Analysis of Marine (water) Protected Areas in EUSAIR and Proposals for Corrective Measures

Final Report

Contracting Authority:	Government Office of the Republic of Slovenia for Development and European Cohesion Policy
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ABBREVIATIONS

ACCOBAMS … Agreement on the Conservation of Cetaceans in the Black Sea Mediterranean Sea and Contiguous Atlantic Area
ATBA … Area To Be Avoided
BWM … Ballast Water Management
CBD … Convention on Biological Diversity
CCH … Cetaceans Critical Habitats
DOM … Dynamic Ocean Management
EBSA … Ecologically or Biologically Significant Marine Area
EEA … European Environmental Agency
EEZ … Exclusive Economic Zone
EU … European Union
EUSAIR … European Union Strategy for the Adriatic and Ionian Macro-region (Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro, North Macedonia, Serbia, Slovenia)
FRA … Fishery Restricted Area
GIS … Geographic Information System
IBA … Important Bird Area
ICCA … Territories and Areas Conserved by Indigenous Peoples and Local Communities
ICZM … Integrated coastal zone management
IMMA … Important Marine Mammal Area
IMO … International Maritime Organization
IPA … Important Plant Area
IUCN … International Union for Conservation of Nature
IUCN WCPA … IUCN World Commission on Protected Areas
KBA … Key Biodiversity Area
LMMA … Locally Managed Marine Area
MPA … Marine Protected Areas
MSFD … EU Marine Strategy Framework Directive
MSP … Maritime Spatial Planning
OHI … Ocean Health Index
OECM … Other Area-based Effective Conservation Measures
OWF … Offshore Wind Farm
PSSA … Particularly Sensitive Sea Area
SEA … Strategic Environmental Assessment
TENN … Trans-European Nature Network of protected territories
TSS … Traffic Separation Schemes
UN … United Nations
UNCLOS … United Nations Convention on the Law of the Sea
UNEP … United Nations Environment Programme
UNEP-WCMC … UN Environment World Conservation Monitoring Centre WCC
UNESCO … United Nations Educational, Scientific and Cultural Organization
WDPA … World Database on Protected Areas
WWF … World Wide Fund for Nature

1.INTRODUCTION AND BACKGROUND

1.1. Preamble

The EU Strategy for the Adriatic and Ionian Region (EUSAIR) is one of four macro-regional strategies adopted by the European Commission and supported by the European Council. The aim of the policy process is to improve the quality of life on the coasts of the common sea through concrete agreements and the implementation of regimes based on the consideration of coastal and marine ecosystem services in the Adriatic-Ionian region.

EU members states in the EUSAIR are Croatia, Greece, Italy, Slovenia; non-EU member states are: Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, Serbia (the latter two countries have no marine areas inside their territories). The countries are aiming to create synergies and foster coordination among all territories in the Adriatic-Ioninan Region in four thematic areas/pillars.

The specific objectives of the the Pillar 3 (**Environmental Quality**) are:

-to ensure a good environmental and ecological status of the marine and coastal environment by 2020 in line with the relevant EU acquis and the ecosystem approach of the Barcelona Convention.

-to contribute to the goal of the EU Biodiversity Strategy to halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restore them in so far as feasible, by addressing threats to marine and terrestrial biodiversity.

-to improve waste management by reducing waste flows to the sea and, to reduce nutrient flows and other pollutants to the rivers and the sea.

Two topics are identified as pivotal in relation to environmental quality in the Adriatic-Ionian Region:

Topic 1 – The marine environment

Topic 2 – Transnational terrestrial habitats and biodiversity

1.2. Scope of work

Government Office of the Republic of Slovenia for Development and European Cohesion Policy signed a contract with the European Commission for implementation of Facility Point Plus project. Within the project the support activities of the implementation of the European Union Strategy for the Adriatic and Ionian Macro-region (EUSAIR) are carrying out.

The general objective of this consultancy is to support activities related to the implementation of the European Union Strategy for the Adriatic and Ionian Macro region (EUSAIR), focusing on the Pillar 3: Environmental Quality and Topic 2: the marine environment and its effective protection.

The specific objectives are:

a) to compile information on Marine Protected Areas (MPAs) in the EUSAIR region and assess progress at country and regional level towards achieving the CBD Aichi targets and the targets set in the EU Biodiversity Strategy 2030;

b) to identify areas where new MPAs or areas requiring special measures to conserve biodiversity could be established or existing areas could be extended and make proposals where this is possible;

c) to propose complementary measures for sustainable fisheries in MPAs in the Adriatic-Ionian ecoregion;

d) to provide recommendations for sustainable use of marine resources in MPAs for key sectors based on the ecosystem approach, and

e) to establish links with the UN Global Process "Biodiversity Beyond National Jurisdiction" for the Adriatic-Ionian ecoregion.

Table 1: Project identification

Identification number	4302-10/2021-2
Date of tender publication	28 January 2021
Closing date	14 February 2021
Signature date	30 March 2021
Name of the project	Analysis of Marine (water) Protected Areas in EUSAIR and Proposals for Corrective Measures
Contracting Authority	Government Office of the Republic of Slovenia for Development and European Cohesion Policy Kotnikova 5 SI-1000 Ljubljana Contact Person: Mojca Krisch, Head, Sector for European Territorial Cooperation
Contract description	The project will analyse the status of Marine Protected Areas in the EUSAIR region, identify areas of special conservation values, propose complementary measures for the sustainable use of marine resources in the MPAs of the Adriatic Ionian Ecoregion for key sectors and make recommendations for the protection of marine biodiversity within and beyond the limits of national jurisdiction.

1.3. Definitions

Term	Definition
Candidate OECM	A geographically defined space that has been identified as a "potential OECM" and the governance authority has consented to it being assessed against the CBD criteria.
Ecologically and Biologically Significant Marine Areas	EBSAs are special areas in the ocean that serve important purposes, in one way or another, to support the healthy functioning of oceans and the many services that it provides.
Ecosystem approach	The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Application of the ecosystem approach will help to reach a balance of the three objectives of the Convention. It is based on the application of appropriate scientific methodologies focused on levels of biological organization which encompass the essential processes, functions and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of ecosystems. (https:// www.cbd.int/ecosystem/).
Ecosystem functions	An integral part of biodiversity, and are defined as the biological, geochemical and physical processes that take place or occur within an ecosystem.
Ecosystem services	Ecosystem services include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation and disease; and supporting services such as soil formation and nutrient recycling.
Favourable Conservation Status	Conservation status will be taken as 'favourable' when: population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a longterm basis
Good Environmental Status	A qualitative description of the state of the seas that the European Union's Marine Strategy Framework Directive requires its Member States to achieve or maintain by the year 2020
Locally managed marine area	A locally managed marine area (LMMA) is an area of nearshore waters and its associated coastal and marine resources that is largely or wholly managed at a local level by the coastal communities, landowning groups, partner organizations, and/or collaborative government representatives who reside or are based in the immediate area. (http://lmmanetwork.org/)
Marine Environment	The marine waters and their contents of natural resources, plants, fishes, other marine creatures, and the above atmosphere, as well as fixed and movable installations and projects established in the marine environment.
Marine Protected Area – IUCN definition	IUCN definition: A clearly defined geographical space of marine character or influence, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. EEA definition: Marine protected areas (MPAs) are in general defined as geographically distinct zones for which conservation objectives can be set and the management of which should be based on an ecosystem-based approach.
Potential OECM	A geographically defined space that has been identified as having OECM-like characteristics by applying the screening tool but where the governance authority has yet to consent to it becoming a "candidate OECM".
Sustainable development	Linkage of environmental issues with the policy for development and planning to fulfil the needs and aspirations of the present without undermining the ability to achieve future needs and aspirations.
Sustainable tourism	Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities.
Value chains	A sequence of related business activities from the provision of specific inputs for a particular product to primary production, transformation, marketing and up to the final sale of the particular product to consumers.

2. MARINE PROTECTED AREAS OF THE ADRIATIC IONIAN REGION

A degree of area-based protection is already in place in the EUSAIR countries, through the system of nationally designated protected areas, Natura 2000 network of sites established under the EU Birds and Habitats Directives and their equivalent in the non-EU countries (the EMERALD network), international and regional conventions and agreements and other effective area-based conservation measures.

However, as EEA reports, networks of protected and conserved areas in the Adriatic Ionian region cannot be considered representative and ecologically coherent. Gaps still exist in terms of representativeness, coherence, adequacy and management effectiveness.

2.2. Policy framework for creation of the marine protected area systems

An extensive international and EU policy framework supports the creation of MPAs in the region already exists and it is complemented by the national legislation for establishment of the nationally designated areas.

Conservation and sustainable management of the marine environment are mandated by a number of international agreements and legal obligations. Those which include specific requirements for area-based protection in the Adriatic-Ioninan region include:

- the UN Convention on Biological Diversity
- the UN Sustainable Development Goals
- the EU Biodiversity Strategy 2030
- the EU Marine Strategy Framework Directive (MSFD)
- the Barcelona Convention
- the Ramsar Convention
- the World Heritage Convention
- UNESCO MAB Reserves

2.3. Coherent Trans-European Nature Network of protected territories (TENN)

The EU Biodiversity Strategy 2030 sets an ambitious objective of establishing a truly coherent Trans-European Nature Network, to include **legal protection for at least 30% of the land, including inland waters, and 30% of the sea in the EU, of which 1/3 (10% of land and 10% of sea) to be under strict protection.**

The Strategy identifies the need to concentrate, for the identification of areas to be protected, on areas of very high biodiversity value or potential.

The designation of additional protected and strictly protected areas, either to complete the Natura 2000 network or under national protection schemes, including the spatial protection measures to comply with the Water and Marine Strategy framework directives, **will be a responsibility of the Member States**. **All protected areas will be expected to have clearly defined conservation objectives and measures**. The Strategy highlights the need for effectively managed protected areas, which applies to the new areas that will be designated but also to all existing areas, including Natura 2000 sites and those under a national protection regime.

According to the Strategy, the Commission, together with the Member States and the European Environment Agency, will put forward criteria and guidance for identifying and designating additional protected areas, including a definition of strict protection, as well as for appropriate management planning.

The guidance to be put forward by the Commission will, among other things, indicate how other effective area-based conservation measures (OECMs) and greening of cities could contribute to the above-mentioned targets. It will also make the necessary links with the restoration targets in the Strategy.

All protected areas will be expected to have clearly defined conservation objectives and measures. The Strategy highlights the need for effectively managed protected areas, which applies to the new areas that will be designated but also to all existing areas, including Natura 2000 sites and those or under a national protection regime.

The components that constitute a coherent Trans-European Network of protected areas in Europe (EU countries and EU accession countries) comprise nationally and internationally designated areas **(MPAs**), **Natura 2000** areas and **OECM**s.

2.3.1. The "10 % strict protection target"

States and the European Environment Agency, will put forward a definition of strict protection, as well as for appropriate management planning for strictly protected areas.

The focus of strict protection should be on:

- areas of very high biodiversity value or potential,
- significant areas of carbon-rich ecosystems (incl., for example, seagrass meadows),
- important fish spawning and nursery areas.

The designation of additional protected and strictly protected areas will be the responsibility of the Member States.

Box 1a: Why **"strict protection of the marine environment"** is needed: partially-protected marine protected areas provide limited benefits for biodiversity

Australia has one of the largest marine protected area networks in the world, which includes iconic locations such as the Great Barrier Reef, Jervis Bay in New South Wales, Wilson's Promontory in Victoria and Rottnest Island in Western Australia.

But only one quarter of this network is fully protected. The remaining three quarters are only partially protected, with vast areas allowing fishing, aquaculture and mining exploration. This is despite industrial-scale extraction of resources going against the IUCN protected area standards (Dudley, 2008, 2013).

So why is this a problem? Recent research papers show partially protected areas don't contribute much to wildlife conservation, yet take valuable conservation resources away from fully protected areas, which need them more. Marine protected areas (MPAs) are a primary tool for the stewardship, conservation, and restoration of marine ecosystems, yet 69% of global MPAs are only partially protected (i.e., are open to some form of fishing).

Although fully protected areas have well-documented outcomes, including increased fish diversity and biomass, the effectiveness of partially protected areas is contested. Partially protected areas may provide benefits in some contexts and may be warranted for social reasons, yet social outcomes often depend on

MPAs achieving their ecological goals to distinguish them from open areas and justify the cost of protection.

Recent research by Turnbull et al. (2021) demonstrate that partially protected areas:

- had no more fish, invertebrates, or algae than open areas;
- were poorly understood by coastal users;
- were not more attractive than open areas; and
- were not perceived to have better marine life than open areas.

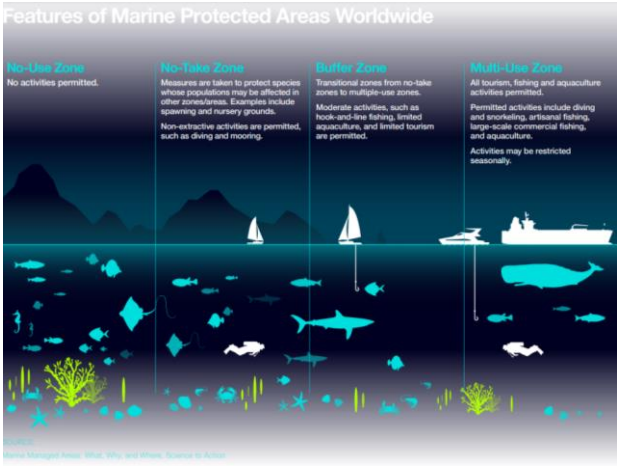
These findings provide an important counterpoint to some large-scale meta-analyses that conclude partially protected areas can be ecologically effective but that draw this conclusion based on narrower measures. Researchers claim that partially protected areas create an illusion of protection and consume scarce conservation resources yet provide little or no social or ecological gain over open areas.

Fully protected areas, by contrast, have more fish species and biomass and are well understood, supported, and valued by the public. They are perceived to have better marine life and be improving over time in keeping with actual ecological results. Conservation outcomes can be improved by upgrading partially protected areas to higher levels of protection including conversion to fully protected areas.

Source:
Turnbull, J.W., Johnston, E.L., Clark, G.F. (2021): Evaluating the social and ecological effectiveness of partially protected marine areas. Conservation Biology https://doi.org/10.1111/cobi.13677

Box 2: Impacts of strictly protected MPAs on marine biodiversity

By offering protection from certain pressures, such as fishing, MPAs may allow species to better withstand pressures such as sea surface temperature (SST) rise and ocean acidification, resulting in greater overall marine health within designated areas.



Analysis of 124 temperate and tropical MPAs in 29 countries identified large increases in biomass (+446%) and densities (+166%) of organisms inside no-take protected areas, plus smaller increases of individual size (+28%) and species richness (+21%) compared to non-protected areas.

Source: Lester *et al.*, 2009

Strictly protected areas already exist in several Member States, sometimes with different designations and with varying degrees of 'strictness' (e.g. included in the zoning of marine protected areas or through designations such as nature reserves, scientific reserves, marine 'no-take zones', etc.). In the marine environment, strict reserves and no-take areas are the most effective type of protected area delivering most benefits for biodiversity and society, much greater than partly protected or "multi-use" MPAs.

