters. These species are recognized on the IUCN global list but do not meet the MSC requirements to be considered as ETPs, as explained in **section 3.2**. **Table 3.2.3.1** was prepared using the information of the “Livro Vermelho” and the report “Tubarões e Raias: Guardiões do oceano em crise”[1].

These species found in Continental Portugal, may be impacted by the selected Units of Assessment.

**Table 3.2.3.1.** Non ETP species in continental Portugal. Source: team’s own creation.

| Scientific Name                              | Common name (in Portuguese and English)       | IUCN Status Global <sup>8</sup> | Tipo de Ocorrência Portugal Continental <sup>9</sup> |
|--|---|---------------------------------|--|
| <i>Erignatus barbatus</i>                    | Foca-barbuda<br>Bearded Seal                  | LR/c                            | OC   |
| <i>Cystophora cristata</i>                   | Foca-de-crista<br>Hooded Seal                 | LR/c                            | OC   |
| <i>Halichoerus grypus</i>                    | Foca-cinzenta<br>Grey Seal                    | LR/c                            | OC   |
| <i>Phoca vitulina</i>                        | Foca-comum<br>Harbor Seal (or Common Seal)    | LR/c                            | OC   |
| <i>Phoca hispida</i>                         | Foca-anelada<br>Ringed Seal                   | LR/c                            | OC   |
| <i>Bathytoshia lata (Dasyatis pastinaca)</i> | Uge-de-cardas, Ratão<br>Broad Stingray        | LC                              | ---  |
| <i>Carcharhinus limbatus</i>                 | Tubarão-de-pontas<br>Negras<br>Blacktip Shark | NT                              | ---  |

<sup>8</sup> Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT or LR/nt), Least Concern (LC or LR/lc), Lower Risk; Conservation Dependent (LR/cd), Data Deficient (DD) or Not Evaluated (NE) and Not Applicable (NA).

<sup>9</sup> Breeding (Rep), Visitor (Vis), Resident species/populations (Res) Migratory Breeder (MigRep) and Occasional occurrence (Oc).

| Scientific Name                   | Common name (in Portuguese and English)                  | IUCN Status Global <sup>8</sup> | Tipo de Ocorrência Portugal Continental <sup>9</sup> |
|-----------------------------------|--|---------------------------------|--|
| <i>Centroscyllium fabricii</i>    | n.d.*(Portuguese Name)<br>Black Dogfish                  | LC                              | ---  |
| <i>Centroscymnus coelolepis</i>   | Carocho<br>Portuguese Dogfish                            | NT                              | ---  |
| <i>Centroscymnus crepidater</i>   | Sapata-preta<br>Longnose Velvet Dogfish                  | NT                              | ---  |
| <i>Chimaera apolescens</i>        | n.d.*  | NE                              | ---  |
| <i>Chlamydoselachus anguineus</i> | Tubarão-cobra<br>Frisled Shark                           | LC                              | ---  |
| <i>Dasyatis pastinaca</i>         | Uge, Ratão<br>Common Stingray                            | DD                              | ---  |
| <i>Deania calcea</i>              | Pífaro, Pala<br>Birdbeak Dogfish                         | NT                              | ---  |
| <i>Deania hystricosa</i>          | n.d.*(Portuguese Name)<br>Rough Longnose Dogfish         | DD                              | ---  |
| <i>Deania profundorum</i>         | Sapata<br>Arrowhead Dogfish                              | NT                              | ---  |
| <i>Dipturus oxyrinchus</i>        | Raia-bicuda<br>Longnosed Skate                           | NT                              | ---  |
| <i>Etmopterus princeps</i>        | Lixinha-de-fundura-grada<br>Great Lanternshark           | LC                              | ---  |
| <i>Etmopterus pusillus</i>        | Xarinha-preta, Lixinha-da-fundura<br>Smooth Lanternshark | LC                              | ---  |
| <i>Etmopterus spinax</i>          | Lixinha-da-fundura, Lixinha<br>Velvet Belly Lanternshark | LC                              | ---  |
| <i>Galeus atlanticus</i>          | n.d.*(Portuguese Name)<br>Atlantic Sawtail Catshark      | NT                              | ---  |
| <i>Galeus murinus</i>             | Cão-do-monte<br>Mouse Catshark                           | LC                              | ---  |
| <i>Galeus melastomus</i>          | Leitão, Cação, Pata-roxa, Papoila<br>Blackmouth Catshark | LC                              | ---  |
| <i>Heptranchias perlo</i>         | Boca-doce, Bico-doce<br>Sharpnose Sevengill Shark        | NT                              | ---  |
| <i>Hexanchus griseus</i>          | Tubarão-albafar, Albafar<br>Bluntnose Sixgill Shark      | NT                              | ---  |
| <i>Hexanchus nakamurai</i>        | n.d.*(Portuguese Name)<br>Bigeye Sixgill Shark           | NT                              | ---  |
| <i>Hydrolagus affinis</i>         | Quimera-da-fundura<br>Smalleyed Rabbitfish               | LC                              | ---  |
| <i>Hydrolagus lusitanicus</i>     | n.d.*(Portuguese Name)<br>Lusitanian Rabbitfish          | LC                              | ---  |
| <i>Hydrolagus mirabilis</i>       | n.d.*(Portuguese Name)<br>Large-eyed Rabbitfish          | LC                              | ---  |

| Scientific Name                   | Common name (in Portuguese and English)                   | IUCN Status Global <sup>8</sup> | Tipo de Ocorrência Portugal Continental <sup>9</sup> |
|-----------------------------------|---|---------------------------------|--|
| <i>LeucoRaja naevus</i>           | Raia-de-dois-olhos<br>Cuckoo Ray                          | LC                              | ---  |
| <i>Mitsukurina owstoni</i>        | Tubarão duende<br>Goblin Shark                            | LC                              | ---  |
| <i>Mustelus asterias</i>          | Cação-pintado<br>Starry Smooth-Hound                      | NT                              | ---  |
| <i>NeoRaja iberica</i>            | Raia-pigmeia-ibérica, Raia-anã<br>Iberian Skate           | LC                              | ---  |
| <i>Oxynotus paradoxus</i>         | Peixe-porco-vela<br>Sailfin Roughshark                    | DD                              | ---  |
| <i>Prionace glauca</i>            | Tintureira, tubarão-azul<br>Blue Shark                    | NT                              | ---  |
| <i>Pseudocarcharias kamoharai</i> | Tubarão-crocodile<br>Crocodile Shark                      | LC                              | ---  |
| <i>Pseudotriakis microdon</i>     | Tubarão-mona<br>False Catshark                            | LC                              | ---  |
| <i>Pteroplatytrygon violacea</i>  | Uge-violeta, Ratão<br>Pelagic Stingray                    | LC                              | ---  |
| <i>Raja asterias</i>              | Raia-pintada<br>Starry Skate                              | NT                              | ---  |
| <i>Raja bigelowi</i>              | Arraia<br>Bigelow's Ray                                   | LC                              | ---  |
| <i>Raja brachyura</i>             | Raia-pontuada, Arraia<br>Blonde Ray                       | NT                              | ---  |
| <i>Raja clavata</i>               | Raia-lenga<br>Thornback Ray                               | NT                              | ---  |
| <i>Raja microcellata</i>          | Raia-zimbreira<br>Small-Eyed Ray                          | NT                              | ---  |
| <i>Raja miraletus</i>             | Raia-de-quatro-olhos<br>Brown Ray                         | LC                              | ---  |
| <i>Raja montagui</i>              | Raia-manchada<br>Spotted Ray                              | LC                              | ---  |
| <i>Rajella fyllae</i>             | Raia-redonda<br>Round Ray                                 | LC                              | ---  |
| <i>Rhinoptera marginata</i>       | Gavião-do-Mar<br>Lusitanian Cownose Ray                   | NT                              | ---  |
| <i>Scyliorhinus canicula</i>      | Pata-roxa, Pinta-roxa, cascarra<br>Small-Spotted Catshark | LC                              | ---  |
| <i>Scyliorhinus stellaris</i>     | Pata-roxa-denisa<br>Nursehound                            | NT                              | ---  |
| <i>Somniosus rostratus</i>        | Pailona<br>Little Sleeper Shark                           | LC                              | ---  |
| <i>Squalus blainvillei</i>        | Galhudo<br>Longnose Spurdog                               | DD                              | ---  |

| Scientific Name           | Common name (in Portuguese and English)                         | IUCN Status Global <sup>8</sup> | Tipo de Ocorrência Portugal Continental <sup>9</sup> |
|---------------------------|---|---------------------------------|--|
| <i>Squalus megalops</i>   | Galhudo-de-focinho-curto<br>Shortnose Spurdog                   | LC                              | ---  |
| <i>Torpedo marmorata</i>  | Tremelga-marmoreada<br>Marbled Electric Ray                     | DD                              | ---  |
| <i>Torpedo nobiliana</i>  | Tremelga-negra, Torpedo<br>Atlantic Torpedo                     | DD                              | ---  |
| <i>Torpedo torpedo</i>    | Tremelga-de-olhos, Tormentim<br>Common Torpedo                  | DD                              | ----   |
| <i>Zameus squamulosus</i> | Arreganha-de-focinho-comprido,<br>arreganhada<br>Velvet Dogfish | LC                              | ----   |

\* n.d. No data

### 3.3. Habitats

The EU's marine conservation policy is coordinated by the Habitats Directive and the Marine Strategy Framework Directive (MSFD). In coordination with the Birds Directive, the Habitats Directive has established the EU Natura 2000 ecological network of protected areas, which includes some vulnerable marine ecosystems (VMEs). Environmental policy is guided by national agencies and OSPAR, with advice being provided by both of these as well as the European Environment Agency (EEA) and ICES.