It is believed that "strict protection" could be applied to completely natural ecosystems where no or very limited human activities are allowed (Strict Nature Reserves - IUCN Ia, Wilderness Areas - IUCN Ib, National Parks - IUCN II). It is not clear whether "strict protection" can also be implied within sustainably managed landscapes and seascapes. Also in the EU Nature Directives, which supports the establishment of the Natura 2000 network, "strict protection" is not defined.

2.3.2.Nationally designated protected areas

IUCN has developed a set of guidelines which define a protected area and categorise a protected area through six management categories (see: Dudley, N. (ed.) (2008). *Guidelines for Applying Protected Area Management Categories.* Gland, Switzerland: IUCN; in the following: the 2008 Guidelines). To qualify for one or more of the IUCN categories, a site, also a marine area, must meet the IUCN definition of a protected area:

> **"*A protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values"***

Implications of the **marine protected area** definition (Day et al., 2019):

- A **protected area** as defined by IUCN describes a precise set of management approaches with limits, and must have nature conservation as a **primary** rather than a secondary aim.
- MPAs must be mapped and have boundaries that are legally defined. It has to be noted, however, that for some MPAs it may be difficult to mark the boundaries, especially if the MPA is offshore
- In MPAs, management may need to address the airspace above the sea surface, the actual water surface, the water column (or parts of it), the seabed and the sub-seabed, or just one or a combination of two or more of these elements.
- Long-term protection (over timescales of human generations) is necessary for effective marine conservation. Seasonal closures of an area for a specific purpose (such as fish spawning, whale breeding, etc), in the absence of any additional biodiversity protection and any primary nature conservation objective are not considered to be MPAs.
- MPAs provide a wide range of ecosystem services. But those areas which were established with the primary management objective not focused on conservation are generally not marine protected areas (for example: areas set up for wave/wind power are generally not protected areas).

IUCN recognised six protected area categories which are determined based on the management objectives (Dudley, 2008, 2013)

The features that clearly distinguish the network of Natura 2000 sites based on the Birds and the Habitats Directives from nationally designated protected areas are the following:

- Natura 2000 sites are established on the basis of habitats and species of Pan-European rather than national importance,
- the focus of Natura 2000 sites is on specific species and habitats rather than on biodiversity as a whole or associated attributes such as natural beauty, outstanding natural features, landscape values, wilderness, etc.,
- the criteria for the selection of Natura 2000 sites, the definition of their conservation objectives and the resulting management implications are based on scientific data and measurable ecological parameters,
- the underlying principles of the creation of the Natura 2000 network are based on the biogeographical and not on the national context.

The legal obligation to establish the Natura 2000 network based on scientific data and ecological criteria led to an increasing expansion of marine (and terrestrial) areas under protection (see, for example, chapter 4.3. for Croatia). However, the process of establishing Natura 2000 sites (particularly marine sites) is not yet complete, partly because there are no legally binding deadlines to force Member States to complete the process of establishing the coherent Natura 2000 network.

2.3.3.Natura 2000

Over the years the EU has established an increasingly robust policy framework to address the multiple challenges facing its marine environment and to ensure a more sustainable ecosystems-based approach to the use of its marine resources. The Habitats and Birds Directives, along with the Marine Strategy Framework Directive, are the environmental pillar of the wider Integrated Maritime Policy. They are also at the heart of the EU's contribution to international efforts, including the four Regional Seas Conventions (HELCOM, OSPAR, Barcelona, Black Sea).

The Habitats Directive lists nine marine habitat types and 16 species for which Natura 2000 site designation is required, whilst the Birds Directive lists a further 60 bird species whose conservation requires marine site protection. To date, more than 3000 marine Natura 2000 sites have been designated, which cover more than 5% of the total EU marine area (over 300,000 km^2).

»*Marine protected areas in Europe's seas. An overview and perspectives for the future*«, EEA Report No 3/2015, provides information on the status and extent of the marine territories under protection in the EU. https://www.eea.europa.eu/publications/marine-protected-areas-in-europes

EU prepared "*Guidelines for the establishment of the Natura 2000 network in the marine environment. Application of the Habitats and Birds Directives*" document, which is available here:
https://ec.europa.eu/environment/nature/natura2000/marine/docs/marine_guidelines.pdf

The EEA report on marine protected areas in Europe's sea concludes that the Natura 2000 network is focused on selected species and habitats only and the network in some states, including Adriatic Ionian region, is still not complete. These are the main reasons why only Natura 2000 network is not able to provide a representative and ecologically coherent network of MPAs. In addition, only a small proportion of sites are designated as 'no take' zones and management effectiveness of the designated sites is weak.

Habitats and species that are not listed in the EU Directives, but which may be locally, nationally or internationally important, can only be afforded the necessary protection through the nationally designated protected areas.

EEA report underlines that many Natura 2000 sites have typical coastal character and the extent of protected sea is not sufficient.

The above shortcomings of the marine Natura 2000 network in the level of protection for important species and habitats that are threatened or declining, justifies the need to strengthen efforts to designate nationally designated areas and other area-based designations.

2.3.4.The Marine Strategy Framework Directive

The Marine Strategy Framework Directive, together with Maritime Spatial Planning Directive, provides the policy framework for effective and sustainable management of the marine environment and calls for good status for marine species and habitats. The link between the protection of the environment and the use of natural resources in the MSFD is based on the principles of the ecosystem approach. However, the implementation of this approach is weak: the exploitation of marine resources is largely based on the harvesting of natural species, and the impacts on biodiversity are largely related to fishing, including the side effects of fishing (habitat destruction, by-catch, impacts on marine mammals and seabirds, etc.). In the marine environment, even more than in managed landscapes, the concept of "no take" zones and strictly protected areas is essential for the protection of natural marine biodiversity. Pollution, underwater noise, invasive alien species and climate change are just some of the other threats to the seas.

While EU seas celebrate the achievement of CBD Target 11 for marine protected areas by 2020 (10% of the seas under protection), the extent of MPAs in the Adriatic-Ionian region is the lowest in the Mediterranean. The extent of strictly protected marine areas in the EUSAIR region is almost nil: there are almost no 'no-take' fishing zones across the region, which remains a threat to marine species and habitats. Most MPAs are not effectively managed.

2.3.5. Other Effective Area-based Conservation Measures (OECMs)

According to the definition adopted by the CBD in 2018, "Other Effective Area-based Conservation Measures (OECMs)" means "*a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and, where applicable, cultural, spiritual, socioeconomic, and other locally relevant values*"; https://www.cbd. int/doc/c/9b1f/759a/dfcee171bd46b06cc91f6a0d/sbstta-22-l-02- en.pdf

Other Effective Area-based Conservation Measures (OECMs) also bring conservation benefit, but that is not their primary objective. https://www.cbd.int/sp/targets/rationale/target-11/
Despite clear definitions of both MPAs and OECMs, clarification is still needed about what 'protection' actually means. Experts and stakeholders currently work to refine understanding of OECMs.

More on the process of identification and recognition of the OECMs towards the EU biodiversity strategic goals by 2030, with emphasis on marine areas, is presented in chapter 5.

3.INVENTORY OF MARINE PROTECTED AREAS IN THE ADRIATIC – IONIAN REGION

3.1. Objective of the analyses

The EU Biodiversity Strategy 2030 recognises that the current network of legally protected areas, including those under strict protection, is not large enough to safeguard biodiversity. The Strategy sets a target that at least 30% of the EU's land area and **30% of the EU's marine area** should be **protected**; at least one third of protected areas - that is 10% of the EU's land area and **10% of the EU's marine area** - should be **strictly protected**. The language of the strategy explicitly talks about **protecting the EU sea, the marine component**.

There was a lack of an accurate database and inventory of MPAs in the Adriatic-Ionian region. In particular, it was not known how much sea is protected in the region. Nor was the identification of potential sites with the highest biodiversity values in the EUSAIR region compiled; such a compilation should enable future strategic and coordinated action to effectively protect marine natural values and promote sustainable development in the region.

The scope of the analyses was to compile information on marine protected areas (MPAs) in the EUSAIR region, with a focus on identifying the **marine environment under protection**; this requirement was highlighted in the title of the tender documents ("...analyses of ***marine (water) protected areas*** in EUSAIR..."), referred to the marine part of the region. The second task was to identify areas where new MPAs or areas requiring special measures for biodiversity conservation could be established or existing areas could be extended.

3.2. Methodology for the analyses of spatial data

The inventory of marine protected areas developed as part of these analyses is focused on the marine area within the boundaries of the region Adriatic-Ionian. The definition of the exact boundaries of the "Adriatic-Ionian Sea" was also part of the project.

3.2.1.Identification of the boundaries of the microregion and the basic databases for the compilation of the EUSAIR inventory on MPAs

In describing the boundaries of the EUSAIR region for the purpose of compiling the inventory of marine protected areas, the following characteristics need to be considered:

- There are two countries in the Adriatic-Ioninan Macro region that have no marine area (North Macedonia, Serbia).
- There is one country where only part of the landlocked area is part of the EUSAIR region (Italy).
- The Greek maritime area belongs to two regional seas; the eastern part to Ionian Sea and the western part to Aegean Sea.
- Three borderlines of the EUSAIR region (the western, the southern and the eastern) are defined on the sea; this means that only part of the maritime areas of Italy and Greece are included in the microregional boundaries for the purpose of this analysis.

The boundaries of the terrestrial EUSAIR area were obtained from the macroregional strategy website and are shown in Figure 1 below.

Figure 1: Boundaries of the EUSAIR terrestrial area
https://ec.europa.eu/regional_policy/sources/cooperate/adriat_ionian/pdf/brochure_sl.pdf

The map of MSFD areas was used to define the entire marine EUSAIR region; the central Ionian region was removed from the data, leaving the boundaries of the Adriatic-Ionian region.

The boundaries of the EUSAIR marine area are presented in the Figure 2 below.

Figure 2: Boundaries of marine area in the EUSAIR region

Several databases and sources were used to define the boundaries of the area for the identification and recognition of the extent of the marine area under protection (nationally protected areas, Natura 2000 areas, international designations, potential areas of high biodiversity values). The MAPAMED database served as the basis for this inventory.

Box 2: What is MAPAMED?

MAPAMED (Marine Protected Areas in the Mediterranean) is a GIS database that collects information on marine protected areas in the Mediterranean and more generally on areas of interest for the protection of the marine environment. http://medpan.org/main_activities/mapamed/ It is developed and jointly managed by the MedPAN Association and SPA / RAC.

MAPAMED data are validated by all the Focal Points for Specially Protected Areas and Biological Diversity (SPA /DB) of SPA /RAC, the centre that coordinates the implementation of the SPA /DB protocol of Barcelona Convention.

The MAPAMED MPA boundaries and baseline data conform to the standards of the World Database on Protected Areas. The WDPA is the United Nation official database for protected areas at the world scale. The EU database on standard data forms is integrated in MAPAMED for Natura 2000 marine protected areas https://www.eea.europa.eu/data-and-maps/data/natura-9.

The MAPAMED database consists of shp files of protected areas. The data on each protected area unit in the database contains information on: area name (and country), name, IUCN category, designation type and year of designation, managing authority. Three categories refer to the spatial data: the total size of the protected area, the marine part (as provided by the data provider) and the marine part as calculated with the tools of GIS. The next column defines the character of the area: if the marine part predominates, the area is called "marine" (=MPA), if the terrestrial part accounts for most of the total area of the area, the area is called "terrestrial" (=TPA).

MAPAMED has recently been updated by the Marine Protected Areas in the Western Mediterranean Region - Mediterranean Database Completion and Analysis project (Giffon et al., 2018).

Sources and more information:

Shapefile for MPAs in Mediterranean & MSFD areas (Scope of the Barcelona Convention (IHO-MSFD) https://www.mapamed.org/ : MAPAMED, the database of Marine Protected Areas in the MEDiterranean. 2019 edition. © 2020 by SPA/RAC and MedPAN. Licensed under CC BY-NC-SA 4.0.

Giffon et al. (2018). Marine Protected Areas in the Western Mediterranean Region – Mediterranean Database Completion and Analysis (2018

The Natura 2000 Barometer, based on the database on protected and Natura 2000 sites maintained by the European Environmental Agency (EEA), provides the following explanation for determining the "marine" or "terrestrial" character of marine and coastal areas: "*(Natura 2000) sites with a terrestrial component representing more than 5% of the total area are counted as terrestrial sites, while sites with a marine component representing more than 5% of the total area are counted as marine. Coastal areas with a marine component that is more than 5% but less than 95% of the total area are counted as both terrestrial and marine.*" This explains why there are some differences between the data in MAPAMED and the EEA database as far as the extent of the protected sea is concerned: MAPAMED defines more precise information on the extent of the protected sea area.

The results of these analyses are presented in Excel format (attached to this report). The last column in the Excel file ("notes") contains additional information on each of the sites, especially when there are several designations (e.g. some sites have a Natura 200 status determined both by the Habitats Directive and by Birds Directives (SAC, SPA), and in some cases several designations cover the same area, leading to the risk of double counting. For example; Messolongi lagoons in Greece are SPA and SAC Natura 2000 areas and each of the two Natura designations comprises the same territory of 208,34 km2.

In order to avoid or minimize the risk of duplication of data on the extent of protected sites, all data provided were re-checked before being inserted into the database for these analysis. In several cases, verification of MAPAMED data was carried out using the Protected Planet database, which is part of the World Database of Protected Areas and managed by UNEP-WCMC: UNEP-WCMC (2021). Protected Area Profile for Europe from the World Database of Protected Areas, April 2021; available at: www.protectedplanet.net

In many cases, multiple protected area designations are assigned to the same area. Although this does not necessarily mean greater protection for the area in question, it can lead to a risk of duplication of the extent of the protected area in the evidence.

In order to verify the data on the extent of the marine area protected in each country and to allow extraction of the terrestrial parts from the "marine" protected areas, the EEA database was compared with the following data: https://mpatlas.org/countries/

The data on the areas of the countries (marine and inland waters) were taken from the following databases: https://marineregions.org/sources.php; Flanders Marine Institute (2020). Union of the ESRI Country shapefile and the Exclusive Economic Zones (version 3). Available online at https://www.marineregions.org/. https://doi.org/10.14284/403 and Natural Earth (2009 – 2021) Florida State University. Land 10m (version 4.1.0), April 2021. https://www.naturalearthdata.com/downloads/10m-physical-vectors/10m-land/

DG Environment compiled a document, entitled »*Sources of information that can be considered for additional MPA designations*« which presents sources of spatial information on marine habitats and species that may be useful for designation of additional MPAs in the context of the Biodiversity strategy. It includes, for each source, a link to the data, a short description of the dataset, including its geographic cover, and a preliminary assessment of the data's relevance. Some sources may have to be quality checked before being used for additional MPAs designations. The document is attached as an Annex 1 to this report.

3.3. Inventory of marine protected areas in EUSAIR – in brief

3.3.1.Extent of the marine area in the EUSAIR region and by countries

The extent of the sea in the EUSAIR region is 484,017 km2. Italy (Tirenian Sea) and Greece (Aegean Sea) have a larger marine area, but they are not part of the subregion Adriatic-Ioninan (Tirenian Sea, Aegean Sea, Central Mediterranean Sea). The detailed distribution of the seascape in the EUSAIR countries is shown in Table 2.