Just like every member of the European Union, Portugal is obligated to follow EU legislation. The Habitats Directive specifically requires that each Member State establish Marine Protected Areas (MPAs) to integrate into the EU's Natura 2000 network by the year 2012. This initiative aims to create an ecologically coherent set of areas of whose conservation is of critical community importance.

#### 3.3.1. Habitat description

The Western Iberian Shelf is characterized by sand-sized sediments, with fine sediments forming significant mud bodies on the mid-shelf off the main rivers (see **Figure 3.3.1.1**).

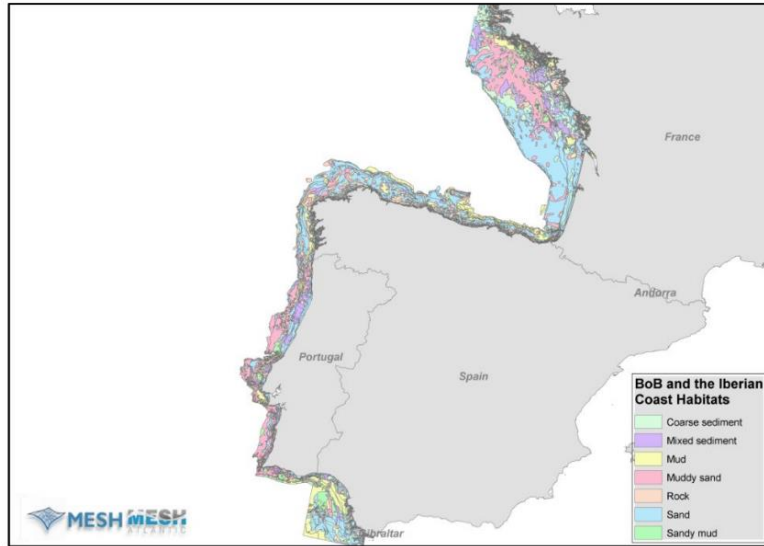
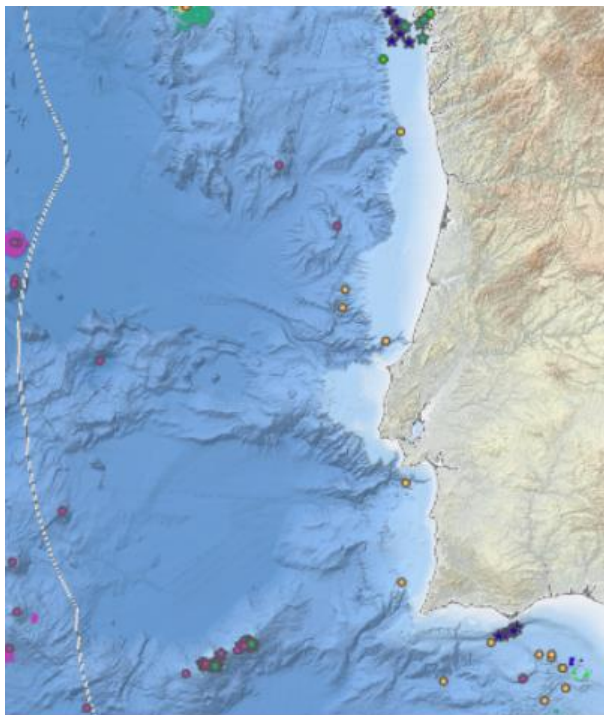
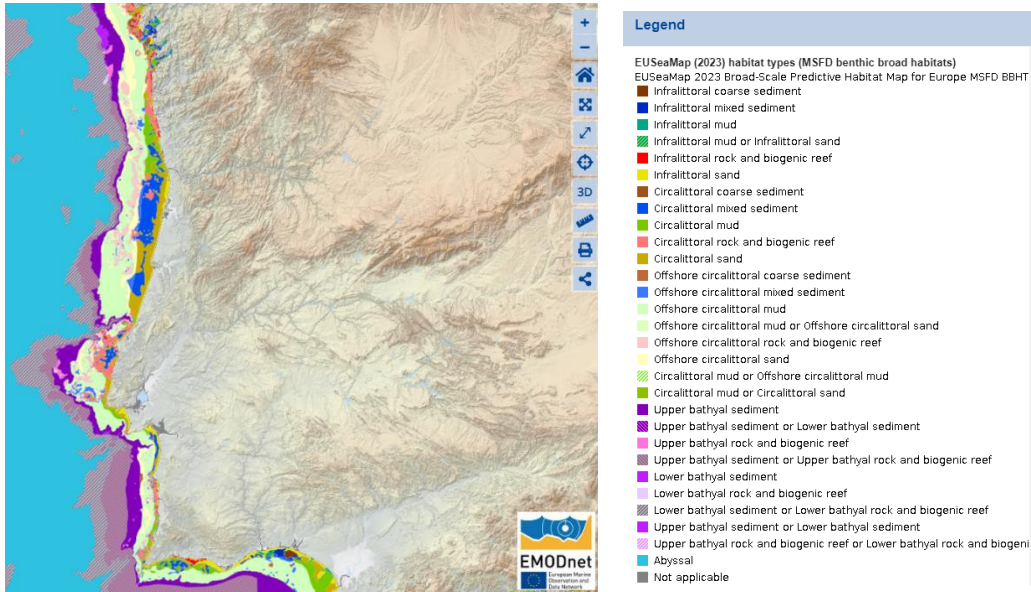


Figure 3.3.1.1 Major substrates on the shelf of the Bay of Biscay and the Iberian coast (as compiled by EMODNET seabed habitats; [www.emodnet-seabedhabitats.eu](http://www.emodnet-seabedhabitats.eu)).

The marine environment in continental Portugal is characterized by its great biological and landscape diversity and ecological complexity. The geographical location of the Portuguese coast favours a rich variety of habitats and species, being in a confluence zone of cold waters from the North, warmer waters from the South, and others typical of the Mediterranean Sea. Along the Portuguese continental coast, there are deep rocky reefs with varied reliefs, underwater cliffs, and flat areas that constitute important habitats. These deep habitats are home to many fish and invertebrate species. Sandy areas are dominated by flatfish, such as flounders, and starfish. Rocky areas are inhabited by various species of scorpionfish and other rocky fish, gorgonians (soft corals), and sponges, among many others. Some species occurring in deep waters are known to also inhabit shallower. These deep habitats can act as a refuge for some species when shallower reefs are disturbed, and they can harbor unique species that are not found elsewhere. Deep habitats contain a high biodiversity that has been known and exploited by fishing for decades. However, compared to shallower areas, little is known about these habitats and the communities associated with them [2] (see **Figure 3.3.1.2**).



- OSPAR Habitats in the North-East Atlantic Ocean - 2022 Point records
- Carbonate mounds
  - ★ Coral gardens
  - Deep-sea sponge aggregations
  - Intertidal mudflats
  - Intertidal *Mytilus edulis* beds on mixed and sandy sediments
  - Kelp forests
  - Littoral chalk communities
  - *Lophelia pertusa* reefs
  - ★ Maerl beds
  - ★ *Modiolus modiolus* horse mussel beds
  - Oceanic ridges with hydrothermal vents/fields
  - ★ *Ostrea edulis* beds
  - ★ *Sabellaria spinulosa* reefs
  - ★ Sea-pen and burrowing megafauna communities
  - Seamounts
  - *Zostera* beds

Figure 3.3.1.2 Different habitats representations from EDMONET

### 3.3.2. Marine Protected Areas

Marine Protected Areas (MPAs) go beyond being designated zones where human activities are restricted. They also serve as territories that embody a certain harmony between nature and human



endeavors. Essentially, the effective management of this equilibrium is crucial for sustaining vital economic activities within these areas, such as fishing and tourism.

As per the definition by the International Union for Conservation of Nature (IUCN), an MPA encompasses any intertidal or subtidal region that has been designated through legislation or other measures to safeguard either the entirety or a portion of its environment. This includes its water mass coverage, fauna and flora, as well as its cultural and historical significance.

The primary aim of MPAs is to enhance the provisioning of goods and services in coastal and marine regions. Consequently, these areas are anticipated to yield various benefits, including the preservation of ecosystems, maintenance of genetic diversity, augmentation in the population of specific species, and the sustainability of natural resources.

In Portugal, the initial MPA was designated in 1971, situated in the Selvagens Islands archipelago. Subsequently, the first MPA on the continental part of the country was established in the decade following that, known as the nature reserve of the Berlengas, along with several coastal reserves in the Azores islands. There are nine MPAs in Continental Portugal (see table 3.3.2.1).