Table 2: Extent of the marine space in the EUSAIR region by country

Country	Sea Area [km²]	Area EUSAIR [km²]
Italy	541915	222671
Greece	493708	180608
Croatia	59032	59032
Albania	13691	13691
Montenegro	7745	7745
Slovenia	220	220
Bosnia and Herzegovina	50	50
Total:	1.113.361 km²	484.017 km²

3.3.2. Average size of spatial protected marine units in the Adriatic – Ioninan region

Table 3 shows the average size of the designations (MPAs, marine Natura 2000 sites) and the extent of their marine parcels in the Adriatic - Ionian Sea region

Table 3: Average size of MPAs, marine Natura 2000 sites and the combination of both designations in the Adriatic-Ionian Sea region; the first column shows the total designation area, the second column only the extent of the marine area under protection.

	Average size (km2)	Average size of the marine area (km)2
MPAs	60,32	33,68
Marine Natura 2000 areas	73,40	44,63
Combined (MPAs + marine Natura 2000 areas)	71,70	43,62

There are seven times more marine Natura 2000 sites than nationally designated MPAs in the Adriatic-Ionian region, and the size of the average marine Natura 2000 site is generally about one third larger than the size of the average MPA. The extent of marine waters within marine Natura 2000 sites is larger than the extent of the sea within MPAs and covers about 60% of the designated area.

The average terrestrial and marine part in the MPAs covers 60.32 km2 and 73.40 km2 in the marine Natura 2000 sites. The marine part in MPAs covers on average 33.68 km2 and 44.63 km2 in marine Natura 2000 sites.

Box 3: The **Inventory in short**

- In the EUSAIR region there are **46 nationally designated marine protected areas** (protected areas covering at least part of the sea water). The **marine surface** area in these areas **covers 1,680 km2**.
- In addition to the MPAs, there are **348 marine Natura 2000 sites** in four EU Member States. Within these marine Natura 2000 sites, there are **17,268 km2 of marine surface area**; in some of these Natura 2000 sites, marine parts could be designated as SPA (Birds Directive) and SAC (Habitats Directive), which explains a small difference (about 2%) in the total amount of protected marine surface area in nationally designated MPAs and Natura 2000 sites.
- The **total protected marine area in the EUSAIR region**, consisting of **nationally designated marine protected areas and the network of marine Natura 2000 sites** (including possible minor overlaps of some Natura 2000 sites designated as both SPA and SAC, brings this area to 18,663 km2), which corresponds to **3.57% of the marine area of the EUSAIR region**.
- The "strict protection" target (10% of the marine area) includes nationally designated protected areas in IUCN categories Ia, Ib and II. In the whole EUSAIR region there is not a single MPA listed as IUCN category Ia or Ib (after additional clarifications with the competent authorities it became clear that three MPAs in Slovenia listed as IUCN category Ib in the MAPAMED database are misallocated; they are listed as sites of categories III and IV).

- There are only five nationally protected marine areas in EUSAIR region in the IUCN categories I and II which are considered as »strictly protected areas«: two national parks in Albania and three in Croatia, where the total extent of the sea surface under the IUCN II category is 348.76 km2 (131.82 km2 in Albania and 216.94 km2 in Croatia). In other words, **only 0.07% of the marine waters** in the EUSAIR region are currently under **strict protection**.

- The average size of MPAs in the Adriatic-Ionian region is just over 60 km2, while the average marine Natura 2000 site covers more than 73 km2; the average marine Natura 2000 site is about 21% larger than the nationally designated marine protected area. The (sea)water part of MPAs covers on average almost 34 km2, while in marine Natura 2000 sites the sea covers on average more than 44 km2.

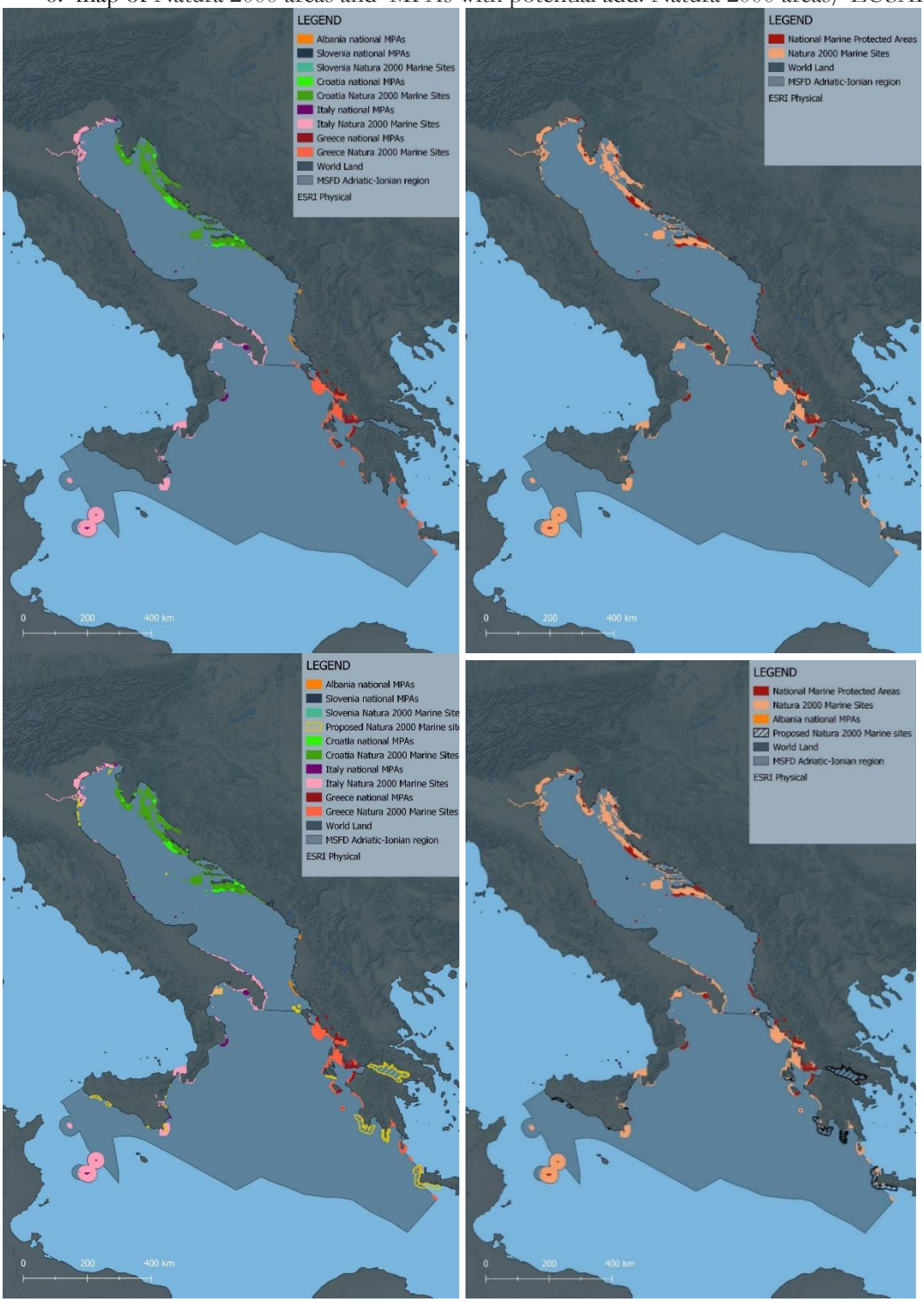
- There are three international protected area designations associated with the marine area in the EUSAIR countries: 12 Ramsar sites, two World Heritage sites (but Butrint in Albania is only listed as a cultural heritage site) and one MAB Biosphere Reserve.

- With the exception of three Ramsar marine sites in Italy (Valle Bertuzzi, Valle di Gorino and Vendicari), for which no data could be found on their classification as national MPAs and/or Natura 2000 sites, all other internationally protected sites are included either in other categories of nationally protected areas (MPAs) and/or in the network of marine Natura 2000 sites. However, the extent of the marine area registered in the database of international protected area designations and in the database of MPAs and/or Natura 2000 sites varies considerably. Some examples to illustrate this: The Amvrakios Delta Ramsar site in Greece covers 61.65 km2 of marine area (according to the MAPAMED database), but the extent of marine area in the Natura 2000 site that includes it is much larger: 409.06 km2. The opposite example is the Ramsar site Neretva Delta in Croatia with an area of 10.08 km2, while the national protected area in this area covers only 5.21 km2 of the marine area.

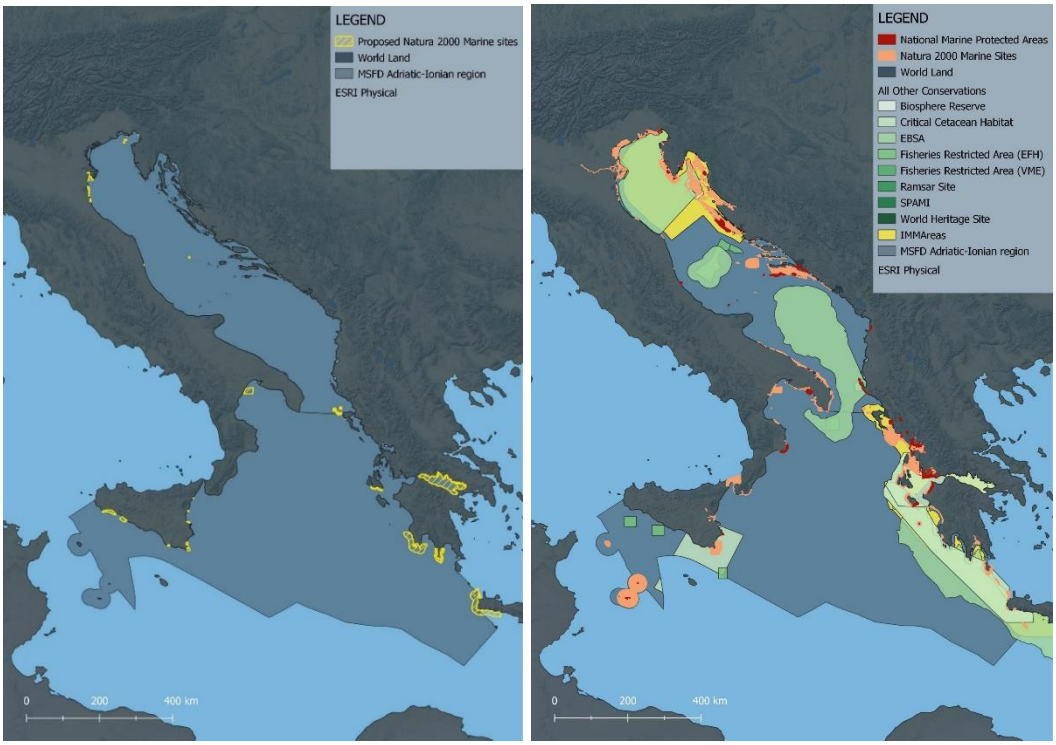
- Taking into account the good coverage/inclusion of the internationally designated areas (Ramsar, World Heritage MAB Reserves) in the MPAs and/or Natura 2000 sites, the internationally protected areas have **not been added as a separate layer**.

3.4. Maps of protected territories in EUSAIR

Figures



Figures
7: map of potential additional Natura 2000 areas/ EUSAIR region
8: map of existing MPA network and other conservation measures / EUSAIR region



The EU Biodiversity Strategy 2030 sets a target of 30% of the marine area to be protected. At the moment, **only 3.57% of the marine area of the EUSAIR region is listed in the MPAs**, including Natura 2000 areas and internationally protected areas. In other words, the area of nationally protected marine protected areas and marine Natura 2000 sites should be increased almost tenfold to achieve the Strategy's target.

3.5. Critical review of the databases and sources

The internal (inland) borders of the EUSAIR region are clearly defined. Only the eastern part of Italy, including Sicily, is part of the Adriatic-Ioninan political delimitation of the region, which implies a particular situation in terms of the obligations of the EU member states towards the Union and a different position in terms of the sub-regional EUSAIR obligations.

The boundaries of the marine part of EUSAIR were not well defined (at least they were not known to the authors of the analyses), so they were prepared specifically for the tasks in this report. It may be that additional clarifications are needed to define precise boundaries in the western, southern, and eastern parts of the Adriatic-Ionian region. The delineation of marine areas is even more challenging as marine areas are outside the national jurisdiction and EEZ.

MAPAMED database was used as the baseline database for the compilation of the inventory. Data from the ProtectePlaned database were used as a source for the review, and the EEA database was also considered

for natura 2000 areas. However, the latter database defines the extent of marine areas using a different methodology than MAPAMED (see: Table 1). It is therefore not surprising that the figures in the MAPAMED and EEA databases differ in terms of the extent of marine protected areas, as shown in the Table 4.

MAPAMED has calculated and measured the extent of the marine ecosystem in each of the "marine and coastal protected areas", while the EEA database, which is used to compile the Natura 2000 barometer, states that "*Natura 2000 sites with a terrestrial component that exceeds 5% of the total area are counted as terrestrial sites, while sites with a marine component that exceeds 5% of the total area are counted as marine sites*". *Coastal areas with a marine component that accounts for more than 5 % but less than 95 % of the total area are counted as both terrestrial and marine areas*".

The difference in interopreting the extent of the marine environment in the MPAs using the EEA (»general«) and MAPAMED (»GIS measured«) approach is best visible in the figures for Greece.

Table 4: comparison of data for nationally designated marine protected areas and Natura 2000 areas using MAPAMED and EEA databases

	Percentage of marine protected areas (including Natura 2000 sites for EU MS) - the total marine area of the country, as indicated in different database sources and using different interpretation of marine and coastal protected areas	
	EEA data (%)	**MAPAMED (%)**
Albania	0,78	0.97
Bosnia and Herzegovina	0	0
Croatia	9,17	9,83
Greece	19,41	1,15
Italy	1,98	1,35
Montenegro	0	0,01
Slovenia	2,48	1,87

A particular challenge in calculating the exact extent of protected areas is the risk of duplication of different designations for a site. Examples include Natura 2000 sites designated under the Birds Directive and Habitats Directive, national designations (e.g. the area of a national park could be larger than the Natura 2000 sites within it) or duplicate designations with international protected areas, such as the Ramsar Convention List of Wetlands of International Importance. Countries should be encouraged to send accurate figures on the extent of land and sea (separately) to the database maintenance units to avoid confusion.

Table 4, EEA column, shows the percentage of terrestrial and marine protected areas in the EUSAIR countries (as of April 2021). Note, however, that MAPAMED's methodological approach to the exact area of marine protected areas is much more precise than the EEA base.

Data in the databases are often outdated or incorrect. The biggest challenge is the list of potential Natura 2000 sites in some countries (Italy, Greece). There is no doubt that some sites listed as "potential Natura 2000 sites" have become SACs in the meantime (e.g. the Miramare Natura 2000 site, Italy).

Some areas that are clearly "marine" (e.g. the Posidonia stocks in Slovenia) are listed as "terrestrial" Natura 2000 sites and vice versa.