**Table 3.3.2.1** List of MPAs in Continental Portugal. Source: Horta and Costa 2017 [4].

| Region               | Area          | MPA code | MPA name   | MPA area (km <sup>2</sup> ) |
|----------------------|---------------|----------|--|-----------------------------|
| Continental Portugal | Maritime Area | AMPA     | Área Marinha Protegida das Avencas   | 0.59                        |
| Continental Portugal | Maritime Area | PMLS     | Parque Marinho Professor Luiz Saldanha   | 52.75                       |
| Continental Portugal | Maritime Area | PNLN     | Parque Natural do Litoral Norte  | 74.76                       |
| Continental Portugal | Maritime Area | PNRF     | Parque Natural da Ria Formosa  | 88.84                       |
| Continental Portugal | Maritime Area | PNSACV   | Parque Natural do Sudoeste Alentejano e Costa Vicentina  | 290.18                      |
| Continental Portugal | Maritime Area | RNB      | Reserva Marinha das Berlengas  | 94.42                       |
| Continental Portugal | Maritime Area | RNDSJ    | Reserva Natural das Dunas de São Jacinto   | 2.62                        |
| Continental Portugal | Maritime Area | RNLSAS   | Reserva Natural das Lagoas de Santo André e Sancha   | 21.54                       |
| Continental Portugal | Maritime Area | AMPIC    | Área Marinha Protegida de Interesse Comunitário o futuro Parque Natural Marinho Recife do Algarve – <i>Pedra do Valado</i> | 156                         |

In order to review the existing marine protected areas, a Working Group was established on March 6, 2017, through to Order No. 1/2017 issued by the Minister of the Sea. The group's primary goal is to propose an ecologically coherent network of new marine protected areas in maritime spaces under national sovereignty or jurisdiction, and management and monitoring plans for these areas. Among

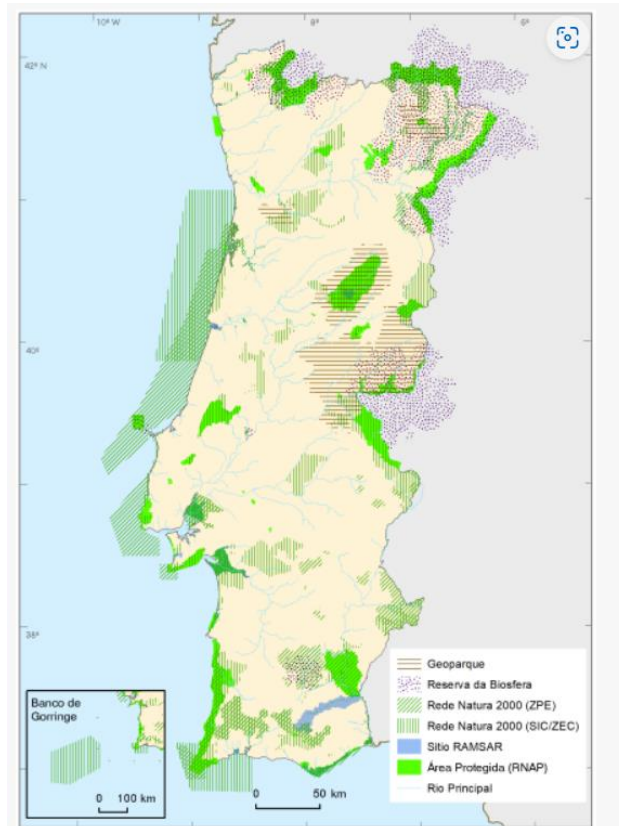
its objectives, this working group was tasked with establishing the guidelines for developing a National Network of Marine Protected Areas (RNAMP by its acronym in Portuguese).

The RNAMP aims to preserve, restore, or enhance the conservation status of marine and coastal ecosystems, habitats, and species, including non-living natural heritage. It advocates for creating a registry of classified natural values, contributing to the National Register of Classified Natural Values. This process should be progressive and dynamic, addressing knowledge gaps in a vast domain, focusing first on current natural values with clear and objective prioritization. The initiative stresses the importance of informed societal participation, long-term monitoring programs to validate conservation efforts, and the integration of management needs, ensuring the coherence of individual MPA monitoring with broader conservation objectives (República Portuguesa, 2018). Currently, only nine types of marine habitats are listed in Annex I of the Habitats Directive (92/43/EEC) as natural habitats of community interest requiring the designation of Special Areas of Conservation within the Natura 2000 network. Of these, seven are located in the continental subdivision:

- 1110 "Sandbanks which are slightly covered by sea water all the time".
- 1140 "Mudflats and sandflats not covered by seawater at low tide".
- 1160 "Large shallow inlets and bays".
- 1170 "Reefs".
- 8330 "Submerged or partially submerged sea caves".
- 1180 "Submarine structures made by leaking gases".
- 1150 "Coastal lagoons". It is essential to note that the inclusion of habitat 1150 "Coastal lagoons" in the continental subdivision specifically refers to lagoons with predominantly salty water, classified as coastal waters under the Water Framework Directive.

Portugal's Natura 2000 network encompasses significant marine and terrestrial areas, covering approximately 10.7% of its marine territory, including internal maritime waters, the territorial sea up to 12 nautical miles, and the Exclusive Economic Zone up to 200 nautical miles.

Notably, the majority of MPAs in Portugal have been established in recent decades with the implementation of the Rede Natura 2000 (**Figure 3.3.2.1**). Under European Union regulations, particularly within the Natura 2000 framework, ten marine or exclusively marine Special Protection Areas (SPAs) have been identified under the Birds Directive (Directive 79/409/EEC) in Portugal. These areas include the Minho and Coura River estuaries, Ria de Aveiro, the Aveiro/Nazaré region, the Berlengas Islands, Cabo Espichel, Cabo Raso, Santo André Lagoon, Sancha Lagoon, the Southwest Coast, and Ria Formosa. These marine zones are crucial not only for the coastal ecosystem but also as habitats for resting and feeding of breeding, wintering, and migrating bird species on their migratory paths. In addition, under the Habitats Directive (Directive 92/43/EEC), ten Sites of Community Importance (SCIs) featuring marine territories have been designated, including the North Coast, Peniche/Santa Cruz, the Berlenga Archipelago, Sintra/Cascais, the Tejo Estuary, Arrábida/Espichel, the Sado Estuary, the Southwest Coast, Ria Formosa, and the Gorringe Bank [8].



**Figure 3.3.2.1** Map of the National Network of Protected Areas, the Natura 2000 network and Classified Areas under other international commitments on the continent. Source: Institute for Nature Conservation and Forests (ICNF, 2022)

## 4. Fisheries Management System

### 4.1. Management framework and regulations

Fisheries in the Bay of Biscay and the Iberian Coast ecoregion are managed through national administrations such as the Directorate-General for Natural Resources, Safety and Maritime Services (DGRM), under the Common Fisheries Policy (CFP), while some fisheries managed by the Northeast Atlantic Fisheries Commission (NEAFC) and by coastal states. Responsibility for large pelagic fish is under the International Commission for the Conservation of Atlantic Tunas (ICCAT). Fisheries advice is provided by the International Council for the Exploration of the Sea (ICES), the European Commission’s Scientific Technical and Economic Committee for Fisheries (STECF), and the Southwestern Waters Advisory Council (SWWAC). At national level, the Portuguese Institute for the Sea and Atmosphere (IPMA) issues scientific advice for the fisheries sector.

#### 4.1.1. European Union

Fisheries in Europe are governed by the CFP of the European Union. Therefore, the CFP undergoes a review approximately every decade, with the latest revision implemented on January 1, 2014 (Regulation (EU) No 1380/2014). The CFP last Regulation aims to guarantee that “fishing and

aquaculture activities are environmentally sustainable in the long-term and are managed in a way that is consistent with the objectives of achieving economic, social and employment benefits, and of contributing to the availability of food supplies.”

Moreover, there are several EU environmental regulation and international agreements that are applicable to habitats and species protection, but which are also relevant to fisheries activities. These include: the Marine Strategy Framework Directive (2008/56/EC) which obliges achieving a good environmental status by 2020; the Bird and Habitat Directives on the conservation of natural habitats providing the basis for the Natura 2000 networks; EC Regulation 812/2004 laying down measures concerning incidental catches of cetaceans; ASCOBANS (Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas); CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora); and finally the Bern Convention (Convention on the Conservation of European Wildlife and Natural Habitats).

#### 4.1.2. National

On a national level, individual Member States have the responsibility for ensuring compliance with the CFP mandate, as well as other EU legislation and agreements within their waters. EU fisheries regulations are directly transposed into national legislation, while environmental and other agreements are incorporated through primary and secondary national legislation in line with EU directives.

Within 12 nautical miles of their baselines, Member States can enact non-discriminatory measures to conserve and manage fish stocks and enhance the conservation status of marine ecosystems. However, this is permissible only if the EU has not implemented specific measures for conservation and management in that area or directly addressing the identified issue. These measures must align with the objectives outlined in CFP Article 2 and be, at a minimum, as stringent as the measures prescribed by Union law.

In Portugal, the legal framework governing fisheries is established by Decree-Law No. 73/2020, dated September 23. This law approves the regulations for the professional practice of maritime commercial fishing and the authorization, registration, and licensing of vessels or boats used in this industry. It also addresses co-management. Furthermore, the legal framework is defined by Decree-Law No. 278/87, dated July 7, which was subsequently amended by Decree-Law No. 383/98, dated November 27. These laws establish the foundational principles for engaging in fishing and the cultivation of marine species, along with the fundamental guidelines for managing biological resources. Article 1 of Decree-Law 383/1998 outlines the primary objective of these regulations, which is to oversee maritime fishing and mariculture to ensure the long-term conservation and preservation of marine resources. The ultimate goal is to enable the sustainable utilization of these resources for both commercial and non-commercial purposes.