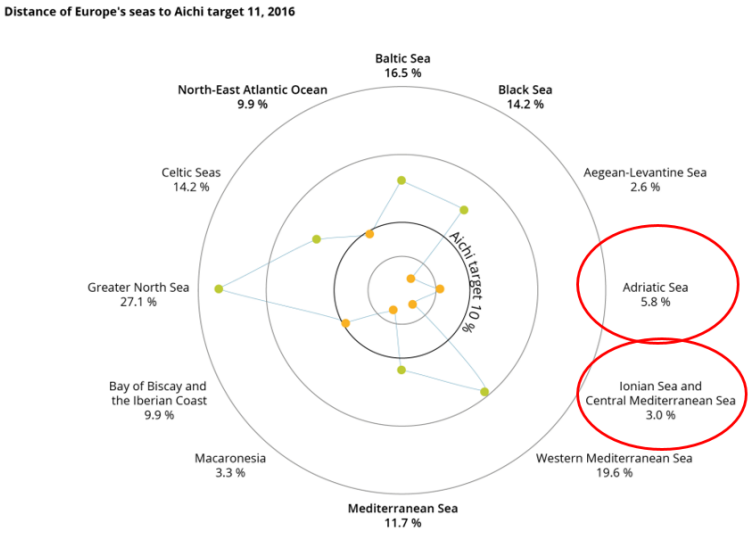
4.MARINE PROTECTED AREA TARGETS IN EUSAIR COUNTRIES

The Convention on Biological Diversity (CBD), adopted in 1992 is the most important international legal instrument addressing protected areas, and supporting and fostering national and multilateral efforts in a comprehensive manner.

At the tenth meeting of the CBD Conference of the Parties, in Nagoya (in 2010) adopted a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the 2011-2020 period. Aichi Biodiversity Target 11 states: »*By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes*«

Figure 9 shows how the Aichi targets for marine areas were met by region in 2016, noting that both coastal and marine (terrestrial and marine) areas were considered in this EEA report. Both the Adriatic Sea and the Ionian Sea were listed at the end of the regional seas according to the level of marine protected areas.

Figure 9: Distance of European seas to Aichi Target 11 (EEA, 2016).



The EEA statistics European Database of Nationally Designated Protected Areas and https://www.eea.europa.eu/data-and-maps/data/natura-11/natura-2000-spatial-data/natura-2000-spatial-lite-1, updated with the latest data for 2021 (provided by EEA, pers.comm.), show that 26% of the EU land area is already protected, of which 18% as part of Natura 2000 and 8% under national schemes. Of the EU's seas, 11% are protected, of which 8% under Natura 2000 and 3% under additional national protection.

As the present analysis/inventory of MPAs for the EUSAIR region shows, the situation in Adriatic-Ioninan seas has not improved since then. This analysis also shows in more detail that the exact marine areas that have some form of official protection cover only 3.57% of the total marine area of the EUSAIR region.
The national protected area targets and their implementation for marine areas, as derived from the analyses carried out in this project, are presented below.

4.1. Albania

Current extent of marine territory in protected areas (MPAs):	132,32 km2 (0,97 %)
Total of MPAs in MAPAMED:	2
-Karaburum-Sazani NP (IUCN ctg.II),	
-Patok-Fushekuqe-Ishem (IUCN ctg.IV) Managed Nature Reserve	
Percentage of the EUSAIR regional sea protected	
-Nationally designated MPAs:	0,97%
-Natura 2000 marine areas:	n.a.
Strictly protected marine MPAs (IUCN ctg. I or II):	124,28 km2 (=94%)
National marine protected area target (by 2030):	1,19% (Aichi T11 marine: 10%)
Achievement of the 10% marine Aichi T 11 by 2020:	

**Albania is not member of the EU and has not established the Natura 2000 network*

4.2. Bosnia and Herzegovina

Current extent of marine territory in protected areas (MPAs):	0 km2
Total of MPAs in MAPAMED:	0
Percentage of the EUSAIR regional sea protected	
-Nationally designated MPAs:	0,0 %
-Natura 2000 marine areas:	n.a.
Strictly protected marine MPAs (IUCN ctg. I or II):	0
National marine protected area target:	not set (Aichi T11 marine: 10%)
Achievement of the 10% marine Aichi T 11 by 2020:	not relevant

Bosnia and Herzegovina is planning to establish two coastal and marine protected areas: Botanic and Floristic Reserve Mediteraneum (12,56 km2) and potential Natura 2000 area Kek Penninsula (19,33 km2); the latter also comprises marine area.

**Bosnia and Herzegovina is not member of the EU and has not established the Natura 2000 network*

4.3. Croatia

Current extent of marine territory in protected areas (MPAs):	5.889 km2 (9,98 %)
Total of MPAs in MAPAMED:	19
Percentage of the EUSAIR regional sea protected	
-Nationally designated MPAs:	1,04 %
-National MPAs + Natura 2000 marine areas:	9,98 %
Strictly protected marine MPAs (IUCN ctg. I or II):	249,24 km2 (=4,3 %)
National marine protected area target:	10 % (Aichi T11 marine: 10%)
Achievement of the 10% marine Aichi T 11 by 2020:	

4.4. Greece

Current extent of EUSAIR marine territory in protected areas (MPAs):	5.711 km2 (3,16 %)
Total of MPAs in MAPAMED:	6
Percentage of the EUSAIR regional sea protected	
-Nationally designated MPAs:	0,25 %
-National MPAs + Natura 2000 marine areas:	3,16 %
Strictly protected marine MPAs (IUCN ctg. I or II)**:	0
National marine protected area target:	10 % (Aichi T11 marine: 10%)
Achievement of the 10% marine Aichi T 11 by 2020:	

*** Thee National parks are listed in the MAPAME, but none of the Greek Marine National parks is listed as IUCN ctg. II in the WDPA*

4.5. Italy

Current extent of EUSAIR marine territory in protected areas (MPAs):	7.060 km2 (3,17 %)
Total of MPAs in MAPAMED:	13
Percentage of the EUSAIR regional sea protected	
-Nationally designated MPAs:	0,21 %
-National MPAs + Natura 2000 marine areas:	3,17 %
Strictly protected marine MPAs (IUCN ctg. I or II):	0
National marine protected area target:	10 % (Aichi T11 marine: 10%)
Achievement of the 10% marine Aichi T 11 by 2020:	

4.6. Montenegro

Current extent of marine territory in protected areas (MPAs):	0***
Total of MPAs in MAPAMED:	0***
Percentage of the EUSAIR regional sea protected	
-Nationally designated MPAs:	0 %
-Natura 2000 marine areas:	n.a.
Strictly protected marine MPAs (IUCN ctg. I or II):	0
National marine protected area target (by 2030):	10 % (Aichi T11 marine: 10%)
Achievement of the 10% marine Aichi T 11 by 2020:	

There is a confusion in the MAPAMED database about the marine protected areas in Montenegro: two areas, Risansko Kotorski zaljev World Heritage site and (Tivatska) Solila Strict nature reserve both contain marine areas, but those are not officially recognised by the national authorities as MPAs.

**Montenegro is not member of the EU and has not established the Natura 2000 network*

****Montenegro is in the preparation to designate first MPA – Platamuni marine area*

4.7. Slovenia

Current extent of marine territory in protected areas (MPAs):	4,18 km2 (1,90 %)
Total of MPAs in MAPAMED:	6
Percentage of the EUSAIR regional sea protected	
-Nationally designated MPAs:	0,77 %
-National MPAs + Natura 2000 marine areas:	1,90 %
Strictly protected marine MPAs (IUCN ctg. I or II):	0
National marine protected area target:	10 % (Aichi T11 marine: 10%)
Achievement of the 10% marine Aichi T 11 by 2020:	

4.8. Summary data for EUSAIR "marine" countries

4.8.1. MPAs

Country [Adriatic & Ionian region]	Number of MPAs	Only Marine Area of MPAs reported [km²]	Percentage of MPAs regarding the (whole) sea area of each country	Percentage of MPAs regarding EUSAIR sea area of each country
Albania	2	132,32	0,97%	0,97%
Bosnia and Herzegovina	0	0	0,00%	0,00%
Croatia	19	616,35	1,04%	1,04%
Greece	6	458,93	0,09%	0,25%
Italy	13	469,86	0,09%	0,21%
Montenegro	0	0,428	0,01%	0,01%
Slovenia	6	1,69	0,77%	0,77%

4.8.2. Natura 2000 marine areas

Country [Adriatic & Ionian region]	Number of Natura 2000 Marine sites	Natura 2000 Marine sites [km²]	Percentage of Marine N2k regarding the (Whole) sea area of each country	Percentage of Marine N2k regarding EUSAIR sea area of each country
Albania	X	x	X	X
Bosnia and Herzegovina	X	x	X	X
Croatia	225	5191,54	8,79%	8,79%
Greece	38	5251,65	1,06%	2,91%
Italy	80	6822,85	1,26%	3,06%
Montenegro	X	x	X	X
Slovenia	5	2,41	1,10%	1,10%

4.8.3. MPAs + Natura 2000 marine areas

Country [Adriatic & Ionian region]	MPAs & Natura 2000 Marine sites [km²]	Percentage of MPAs with Marine N2k regarding the (Whole) sea area of each country	Percentage of MPAs with Marine N2k regarding the EUSAIR sea area of each country
Albania	x	X	X
Bosnia and Herzegovina	x	X	X
Croatia	5889,156	9,98%	9,98%
Greece	5710,58	1,16%	3,16%
Italy	7059,094	1,30%	3,17%
Montenegro	x	X	X
Slovenia	4,18	1,90%	1,90%

4.9. Marine areas of high biodiversity value that are not currently protected

Available data on other areas of high biodiversity value were compiled to assess the extent and location of areas that could become marine protected areas in the future. Cetaceans Critical Habitats (CCH), Ecologically or Biologically Significant Marine Areas (EBSA), Essential Fish Habitats (EFH), Important Marine Mammal Areas (IMMA), Key Biodiversity/Important Bird Areas (KBA/IBA) in the Adriatic-Ionian region (referred to in the excel table as "Other Conservations" for the purpose of these analyses) were compiled; those areas already included in existing MPAs and Natura 2000 marine sites were excluded from the assessment of their areas (for example: Vulnerable Marine Ecosystems (VME), Specially Protected Area of Mediterranean Importance (SPAMI), also internationally protected areas: Ramsar sites, World Heritage Sites. Some of these other protected areas straddle the waters of two or more countries; one CCH and one EBSA area straddle the boundaries of the EUSAIR maritime area (between Greece and Turkey, and non-EUSAIR areas were also excluded).

An ecologically important area in part of the Trieste Bay (Slovenia) could possibly be classified as a future OECM area after some additional legal basis and management measures are put in place.

Figure 10: Existing MPAs and marine Natura 2000 sites (red + orange) and other important biodiversity sites (potential future MPAs - green) in the Adriatic - Ionian Sea.

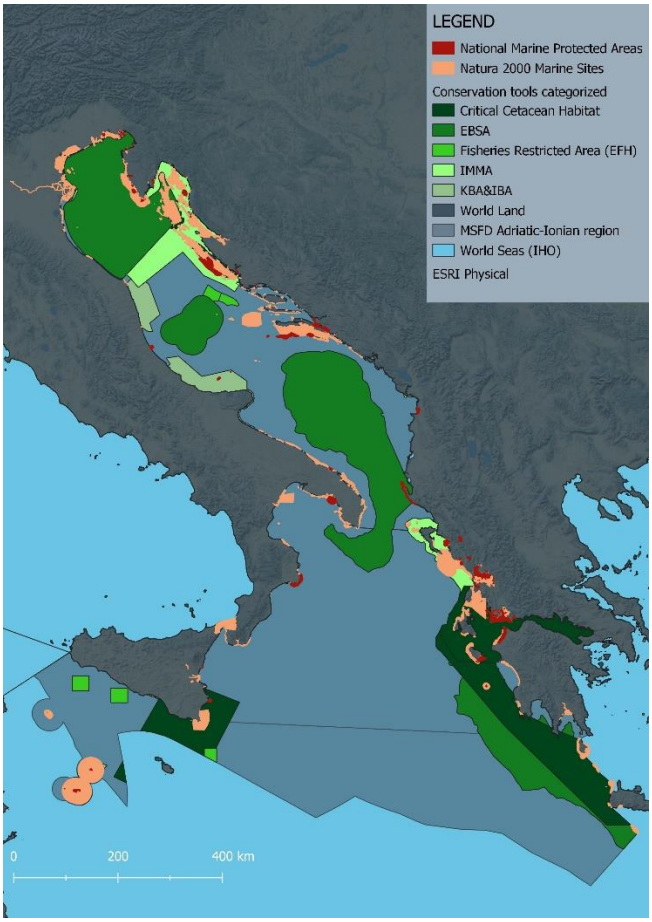


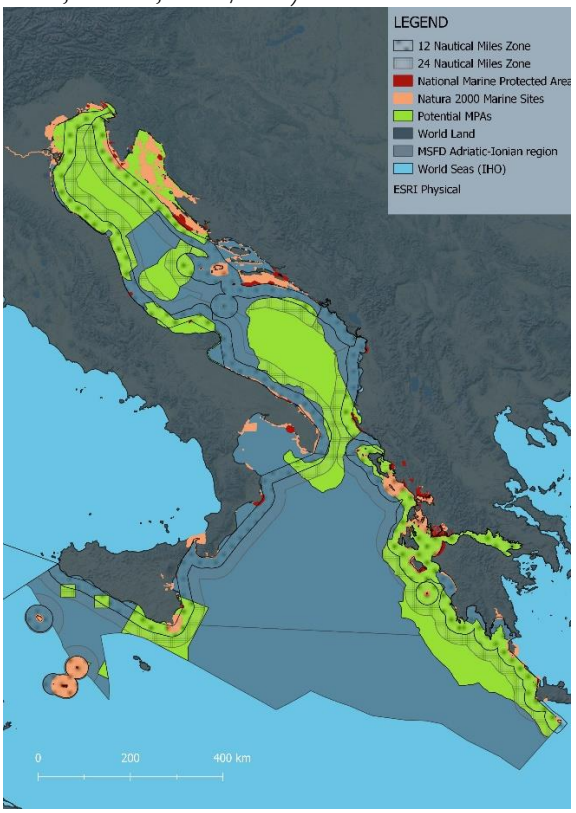
Table 7: Important biodiversity areas (not-protected) in the Adriatic – Ionian region by type and location.

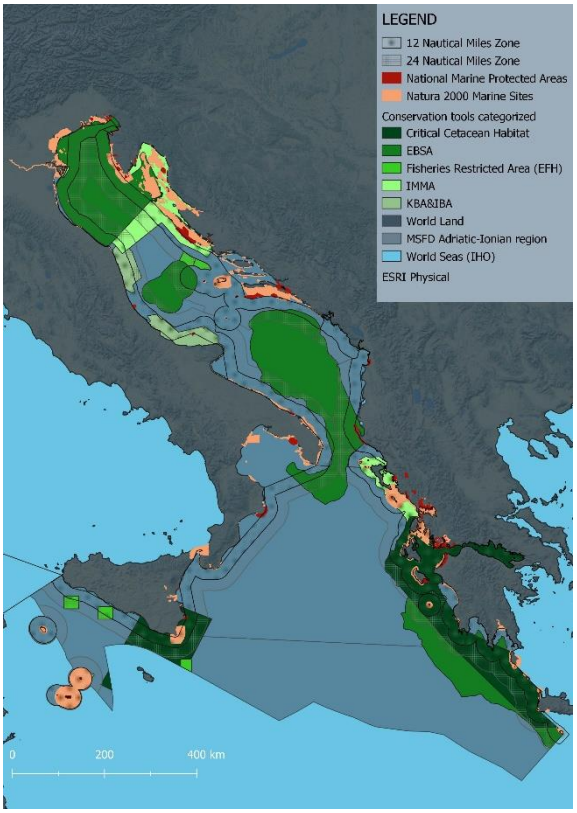
Country	**Areas**	**Type of important biodiversity (not-protected) designation**
Greece; Croatia, Italy	Kalamos; Southwest Crete and the Hellenic Trench; The Amvrakikos Gulf; The eastern Ionian Sea and the Gulf of Corinth; Waters along east coast of the Cres-Lošinj archipelago; Waters surrounding the island of Malta and south-eastern Sicily	Cetaceans Critical Habitats
Greece; Croatia, Italy; Slovenia; Albania	Hellenic Trench; Jabuka / Pomo Pit; Northern Adriatic; South Adriatic Ionian Strait	Ecologically or Biologically Significant Marine Areas
Italy; Croatia	East of Adventure Bank (Strait of Sicily); West of Gela Basin (Strait of Sicily); East of Malta Bank (Strait of Sicily); Jabuka/Pomo Pit	Protection of Essential Fish Habitats
Albania, Greece; Croatia, Italy, Slovenia	Ionian Archipelago; Northern Adriatic	Important Marine Mammal Areas
Albania, Greece; Croatia, Italy, Slovenia	107 areas	Key Biodiversity Areas / Important Bird Areas

Table 8: Size and percentage of important biodiversity areas (not-protected) in the Adriatic – Ionian region by type and location.

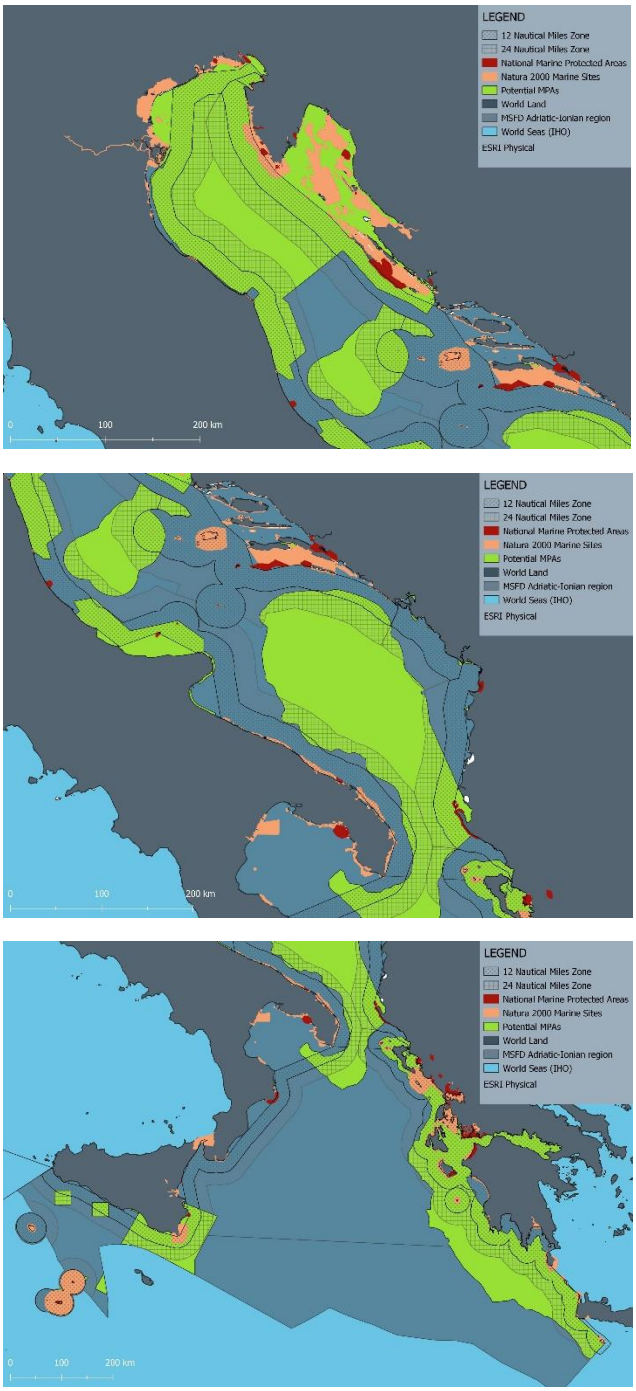
Country	**Area of important biodiversity (not-protected) designations in EUSAIR region [km²]**	**Percentage of important biodiversity (not-protected) designations in EUSAIR region**
Greece; Croatia, Italy	CCH: 49247,59	9,35 %
Greece; Croatia, Italy; Slovenia; Albania	EBSA: 108167,5	22,08 %
Italy; Croatia	EFH; 5233,5	1,08%
Albania, Greece; Croatia, Italy, Slovenia	IMMA: 43038,44	7,72 %
Albania, Greece; Croatia, Italy, Slovenia	KBA/IBA: 8205,757	1,70 %
Total:	141688,6	30,75 %

Figures 11 and 12: Biodiversity important but not yet protected areas in the Adriatic Sea - Ionian Sea (total area of all designations in the context of the 12/24-mile coastal sea and by specific designation (CCH, EBSA, EFH, IMMA, KBA/IBA).





Figures 13, 14, 15: Detailed distribution of the cumulative area of potential new or additional MPAs in the three sub-regions of the Adriatic-Ionian Sea region (North Adriatic, South Adriatic, Ionian Sea) in the context of the 12/24-mile coastal sea.



Available information on identified potential marine Natura 2000 sites for EU Member States in the Adriatic-Ionian region is compiled in Annex 2 to this report. Slovenia has not identified any additional potential marine Natura 2000 sites.

5.OECMs AS A CONTRIBUTION TO THE 2030 BIODIVERSITY TARGETS

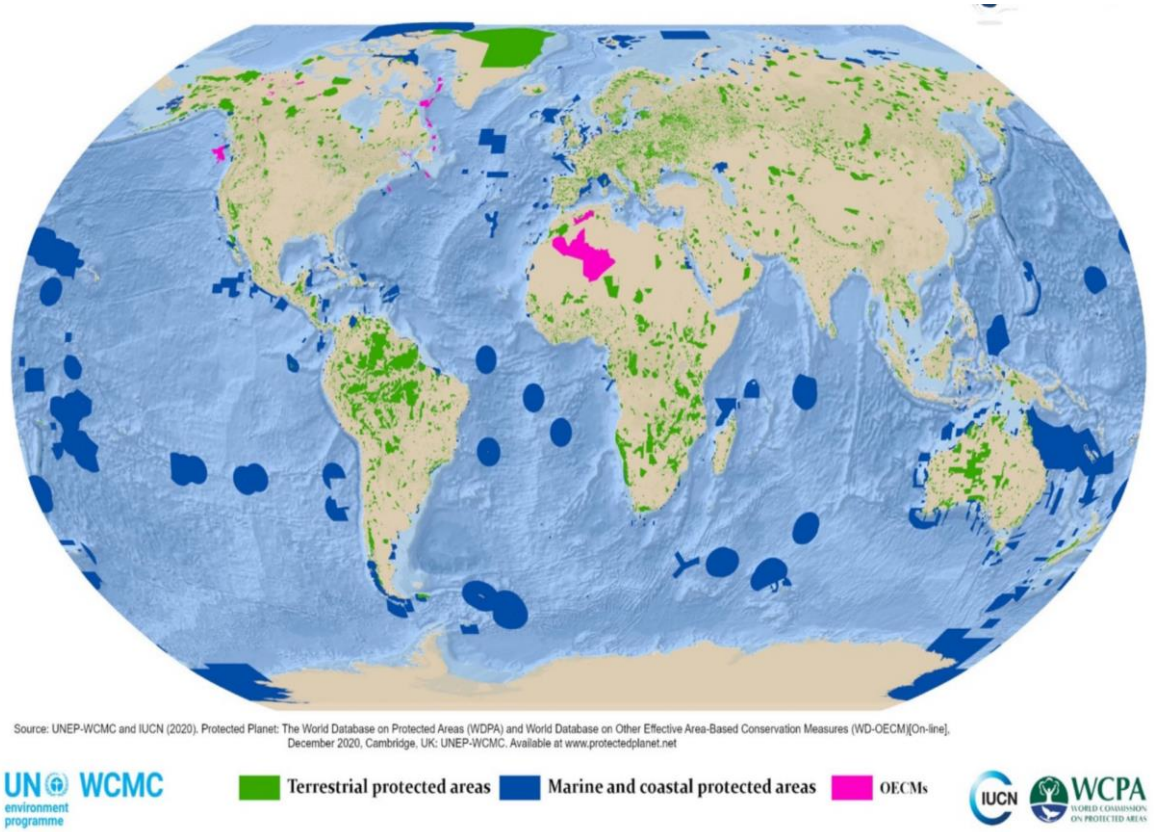
5.1. OECM Context

Although both protected areas and Other Effective Area-based Conservation Measures (OECMs) contribute towards achievement of Aichi Target 11 and also to the EU Biodiversity target of 30 % of land and sea to be protected and effectively managed by 2030, they have a number of other important differences; the most important is connected to the context of the area's primary objective:

Protected areas…..	OECMs…..
Protected areas should have a **primary conservation objective**. Their core function is to promote the in-situ conservation of biodiversity.	OECMs should deliver the effective in-situ conservation of biodiversity, **regardless of their primary management objectives**.

5.1. Protected areas and OECMs of the world

The following map shows the current distribution of the OECM. No such areas have been designated in the wider Adriatic-Ionian region, although these areas have great potential to contribute to the biodiversity targets of placing 30% of the area under protection to achieve the biodiversity targets as expressed in the EU Biodiversity Strategy 2030.



The map, definition, criteria for establishment of the OECM and some examples are taken from various publications of the IUCN WCPA publications, including »*Recognising and reporting other effective area-based conservation measures*« and »*Site-level methodology for identifying other effective area-based conservation measures*«. https://www.iucn.org/commissions/world-commission-protected-areas/our-work/oecms

5.2. OECM definition

OECMs definition: *A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other locally relevant values*". (https://www.cbd. int/doc/c/9b1f/759a/dfcee171bd46b06cc91f6a0d/sbstta-22-l-02- en.pdf)

5.3. Criteria with examples and implications for potential marine OECMs

Criterion A: Area is not currently recognized as a protected area

a."other than a Protected Area"

OECMs can contribute in their own right to area-based targets for terrestrial, freshwater and marine conservation. This means that areas that are **already designated as protected areas** or **lie within protected areas** should **not** also be recognised or reported as **OECMs**. While protected areas and OECMs are mutually exclusive at any point in time, both protected areas and OECMs have value for biodiversity conservation. Some OECMs may become recognised as protected areas if, for example, nature conservation becomes the primary management objective, or where the area already meets the definition of a protected area and the governing authority now requests its recognition.

Criterion B: Area is governed and managed

b. "*geographically defined area*"

Geographically defined area implies **a spatially delineated area with** agreed and demarcated **boundaries**, which can include land, inland waters, marine and coastal areas or any combination of these. Geographical space has three dimensions; this requires any governance or management regime for **a two-dimensional area** also to account for the third (vertical) dimension, but IUCN has a strong presumption against vertical zoning of OECMs.

Implication / examples for marine OECMs:

- Marine OECMs will often have limits in the third dimension (e.g. only apply to a certain depth below the marine surface, where vertical zoning for commercial purposes undermines conservation outcomes, disrupts ecological connectivity, and creates monitoring and enforcement challenges).

c. "*governed*"

Governed implies that the **area is under the authority** of a specified entity, or an agreed upon combination of entities. OECMs can be governed under the same range of governance types as protected areas, namely (Dudley, 2008):

- Governance by governments (at various levels);
- Governance by private individuals, organisations or companies;
- Governance by indigenous peoples and/or local communities; and
- Shared governance (i.e., governance by various rights holders and stakeholders together).

Governance mechanisms in OECMs should be effective in maintaining biodiversity.

d. "*managed*"

Managed specifies that the **area is being managed** in a way that achieves positive and sustained **long-term biodiversity conservation outcomes**. Unlike protected areas, OECMs do not require a primary objective of conservation, but there must be a direct causal link between the area's overall objective and management and the in-situ conservation of biodiversity over the long-term.

Management of OECMs should be consistent with the **ecosystem approach**, with the **ability to adapt** to achieve expected long-term **biodiversity conservation outcomes** and to **manage** emerging new **threats** (https://www.cbd. int/ecosystem/).

Accordingly, the management of OECMs should include **"effective means" of control of activities that could impact biodiversity**, whether through legal measures or other effective means (such as customary laws or binding agreements with the landowners). To the extent relevant and possible, management should be integrated across OECMs and integrated with surrounding areas. An area where there is no management regime is not an OECM, even though its biodiversity may remain intact.

Implication / examples for marine OECMs:

- "Managed" can include a deliberate decision to leave the area untouched - example of historic ship wrecks in marine areas
- Unmanaged areas of the high seas and other areas currently in a natural or near-natural state should not be considered as OECMs in the absence of a management regime that provides effective and enduring in-situ biodiversity conservation.

Criterion C: Achieves sustained and effective contribution to in situ conservation of biodiversity

e. "positive outcomes" for biodiversity conservation

Specifically, there should be a clear association between the management and biodiversity outcomes, with mechanisms in place to address existing or anticipated threats.

Implication / examples for marine OECMs:

- Environmentally-damaging industrial activities, such as industrial fishing, aquaculture, mining, oil and gas extraction etc. and infrastructure development, such as dams, erection of new sea-defence walls and roads and pipelines etc. should not occur in OECMs. This applies both to environmentally-damaging activities inside OECMs and also to those outside the area but impacting on the OECMs.
- Small, semi-natural areas within an intensively-managed landscape/seascape with limited biodiversity conservation value, such as recreational beaches, marinas and golf courses are unlikely to meet the OECM criteria.
- Conservation measures that apply to a single species or group of species, over a wide geographical range such as fishing regulations or whale-watching rules are unlikely to meet the OECM criteria.

f. "*sustained long-term*"

The governance and management of OECMs is expected to be sustained and deliver the long-term effective in-situ conservation of biodiversity. **Short-term or temporary** management strategies do **not constitute an OECM**. On the other hand, sites with a range of management approaches, including **seasonal arrangements** (e.g. sites managed for migratory bird species) **may qualify as OECMs** if the seasonal measures are part of a long-term overall management regime that results in the year-round in-situ conservation of biodiversity for which the site is important. In some cases, short-term regulatory instruments, renewed continuously, may provide de facto long-term measures. Management of OECMs should be consistent with an ecosystem and precautionary approach, with the ability to adapt to maintain biodiversity outcomes in the long-term and to address potential new threats. Practical steps **should be in place** for **monitoring and reporting** on the effectiveness of OECMs.

Implication / examples for marine OECMs:

- A commercial fishing closure that stays in place only until an overfished area recovers, is not an OECM.
- Effective conservation outcomes may arise from strict protection or certain forms of sustainable. However, most marine areas managed for industrial fishing and production, even if they have some biodiversity benefits, should not be considered as OECMs.
- Sustainably managed commercial fisheries on the other hand can be considered OECMs.

g. "*in-situ conservation of biodiversity*" (and "*geodiversity*")

OECMs should deliver biodiversity outcomes of comparable importance to, and complementary with, those of protected areas. This includes their contribution to ecological representation, coverage of areas important for biodiversity and associated ecosystem functions and services, connectivity and integration in wider landscapes and seascapes, as well as management effectiveness and equity requirements. OECMs are expected to achieve the **conservation of nature as a whole**, rather than only selected elements of biodiversity: conservation measures targeting single species or subsets of biodiversity should not allow the broader ecosystem to be compromised.