Article 19 of Decree-Law No. 73/2020 defines the fishing techniques allowed in the territorial sea, Exclusive Economic Zone (EEZ), and maritime inland waters, including a) harvesting; b) line fishing; c) trap fishing; d) trawl fishing; e) surround-trawl fishing; f) purse-seine fishing; g) gillnet fishing. The decree also outlines the licensing requirements for engaging in fishing activities and the associated conditions, amending Order No. 14 694/2003 from July 29 and Order No. 16 945/2009 from July 23. Furthermore, specific regulations, like Order No. 172/2017 governing "xávega" fishing, apply to more specialized cases.

### 4.1.3. Roles & Responsibilities

**Table 4.1.3.1** List of stakeholders and their roles. Source: Prepared by the team on the basis of each stakeholder's official website.

| Organisation   | Type of Stakeholder (Fishermen, NGOs, Government Agencies, etc.) | Roles   |
|--|--|---|
| <b>DGRM-</b><br>Directorate-General for Natural Resources, Safety, and Maritime Services | National/State fisheries management body                         | Ensuring compliance with the CFP and the sustainable management of Portugal's marine natural resources. It's a state management body overseen by three ministries: Economy and the Sea, Agriculture and Food, and Infrastructure.   |
| <b>ICNF</b> - Institute for Nature and Forest Conservation                               | State environment management body.                               | Proposing, monitoring, and ensuring the implementation of nature and forest conservation policies with the aim of preserving, sustainably using, enhancing, enjoying, and publicly recognizing the natural heritage.  |
| <b>IPMA</b> - Portuguese Institute for the Sea and the Atmosphere                        | State research institute   | Government research institute and state laboratory supervised by two ministries: Economy and the Sea; Agriculture and Food. Scientific advice.  |
| <b>DOCAPESCA</b>   | State-owned company  | Under the supervision of the Ministry of Agriculture and Food, in accordance with Decree-Law No. 107/90 of March 27, it is responsible for the public service of First Sale of Fishery Products in mainland Portugal, as well as providing support to the fishing sector and its ports. Due to its characteristics, DOCAPESCA is geographically distributed across mainland Portugal, with its headquarters in Lisbon. Docapesca comprises five Port and Auction Market Directorates, namely: North and Matosinhos, North Central, Central, South Central, and Algarve. |
| <b>OP-</b> Producer Organizations  | Fishers  | There are 12 OPs acknowledged by the DGRM, representing multiple fishermen and fleet segments.  |
| <b>ICCAT</b> - International Commission for the Conservation of Atlantic Tunas           | RFMO   | It is responsible for the conservation and management of approximately 30 tuna and tuna-like species, as well as other marine resources in the Atlantic Ocean and adjacent seas.  |
| <b>ICES-</b> International Council for the   | International Research Institute                                 | Scientific advice and recommendations on the state of stocks.   |

|  |                            |   |
|--|----------------------------|---|
| Exploration of the Sea   |                            |   |
| <b>MARE</b> - Centre of Marine and Environmental Sciences                        | Research center            | A multidisciplinary research, technological development, and innovation center, with an integrative and holistic approach, encompassing a wide range of skills, capabilities, and resources, operating nationally and focusing its research activities on societal issues and challenges. It collaborates closely with national and international research centers and was established as a multipolar center in January 2015, comprising seven branches, six of which are affiliated with Portuguese higher education institutions (University of Coimbra (MARE-UCoimbra), Polytechnic Institute of Leiria (MARE-Polytechnic of Leiria), University of Lisbon (MARE-ULisboa), New University of Lisbon (MARE-NOVA), ISPA - University Institute (MARE-ISPA), and University of Évora (MARE-UÉvora), with one branch located in the Madeira archipelago (MARE-Madeira)). MARE possesses the technical and scientific expertise to address various aquatic ecosystems, including river basins, adjacent areas, estuaries, coastal marine ecosystems, and the open ocean. |
| <b>CCMAR</b> : Center of Marine Science of the University of Algarve             | University Research Centre | Focused on research and development in marine sciences, CCMAR aims to promote multidisciplinary scientific research and advanced training related to the marine environment, with an emphasis on environmental changes affecting marine ecosystems. In this regard, CCMAR researchers seek to understand the causes and consequences of these environmental changes and to develop approaches for conserving and unlocking the potential of living marine resources.  |
| <b>CESAM</b> : Center for Environmental and Marine Studies, University of Aveiro | University Research Centre | CESAM's mission is to develop internationally research in Environmental and Marine Sciences, following a multi-actor and multisectoral approach, framed within four multidisciplinary thematic areas that promote scientific knowledge and the link between science and policies: Functional Ecology & Biodiversity; Environment & Health; Marine Ecosystems & Resources; Integrated Environmental Systems. The main objective of CESAM is to promote a more efficient use of terrestrial and aquatic environmental resources (from river basins to the deep sea), leading to a more competitive, resilient, and sustainable economy. It also aims to foster advanced training, highly qualified scientific employment, and ensure territorial and social cohesion.   |
| <b>CETEMARES</b> , R&D Center, Training and Dissemination                        | University Research Centre | It plays a crucial part in bridging the gap between academic research and the business sector. Additionally, it actively participates in the co-  |