Implication / examples for marine OECMs:

- Many fisheries closures apply to specific geographic areas and therefore are area-based measures, but may only be closed to the fishing of specific depleted commercial fish species, the use of certain habitat-damaging or non-selective gear types, or at certain times of year when vulnerable species are present at a vulnerable life stage (e.g., spawning aggregations). They may continue to allow fishery and non-fishery activities (e.g., seismic testing, oil drilling), as long as such activities do not compromise the purposes for which they have been established. As such, they may be effective tools in helping to ensure that fisheries are managed sustainably (the objective of Aichi Target 6), without achieving the in-situ conservation of biodiversity (the objective of Aichi Target 11); such examples should not be considered as OECMs.
- Fishery closures, and other spatial fisheries management tools, including, but not limited to, fishing quotas or catch limits, temporary set asides or gear restriction areas with a single species, species group, or habitat focus, that may be subject to periodic exploitation and/or be defined for stock management purposes, and that do not deliver in-situ conservation of the associated ecosystems, habitats and species with which target species are associated. Such areas should be considered as contributing to Aichi Target 6 and are unlikely to meet the OECM criteria.

h. "*biodiversity*" Given the explicit link between OECMs and biodiversity conservation outcomes, it is a clear requirement that OECMs must achieve the effective and sustained in-situ conservation of biodiversity. These key biodiversity values, as well as the broader conservation values of OECMs, should be described and tracked over time (=requirement of the **monitoring procedures in place**)

Implication / examples for marine OECMs:

- The biodiversity conserved by an OECM can occur in areas within and beyond national jurisdiction.
- An intensively-managed fish farm with a small proportion of the original native fish species will likely not be an OECM.
- Conversely, an area of small-scale fishery, dominated by native marine species in healthy populations, might well be an OECM if a lower-intensity management and governance regime ensures these outcomes over the long-term.

Criterion D: Associated ecosystem functions and services and cultural, spiritual, socio-economic and other locally relevant values

i."*ecosystem functions and services*"

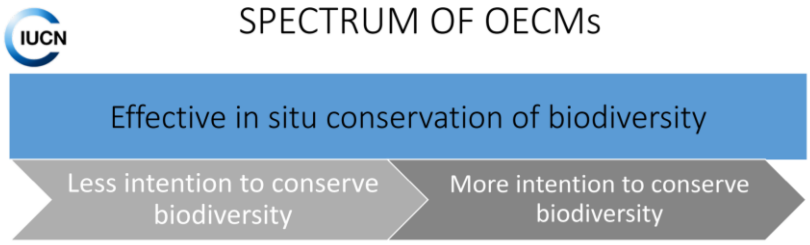
Protection of the ecosystem functions and services may be a frequent rationale for the recognition of OECMs. However, management to enhance one particular ecosystem service should not impact negatively on the site's overall biodiversity conservation values.

j."*cultural, spiritual, socio-economic, and other locally relevant values*"

OECMs include areas where the protection of key species and habitats and management of biodiversity may be achieved as part of cultural, spiritual socio-economic and other locally relevant values and practices. In such cases, it will be essential to ensure the recognition and protection of the linkages between biological and cultural diversity and associated governance and management practices that lead to positive biodiversity outcomes. Conversely, management for cultural, spiritual socio-economic or other locally relevant values within an OECM **should not impact negatively on biodiversity conservation values**.

5.2. Examples of potential other effective area-based conservation measures

The following situations can be considered as potential OECMs:



Ancillary	Secondary	Primary
'No-disturbance' areas: • Sacred sites • Military areas • War graves • Other "no-go" areas	Areas conserved through very low impact use • Some Indigenous and community conserved areas (ICCAs) / Locally managed marine areas (LMMAs) • Non-timber forest products (NTFP) areas • Watershed protection areas • Ecosystem service related wetlands	ICCAs or privately governed areas with a primary conservation objective where the governance authority • is unable to secure PA designation or • prefers not to be recognised as a Protected area

1. "Primary conservation"—refers to areas that may meet all elements of the IUCN definition of a protected area, but which are not officially designated as such because the governance authority does not want the area to be recognised or reported as a protected area.

   Examples can include:

   • Some territories or areas (marine, freshwater or terrestrial) governed by indigenous peoples, local communities or private entities that have a primary and explicit conservation objective and deliver the in-situ conservation of biodiversity, but where the governing body wishes the territories or areas to be recognised and reported as OECMs, rather than as protected areas.
   • Areas that include Key Biodiversity Areas, managed in ways that deliver long-term in-situ conservation of biodiversity through, for example, regulation or other effective approaches.

2. "Secondary conservation"—is achieved through the active management of an area where biodiversity outcomes are a secondary management objective.

   Examples can include:

   • Territories and areas managed by local communities to maintain natural or near-natural ecosystems, with low levels of use of natural resources practised on a sustainable basis and in a way

that does not degrade the area's biodiversity. This includes coastal and marine areas where local community-based harvesting and management practices result in de facto conservation of fish populations, habitats and other associated marine biodiversity such as some locally managed marine areas (LMMAs).
• Sites managed to provide ecological connectivity between protected areas or other areas of high biodiversity
• Permanent or long-term fisheries closure areas designed to protect complete ecosystems for stock recruitment, to protect specialised ecosystems in their entirety, or protect species at risk through the in-situ conservation of biodiversity as a whole, and are demonstrated to be effective against fishery and non-fishery threats alike.
• Fishing reserve areas that maintain natural habitats and other flora and fauna as well as viable populations of fished and non-fished native species.
• Areas successfully restored from degraded or threatened ecosystems, to provide important ecosystem services but which also contribute to effective biodiversity conservation, e.g. coastal wetlands restored for flood protection.

3. "Ancillary conservation"—refers to areas that deliver in-situ conservation as a by-product of management activities, even though biodiversity conservation is not a management objective.

   Examples can include:

   • Coastal and marine areas protected for reasons other than conservation, but that nonetheless achieve the in-situ conservation of biodiversity e.g., historic wrecks, war graves, etc. (Scapa Flow in the Orkney Islands protects shipwrecks and war graves. This protection has led to the ancillary conservation of important biodiversity)

5.3. Case study: identification of possible OECM in the marine waters of Slovenia

The Nature Protection Act (Official Gazette of the Republic of Slovenia, 96/2004) defines ecologically important areas (ekolosko pomembno obmocje - EPO) as "*the area of a habitat type or part or larger ecosystem unit that contributes significantly to the conservation of biological diversity*". These areas are not protected areas, but contribute significantly to the maintenance of the natural balance and thus to the conservation of biodiversity and are connected as an ecological network; a system of interconnected ecologically important areas or sites that are close to each other.

If the EPO is recognised at EU level as being of particular importance for the conservation of certain birds, species or habitats (based on the criteria of the Birds Directive and Habitats Directives), the EPO becomes a Natura 2000 site. In short, all Natura 2000 sites in Slovenia are also EPOs, but there are other EPOs that are only of conservation importance at the national level (and are not also Natura 2000 sites).

The main legal requirement for the distinction between the "upgraded" Natura 2000 EPOs and the "EPOs with only national conservation significance" is that only Natura 2000 sites require special permits from the competent authorities for all planned activities and that an "appropriate assessment" (=EIA, SEA) must be carried out for each planning or development document for the site.

The entire area of the marine waters in Slovenia is declared as an EPO (but not of EU importance according to the Natura 2000 criteria). This could classify this particular EPO as potential OECMs, but in the process of identification and recognition of OECMs some other requirements as indicated in the definition of OECMs should be taken into account:

Criteria	**Criteria fulfilled**
The area should not be a protected area	Yes
Clear boundaries	Yes
The area is under the authority of a specified entity	No, but it could be established
Management regime that provides effective and enduring in-situ biodiversity conservation	No, but it could be established
Mechanisms in place to address existing or anticipated threats	Partly; some mechanisms exist, but in a coordinated manner
Seasonal measures are part of a long-term overall management regime	Partly; some seasonal measures (for example: fishing restrictions) and spatial restrictions (for example: marine traffic) are already in place
Steps towards monitoring and reporting in place	No; only for selected species and/or habitats
Achieve the conservation of nature as a whole	Not yet; only selected elements of biodiversity are conserved
Protection of the ecosystem functions and services secures	In principle yes, however uses of the natural resources should be made more sustainable.

Conclusion: EPO "Slovenian Adriatic Sea" could therefore not be identified as a potential OECM at this stage. However, there is a possibility that with changes in legislation, administration and management, the marine area in the Bay of Trieste could one day be granted OECM status.

5.4. Possible next steps for identification and recognition of the OECMs at the national level

The following steps could contribute to the national **action plan for the identification and recognition of OECMs** as part of the contributions to the EU Biodiversity Strategy 2030 targets for the protection and management of important areas for biodiversity:

- Translate the IUCN OECM guidelines into national languages
- Hold ministerial/departmental meetings to discuss OECMs
- Engage other related agencies to run a similar process
- Raise awareness of OECMs amongst key stakeholders
- Engage with governance authorities of lands and waters adjacent to protected areas that are 'potential OECMs'
- Work towards a national assessment to identify potential OECMs
- Begin to consider identification, legal recognition, support and reporting of OECMs

6. FISHERIES IN THE TRANS-EUROPEAN NATURE NETWORK OF PROTECTED TERRITORIES

Mediterranean fisheries are facing serious challenges due to over-exploitation. About 80% of all assessed stocks are fished outside safe biological limits, catches are decreasing, and regional fleets are shrinking. Professional fishery landings have been declining for the past 20 years despite its socio-economic importance due to marine resource depletion.

The *FAO-GFCM Regional Plan of Action for Small-Scale Fisheries in the Mediterranean and the Black Sea (RPOA-SSF)* was prepared aiming at improvement of the sector's regulatory framework and introduction of new practices and effective practices which should maintain good ecological and environmental conditions and contribute to the improvement of the socio-economic development of the local fishermen communities.

EU funded Interreg project Pharos4mpas https://pharos4mpas.interreg-med.eu/ provides recommendations, policy advice and identifies complementary measures for sustainable fisheries in MPAs.

6.1.Types of fishing activities in the context of biodiversity conservation

Fishing and harvesting of marine aquatic resources have been identified as the most common "high pressure" activity on habitat and species features in marine Natura 2000 sites (Aronsson *et al,* 2014).

The impacts of fishing activities have been classified by ICES (2011) into nine general types;

- Removal (catch) of target species
- Removal of non-target species (bycatch): fish, benthos, seabirds, marine mammals
- Damage of organisms which are not brought on board, i.e. fish and benthos
- Discard and offal (change the food availability and therewith change scavenging seabirds as well as benthic populations)
- Damage or disturbance to substrate and habitat structure
- Damage or disturbance to biodiversity
- Turbidity (results in light reduction, which affects the benthic community)
- Noise (mainly affecting marine mammals)
- Visual disturbance (mainly affecting seabirds).

Such activities are subject to Article 6 of the Habitats Directive which sets out the provisions that govern the conservation and management of Natura 2000 sites. Article 6(1) makes provision for the establishment of the necessary conservation measures, and is focused on positive and proactive interventions. Article 6(2) makes provision for avoidance of habitat deterioration and significant species disturbance. Its emphasis is therefore preventative. Articles 6(3) and (4) set out a series of procedural and substantive safeguards governing plans and projects likely to have a significant effect on a Natura 2000 site. Obligations under Art. 6(2)-(4) also apply to Special Protection Areas established under the Birds Directive.

6.1.1.Industrial fishing

Large-scale commercial fishing is also known as industrial fishing. It often involves the use of large, high-capacity boats equipped with on-board facilities for freezing and processing seafood at sea. These boats can be over 130m long and have a cargo capacity of more than 2,000 tonnes. They stay at sea for long periods and have large crews on board for catching and processing fish

(Marine Stewardship Council, http://blog.msc.org/blog/2016/10/13/large-vs-small-scale-fishing-sustainable/

	Potential contribution to the 30% protected area target of the EU Biodiversity Strategy (as MPAs or OECMs)	Potential contribution to the 10% strict protection area target of the EU Biodiversity Strategy
Large-scale fisheries (industrial)	●	●

Areas of industrial fishing (and also industrial aquaculture) cannot qualify as potential MPAs under the IUCN protected area standards (Day et al., 2019) because conservation is not a primary management objective in these areas and they do not contribute to biodiversity conservation (which determines that these areas could not become OECMs).

6.1.2.Small-scale fisheries

According to the EU definition in Annex I of Commission Regulation (EC) No. 26/2004, "small-scale coastal fisheries" means fisheries conducted by vessels with an overall length of less than 12 metres that do not use towed gears, including encircling seines, beam trawls and towed nets.

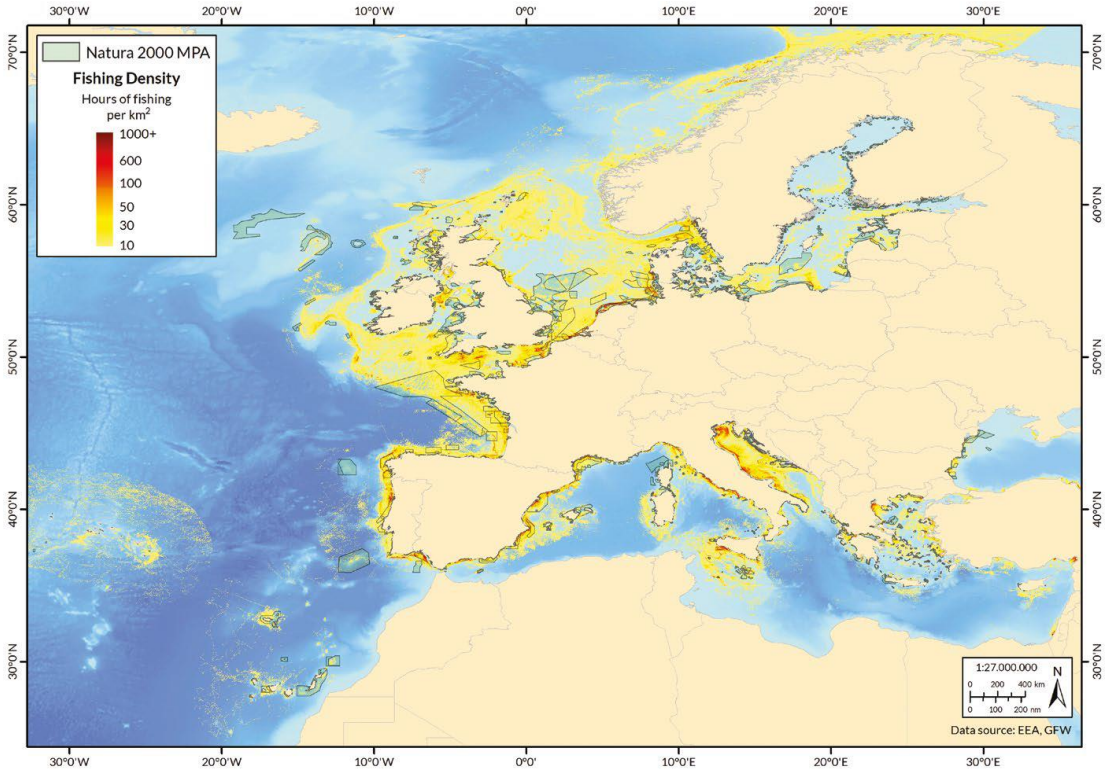
Although the catch volume of small-scale coastal fisheries is relatively small compared to large-scale commercial fisheries, small-scale coastal fisheries nevertheless have the potential to impact fishery resources and marine ecosystems. While other factors - including climate change, pollution from marine and terrestrial sources, and catches by recreational fishers - also contribute to declining fish stocks, small-scale fisheries can cause serious impacts if, for example, fishing effort is very high.

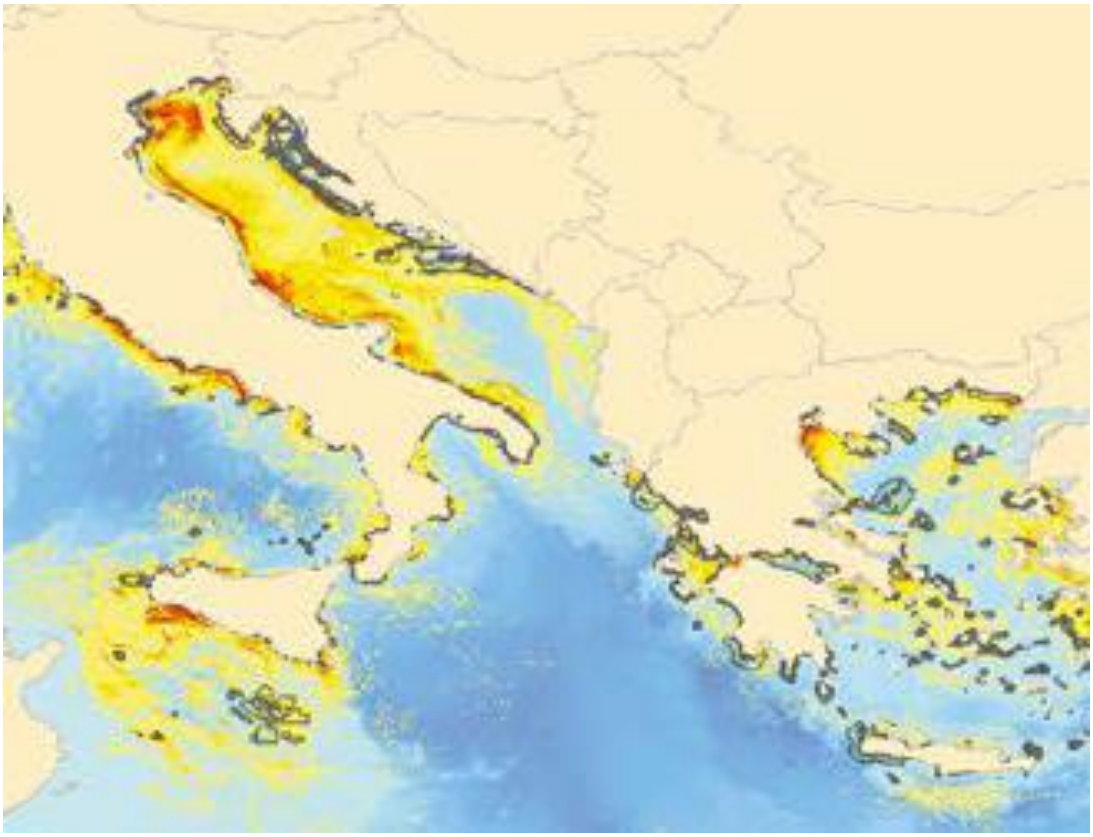
	Potential contribution to the 30% protected area target of the EU Biodiversity Strategy (as potential MPAs or OECMs)	Potential contribution to the 10% strict protection area target of the EU Biodiversity Strategy
Small-scale fisheries (non-industrial)	●	●

If the primary management objective of small-scale fisheries is conservation, they may be classified as MPAs; if it is one of the subordinate objectives, these areas could become OECMs.

Figures 19 and 20 show the intensity of fisheries in the global and Adriatic-Ionian regions (source: Oceana (www.oceana.org). The EUSAIR region is clearly highlighted as one of the seas under the highest fishing pressures.

Figures 19 & 20: Extent of fishing activities in European waters (upper figure) and magnified view for the wider Adriatic-Ionan region (lower figure) in 2018, including within Natura 2000 MPAs (shown as areas outlined in black; source: Oceana)





6.2.Potential impacts of small-scale fisheries

Small-scale fisheries are generally considered to have less ecological impact than industrial fisheries, and are usually seen as more sustainable; potential impacts of small-scale fisheries include (pharos4mpa project):

• Altering biodiversity and changing ecosystem functioning by removing key species (e.g. top predators) or specific size classes.

• Targeting species that are classed as vulnerable on the IUCN Red List.

• Size-selective fishing affecting hermaphrodite fish species.

• Catches below the minimum landing size which prevent individuals from reaching maturity and reproducing.

• Habitat degradation with direct and indirect action (specific fishing techniques, anchoring).

• Lost or abandoned fishing gear.

• Impacts on endangered, threathened or protected species (marine mammals, marine turtles, sharks and rays, seabirds).

Fishing activity in the small-scale fisheries can vary between significat to moderate extraction and impacts and thus can not be considered as a contribution to the 10% EU Biodiversity Strategy target of strict protected seas by the year 2030. Small-scale fisheries can be categorised in one of the nationally designated protected areas, corresponding to the IUCN protected area categories V and VI. Only exceptionally, when the fishing activity can be managed in a way that is compatible with the primary management objective of the IUCN category, it can also be also listed as the category IV.

6.3. Complementary measures for sustainable fisheries

Three categories of technical measures should be considered in the process of establishment of marine protected areas in small-scale fisheries areas:
- measures relating to fishing gear types
- measures relating to fishing gear selectivity
- spatial/temporal restrictions.

To address impacts of small-scale fisheries, environmental measures need to be taken to:

• Avoid the excessive impact of small-scale fisheries on marine resources and vulnerable marine species, through gear and size restrictions, fishing effort limitation, seasonal closures, etc.

• Improve the selectivity of fishing gear with regard to size and species

• Increase investments in fishing techniques that eliminate discards by avoiding or reducing unwanted catches of commercial and non-commercial stocks

• Support the exclusion of fishing activities in areas showing high probabilities of unwanted catches, including the establishment of zones for the recovery of fish stocks, in spawning sites and nursery areas for juveniles

• Support – in close coordination with fishers – an increase in coverage of no-take zones that help ecosystem and marine resource recovery

• Minimize the impact of fishing activity and gear on sensitive habitats such as Posidonia meadows

• Establish derelict fishing gear management schemes from collection to final treatment or recycling together with waste collection plans in landing sites.

Box 4 presents some of the fisheries management measures by selected EU countries to reduce the pressures on the environment.

Box 4: Examples of fisheries management measures being considered or introduced by Member States

Ireland	Restrictions on access to a fishery through vessel track record, restrictions on fishing times, gear restrictions, daily/weekly TACs and monitoring of fishing effort (using risk assessments and implemented through fisheries Natura plans).
Italy	Prohibition of fishing with specific gears such as towed nets, dredges, purse seines and shore or boats seines or removal of abandoned fishing gears (based on the analysis of pressures and threats).
Malta	Priority measures and conservation objectives under development. Obligations for fishermen to report any bycatch if retained (for transfer to a rehabilitation centre) or liberated; trawling limited to specific areas, and noise and light restrictions when navigating in certain areas along the coast where certain seabirds are known to nest.
Poland	Temporal and spatial limitations of fishing Designating fishing free zones (with use of the most dangerous fishing gear) More efficient execution of already existing provisions (especially regarding gillnets) Monitoring of fishing gear to get the best data on bycatch Testing alternative fishing gear and implementing if proved efficient Higher control of potential poaching Education on protected features and the need of fishermen's cooperation in this matter

Spain	Advanced notification of any change to the type of gear or commercial species fished to the authority responsible for MPA management No small-scale fishing gears operating in contact with the sea bottom are allowed within the location of habitat type 1120 (*Posidonia* seagrass meadows) Any bycatch to be reported and immediately returned to the sea unless they are turtles, in which case they will be delivered in port after informing emergency services. Note: This protocol is currently under assessment to determine if it would be better to release the turtles again directly To minimise bycatch of turtles, night-setting will be adopted by surface longline vessels and proper equipment to release turtles from hooks must be taken on-board Use of acoustic devices subject to prior authorization
Sweden	Prohibition of fishing activity of commercial fishing vessels in areas hosting bottom habitats with high conservation value Fishing vessels inside MPAs to be fitted with and maintain in operation AIS transponders to transmit position every 30 seconds
UK	Measures for benthic habitats have focused on removing or reducing those fishing activities that may adversely affect the features, namely principally demersal fishing gears. Fisheries management measures have also been considered for bird species designated as features of offshore SPAs (red-throated divers) in terms of the risk posed by fishing activities through direct mortality, impact on prey species and disturbance. At the current time, no measures have been deemed necessary for offshore SPAs. Fisheries management measures have been introduced for various MPAs (including SACs) within UK territorial waters. Draft proposals for Scottish offshore sites have also been published, e.g. prohibit all demersal fisheries, zonal exclusion of demersal towed gears, different restrictions on gears throughout the site or in zones.

Source: *Fisheries management measures in Natura 2000 sites*, N2K group (https://ec.europa.eu/environment/nature/natura2000/platform/events/fisheries_management_measures_in_natura2000_mediterranean_sea_en.htm

6.4. List of potential measures for improvement of management of fisheries for conservation

• Developing a national legal framework enabling fishery co-management and organisation of fishers into cooperatives to support sustainable stocks

• Enablig dialogue between all stakeholders (fishing, conservation and tourism sectors)

• Promote appropriate zoning inside MPAs and fisheries, especially by the establishment of no-take zones

• Prepare and implement a fisheries management plan

Box 5: Fisheries management plan

Specific management measures included in the small-scale fisheries management plan may include:

- Reducing fishing effort, through for instance seasonal or temporary closures in adjacent zones or through gear restrictions or time limitation of fishing (maximum 24 hours)
- Improving the selectivity of fishing gear
- Reducing the incidental catch of elasmobranchs, seabirds, turtles and marine mammals through mitigation measures
- Minimizing bycatch and reducing discards, through regulations or economic incentives
- Minimizing the impacts of small-scale fisheries on vulnerable marine species through gear and size restrictions or seasonal restrictions
- Reducing ghost fishing by collecting lost fishing gear
- Implementing waste collection plans in landing sites
- Implement effective control and enforcement of regulations

• Support monitoring schemes and research in small-scale fisheries to support delivery of the conservation objectives

• Improving legal frameworks that enable the small-scale fisheries sector to be organized as cooperatives, producer groups or organizations, micro-enterprises or other structures to help fishers better manage their activities, mutualize costs, add value,...

• Support initiatives to enhance the added value of small-scale fisheries products: optimization of distribution channels, promotion of less marketable catches, eco-labeling of sustainable small-scale fisheries products, education and awareness-raising among consumers, pescatourism...

• Guaranteeing good and fair access to landing sites adequately equipped to facilitate small-scale fisheries activities

• Raising awareness among consumers and local communities about small-scale fisheries activities and their benefits, to improve the image of the small-scale fisheries sector.

7.RECOMMENDATIONS FOR SUSTAINABLE USE OF MARINE RESOURCES IN MPAs

Sustainable use and conservation of marine resources focuses on linking environmental issues with development and planning policies to meet the needs and aspirations of the present without undermining the ability to meet future needs and aspirations.

The three-stage process includes planning, implementation and (monitoring and) evaluation stages and requires the involvement of stakeholders and interested communities from the early stages of planning. The vision for sustainable development and conservation determines the goals and objectives.

Achieving the vision in a long-term perspective depends on choosing the right approach, applying quality standards and using effective tools in the planning process.

The approach

The ecosystem approach is based on the assumption that all land and water management should contribute to conservation. For MPAs to be effective, they must be embedded in a broader management framework, the larger seascape. MPAs designed as part of an ecosystem-based management approach take into account the human context of the ecosystem and aim to maintain healthy, productive and resilient ecosystems so that they can provide the ecosystem services that humans require.

The ecosystem-based approach considers ecological connectivity and the concept of ecological networks, including connectivity for migratory species (e.g. through the "Adriatic fly-way" for migratory birds, corridors for large carnivores along the Dinaric Mountains and the Balkans). These are so-called "green and blue corridors", which form part of the green and blue infrastructure.

Figure 21: The guiding principle in the planning of green and especially blue corridors (as indicated on the map of Istria), is the preservation of the water continuum, i.e. the continuity of flows of organisms, substances and energy from river-lake-land networks through coastal areas and estuaries to the sea and vice versa (Šantl et al., 2021).

The tools

Following the EU Maritime Spatial Planning Directive (MSP; Directive 2014/89/EU), EU Member States are currently developing their maritime spatial plans and associated visions and strategies, a process that is expected to be completed by 2021. Non-EU countries are also looking at MSPs, but on a non-binding basis.

Maritime spatial plans include the development visions for different sectors, whose policies are to be based on sectoral standards for sustainable use of natural/marine resources on the one hand, and to confront them with the international protected area standards on the other (Dudley et al., 2008, 2013, Day et al.,

2019). At the local MPA level, the management planis a document that sets out the management approach and objectives of the given marine area, together with a framework for decision-making that will apply in the MPA over a specified period of time.

International standards for marine protected areas

The IUCN International Standards for Protected Areas distinguish between six (marine) protected area categories, as shown in the table below. The MPA categories are based on management objectives and provide a basic overview of the activities that are allowed and prohibited in each of the categories.

Figure 23: Definition and primary objectives of IUCN protected area categories (adapted from Dudley et al., 2013 and Day et al., 2019); categories Ia, I and II shaded in grey describe strictly protected marine areas.