|   |     |  |
|---|-----|--|
| of Maritime knowledge, School of Tourism and Technology of the Sea, Peniche - Polytechnic Institute of Leiria |     | management initiative for barnacles within the Berlengas Natural Reserve.  |
| <b>ANP</b> in association with <b>WWF</b>   | NGO | NGO involved in co-management processes at national level, among other projects related to sustainable fisheries management.   |
| <b>PONG-Pesca:</b> Platform of Portuguese Non-Governmental Organizations on Fisheries.                        | NGO | This is a platform that brings together 8 Portuguese environmental NGOs dedicated to fisheries-related issues. These NGOs include APECE, WWF, Sciaena, LPN, QUERCUS, GEOTA, OMA, and SPEA. |

Source: Team's own elaboration based on the official website of each stakeholder

#### 4.1.4. Consultation, roles and responsibilities

In Portugal, fishing in maritime waters falls under the jurisdiction of the Ministry of Agriculture and Fisheries and is managed by its Directorate-General for Natural Resources, Safety, and Maritime Services (DGRM). Scientific advice in this domain is provided by the Portuguese Institute for the Sea and the Atmosphere (IPMA). Non-maritime inland waters are under the purview of the Ministry of Environment and Energy, and fishing activities are overseen by the Institute for Nature Conservation and Forests. This entity also holds responsibilities in the management of natural reserves and marine protected areas.

All of these institutions have well established protocols covering their purpose, roles, operation, representation, consultation, and decision-making process, as well as for communicating policy, plans, decisions, and other information. Their roles are well understood and the interaction between them works effectively.

#### 4.1.5. Long term objectives for the fisheries

The CFP has established specific precautionary and maximum sustainable yield (MSY) objectives to ensure sustainable fisheries. These objectives include recovering stock biomass above the MSY and achieving exploitation rates at that level by 2015 wherever possible. Furthermore, there is a progressive, incremental goal to attain these targets, with the latest deadline set for 2020 for all stocks. The EU Marine Strategy Directive (Directive 2008/56/EC) also mandates Member States to enhance the integration of environmental considerations into relevant policies, such as the CFP. This integration aims to achieve 'good environmental status' in the marine environment by developing and implementing national-level policies based on an ecosystem approach.

In Portugal, the legal framework also encompasses Regulatory Decree No. 43/87, dated July 17, which outlines measures for the conservation of biological resources. This regulatory decree has undergone modifications through subsequent regulatory decrees, including Regulatory Decree No. 28/90, dated September 11, Regulatory Decree No. 30/91, dated June 4, Regulatory Decree No. 7/2000, dated May 30, Regulatory Decree No. 15/2007, dated March 28, and Regulatory Decree No. 16/2015, dated September 16.

#### 4.1.6. Control, enforcement, and compliance

The overarching requirements for monitoring, control, and surveillance (MCS) within the CFP are outlined in the Fisheries Control Regulation which has gone through successive updates, the most recent of which (Regulation (EU) n° 1380/2013 of the European Parliament and of the Council, of 11 December 2013) entered into force on 1 January 2014 (amended by Regulations 1385/2013, 2015/812, 2017/2092, 2019/1241, 2023/2842).

The primary aim is to enhance the effectiveness of European fisheries control systems and foster a culture of compliance. The operational procedures of the EU MCS systems are well-established, implemented transparently, and adhere to clear specifications.

Moreover, Regulation Regulation (EC) No 1224/2009 (amended by Regulation (EU) 2023/2842) establishes a control system to ensure adherence to the CFP. It lays down the basis for each Member State to apply, in a similar manner, measures and mechanisms to ensure compliance with fisheries rules and the monitoring and control of the activity. Article 9, on vessel monitoring, establishes that Member States shall use a satellite-based vessel monitoring system with the objective of effectively monitoring the fishing activities of vessels flying their flag, both in national and external waters.

Additionally, Commission Regulation (EC) No 1077/2008, effective since 2008, sets detailed rules for electronic recording and reporting of fishing activities, including the use of the Automatic Electronic Device (AED). This device facilitates the communication of data on each vessel's catch to control centers. The AED data, transmitted daily, enables near-instantaneous monitoring of catches, aiding in the control of fishing quotas, among other aspects.

Portugal as a Member State of the European Union, its fisheries are subject to the principles and practices of the CFP, including its MCS systems. However, control and enforcement activities are an exclusive national competence. The DGRM is responsible for monitoring, enforcement and inspection of fishing. There is clear system of monitoring quota uptake, based on e-logbooks for vessels over 12 meters and paper logbooks for vessels over 9 meters, cross referenced with sales notes.



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