	IUCN Ctg	Definition	Primary objective	Permitted activities	Prohibited activities
Strictly protected areas	Ia	*Category Ia are strictly protected areas set aside to protect biodiversity and also possibly geological/ geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring.*	To conserve regionally, nationally or globally outstanding ecosystems, species (occurrences or aggregations) and/or geodiversity features: these attributes will have been formed mostly or entirely by non-human forces and will be degraded or destroyed when subjected to all but very light human impact.	●Scientific research involving collection may be permitted if that collection cannot be conducted elsewhere and if the collection activity is minimised to that which is absolutely necessary to achieve the scientific goals of the study. ●Extraction to control invasive species is also permitted in some category Ia MPAs.	●Removal of species or modification, extraction or collection of resources (e.g. through any form of fishing, harvesting, dredging) is considered to be incompatible with this category. ●Anchoring, which can damage bottom habitat, should not be permitted. ●If necessary for research, mooring buoys may be an alternative.
	Ib	*Category Ib protected areas are usually large, unmodified or slightly modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.*	To protect the long-term ecological integrity of natural areas that are undisturbed by significant human activity, free of modern infrastructure and where natural forces and processes predominate, so that current and future generations have the opportunity to experience such areas.	●Scientific research involving collection may be permitted if that collection cannot be conducted elsewhere and if the collection activity is minimised to that which is absolutely necessary to achieve the scientific goals of the study. ●Extraction to control invasive species is also permitted in some category Ia MPAs. ●in some circumstances, sustainable resource use by indigenous people to conserve their traditional, spiritual and cultural values, provided this is done in accordance with cultural tradition.	As with Category Ia, removal of species or modification, extraction or collection of resources (e.g. through fishing, harvesting or dredging) is not considered compatible with this category.
	II	*Category II protected areas are large natural or near natural areas set aside to protect largescale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and*	To protect natural biodiversity along with its underlying ecological structure and supporting environmental processes, and to promote education and recreation.	●Scientific research involving collection may be permitted if that collection cannot be conducted elsewhere and if the collection activity is minimised to that which is absolutely necessary to achieve the scientific goals of the study.	Extractive use (of living or dead material) is not considered consistent with the objectives of category II (e.g. all types of fishing, including recreational, are not compatible), other than for approved research which cannot be done

		visitor opportunities.		●Extraction to control invasive species is also permitted in some category Ia MPAs. ●in some circumstances, sustainable resource use by indigenous people to conserve their traditional, spiritual and cultural values, provided this is done in accordance with cultural tradition. ●Visitation, non-extractive recreational activities and nature tourism (e.g. snorkelling, diving, swimming, boating, etc.)	elsewhere
	III	*Category III protected areas are set aside to protect a specific natural monument, which can be a landform, sea mount, submarine caverns, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value.*	To protect specific outstanding natural features and their associated biodiversity and habitats.	●Scientific research involving collection may be permitted if that collection cannot be conducted elsewhere and if the collection activity is minimised to that which is absolutely necessary to achieve the scientific goals of the study. ●Extraction to control invasive species is also permitted in some category Ia MPAs. ●in some circumstances, sustainable resource use by indigenous people to conserve their traditional, spiritual and cultural values, provided this is done in accordance with cultural tradition. ●Visitation, non-extractive recreational activities and nature tourism (e.g. snorkelling, diving, swimming, boating, etc.)	Extractive use (of living or dead material) is not considered consistent with the objectives of category III (e.g. all types of fishing, including recreational, are not compatible), other than for approved research which cannot be done elsewhere. All other activities which have the potential to impact the specific natural monument (e.g. aquaculture, waste discharge, habitation, etc) are also prohibited.
	IV	*Category IV protected areas aim to protect particular species or habitats and management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.*	To maintain, conserve and restore species and habitats.	Unlike categories Ia – III, within category IV MPAs extractive research is permitted, Renewable energy generation and restoration/enhancement for other reasons (e.g. beach replenishment, fish aggregation, artificial reefs) is permitted. Long-term and sustainable local fishing practices, small-scale aquaculture and works (e.g. harbours,	Industrial fishing, industrial-scale aquaculture, untreated waste discharge, mining and habitation not permitted.

				ports, dredging) are all permitted so long as the activity can be managed in such a way that it is compatible with the MPA's objectives.	
	V	*Category V protected areas are where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.*	To protect and sustain important landscapes/ seascapes and the associated nature conservation and other values created by interactions with humans through traditional management practices.	Local communities living within and sustainably using the seascape is allowed, and long-term and sustainable local fishing practices or small-scale aquaculture are permitted. However, the primary objective of the area remains the sustainable interaction of people and nature over time. Works (e.g. harbours, ports, dredging) may also be permitted, provided they or any associated activities (e.g. waste discharge, sea dumping) do not cause adverse impacts on the ecological, biological, cultural or scenic values of the area.	Industrial fishing, industrial-scale aquaculture, untreated waste discharge and mining not permitted.
	VI	*Category VI protected areas conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in natural condition, where a proportion is under sustainable natural resource management and where lowlevel non industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.*	To protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.	Long-term and sustainable local fishing practices, small-scale aquaculture and smallscale sustainable collection of some species (e.g. food species, ornamental coral or shells) are permitted. Works (e.g. harbours, ports, dredging) may also be permitted, provided they or any associated activities (e.g. waste discharge, sea dumping) do not cause adverse impacts on the ecological, biological, cultural or scenic values of the area.	Industrial fishing, industrial-scale aquaculture, untreated waste discharge, mining and habitation not permitted.

Figure 24 indicates which activities and uses of natural resources are permitted or prohibited in the various marine protected area categories.

Figure 24: Matrix of marine activities that may be appropriate for each IUCN management category (Day et al., 2019).

Activities	Ia	Ib	II	III	IV	V	VI
Research: non-extractive	Y*	Y	Y	Y	Y	Y	Y
Non-extractive traditional use	Y*	Y	Y	Y	Y	Y	Y
Restoration/enhancement for conservation (e.g. invasive species control, coral reintroduction)	Y	Y	Y	Y	Y	Y	Y
Traditional fishing/collection in accordance with cultural tradition and use	N	Y*	Y	Y	Y	Y	Y
Non-extractive recreation (e.g. diving)	N	Y	Y	Y	Y	Y	Y
Large scale high intensity tourism	N	N	Y	Y	Y	Y	Y
Shipping (except as may be unavoidable under international maritime law)	N	N	N*	N*	Y	Y	Y
Research: extractive	N*	N*	N*	N*	Y	Y	Y
Renewable energy generation	N	N	N	N	Y	Y	Y
Restoration/enhancement for other reasons (e.g. beach replenishment, fish aggregation, artificial reefs)	N	N	N*	N*	Y	Y	Y
Fishing/collection: recreational (sustainable)	N	N	N	N	*	Y	Y
Fishing/collection: local fishing (sustainable)	N	N	N	N	*	Y	Y
Industrial fishing, industrial-scale aquaculture	N	N	N	N	N	N	N
Aquaculture – small-scale	N	N	N	N	*	Y	Y
Works (e.g. harbours, ports, dredging)	N	N	N	N	*	Y	Y
Untreated waste discharge	N	N	N	N	N	N*	N*
Mining, oil and gas extraction (seafloor as well as sub-seafloor)	N	N	N	N	N	N	N
Habitation	N	N	N	N	N	Y	N

Key:	
No	N
Generally no, a strong prerogative against unless special circumstances apply	N*
Yes	Y
Yes because no alternative exists, but special approval is essential	Y*
Variable; depends on whether this activity can be managed in such a way that it is compatible with the MPA's objectives	*

Since the 2016 World Conservation Congress, IUCN now considers that large-scale industrial activities such as mining and fossil fuel extraction are inappropriate in all MPA categories. For example, IUCN standards state that there should be no shipping at all in strictly protected areas (Category Ia and Ib). In national parks and habitat/species management areas (categories II and III), navigation should only be allowed if no alternative is possible. Navigation is only allowed in protected area categories IV, V and VI. Other uses and activities that may take place in different protected area categories are listed in the table.

The following subsection provides examples of recommendations for selected sectors for planning and regulating activities to support the achievement of the MPAs' conservation objectives.

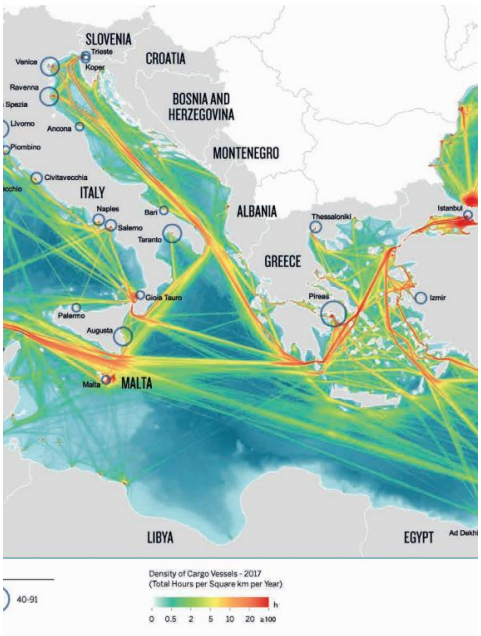
7.1.Sector: marine transport

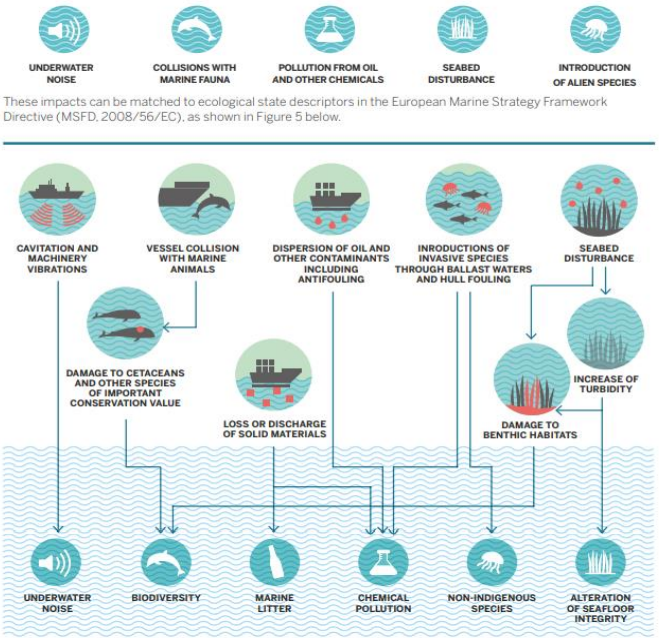
Recommendations are derived from the EU funded Interreg project Pharos4mpas https://pharos4mpas.interreg-med.eu/.

7.1.1.Description of the impacts of the transport to the marine environment

The Adriatic Sea and the coasts of the Ionian Sea are the main transport routes for global maritime traffic, as shown in Figure 25, where the red colour indicates the busiest maritime routes; the main impacts of the maritime transport on marine ecosystems are shown on Figure 15.

Figures 25 and 26: Main transport route in the Adriatic-Ionian region and the main impacts of maritime transport to the environment





National authorities planning and managing the use of sea space, including marine spatial planners, are key actors in identifying and implementing measures to avoid maritime sector impacts on ecosystems, particularly in relation to traffic accidents.

7.1.2. Policy and management recommendations

National maritime authorities and conservation authorities can significantly contribute by defining ecosystem protection measures:

• Through Maritime Spatial Planning (MSP), authorities should make use of tools such as Particularly Sensitive Sea Areas (PSSAs), Areas To Be Avoided (ATBAs) and Traffic Separation Schemes (TSSs) to protect MPAs from the risks of maritime traffic accidents and reduce the chances of collisions with cetaceans. National authorities should coordinate monitoring programmes on marine mammal range and routes, to support MSP processes.

• MSP processes can prevent anchoring impacts by introducing voluntary no-anchoring zones, adopting zoning plans indicating sensitive areas as well as suitable anchoring areas, and by including MPA boundaries and anchor-sensitive areas on nautical charts.

• Authorities should also introduce area-based regulations, such as banning the transit of dangerous goods in important marine areas to prevent severe accidents, or mandating the use of technical solutions to prevent collisions with cetaceans (e.g. real-time positioning systems). In addition, authorities should ensure the implementation of the Ballast Water Management Convention, particularly through inspections and monitoring activities.

• Joint cross-border actions need to be implemented for navigation monitoring and safety to ensure environmental impacts are avoided or minimized. These may include coordinated governance systems (a joint action plan) and innovative surveillance methods (e.g. new high-frequency radar antennae, data sharing, interoperability). Participation in coordinated response and contingency plans for oil spills and other pollution events at cross-border, subregional and regional levels is essential.

• Neighbouring states need to collaborate to establish MPAs on the high seas (e.g. under the Specially Protected Areas and Biological Diversity Protocol to the Barcelona Convention). These are necessary to protect sensitive marine areas that are not currently under the jurisdiction of national states, either due to the lack of an official EEZ or to uncertain navigational rights.

Local authorities (regions, provinces, municipalities etc, depending on national governance frameworks), local coastguards and port authorities can play a significant role in reducing the impact of maritime traffic. By running initiatives that complement actions put in place at state level, they can ensure that measures in force are implemented:

• Local authorities should collaborate with local maritime companies, identify and implement piloting solutions to avoid accidents in particularly sensitive areas. They should promote innovative procedures and technologies, such as collision avoidance devices.

• Port authorities should enforce international and national standards and requirements, for example through ship inspections. Coordination mechanisms involving port authorities and port states such as the Mediterranean MoU are particularly useful in order to avoid 'ports of convenience' in the region

• Coastguards should use innovative procedures, tools and technologies, such as risk assessment and spills modelling, to reduce the risks and mitigate the impacts of oil spills. In addition, they should support and promote the establishment of volunteer rescue and cleaning patrols and rescue centres. Coastguards should also patrol MPAs regularly and ensure the compliance of ships through enforcement actions such as board-and-search and even arrest.

• Local authorities need to collaborate with MPA management bodies to develop joint solutions – including monitoring, modelling and vulnerability assessments – to monitor the impact of maritime traffic and mitigate the impact of pollution from port operations.

Regional ocean governance mechanisms such as the Barcelona Convention can contribute to safeguarding MPAs from the impacts of navigation. They do this through a variety of tools including regional protocols and action plans; while also providing guidance to the contracting parties on the impacts of maritime transport and potential mitigation strategies.

• From the regulatory perspective, stronger enforcement and compliance mechanisms should be established for relevant legal frameworks. These include the Protocol Concerning Co-operation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea and the Protocol

on the Prevention of Pollution in the Mediterranean Sea by Transboundary Movements of Hazardous Wastes and their Disposal.

• Regional governance mechanisms should also be used to further support the designation of the Mediterranean as an Emission Control Area, particularly for nitrogen and sulphur oxides, to the benefit of all marine ecosystems in the region.

• The implementation of ecosystem-based marine and coastal planning tools, such as MSP and ICZM, should be prioritized across the whole region. All Mediterranean countries should ratify and implement the ICZM Protocol, as this will support ecosystem-based planning processes which consider all possible interactions within an ecosystem, including the potential environmental risks related to maritime traffic activities. The ICZM Protocol should integrate a regional framework for ecosystem-based MSP.

• Regional governance mechanisms in collaboration with national authorities should promote the further development of transboundary oil spill contingency plans, early warning systems and decision support systems. These tools are much needed in the region, particularly in maritime transportation hotspots such as the Adriatic. Regional governance mechanisms can foster collaboration among countries to develop such tools.

• Coordinated regional initiatives aiming to increase surveillance at sea, using aerial surveys and radar satellite imagery, also represent important means of avoiding and controlling spills in the Mediterranean region.

Figure 27: **Recommendations to the MPA managers** to prevent and minimize impacts on marine ecosystems and raise awareness, increase knowledge and facilitate training:

Prevention of impacts	Minimizing the impacts	Knowledge, training and awareness raising activities
• Collect data and increase knowledge about the impacts and risks of maritime traffic to create the basis for impact avoidance measures). • Advocate within planning and management processes – such as maritime spatial planning and integrated coastal zone management – for the establishment of specific spatial measures aimed at preventing accidents (e.g. establish protection zones or areas). • Collaborate with the regional and subregional MPA manager networks (MedPAN, ADRIAPAN) to raise a stronger advocacy voice in the overall management of maritime transport, e.g by organizing specific thematic sessions in the relevant regional forums and events, or by developing regional reports and policy briefs. • Promote the creation of local MPA networks to enhance coordination in large protected areas (national or international).	• Collaborate in developing contingency plans and intervention protocols to mitigate impacts of oil spill from accidents. Take an active role in implementation if needed. • Train citizens and other actors to clean up oil pollution in the field. • Actively engage in national and regional planning processes (MSP, ICZM) to promote the establishment of measures to mitigate the impacts of accidents (e.g. take into account forecasting tools). • Collect data and spread knowledge on the impact of contamination from maritime traffic and port activities on MPAs, including ecosystem functioning, pollution retention capacity and vulnerability.	• Design, run or participate in monitoring programmes and research studies to increase knowledge on the interactions between MPAs and the maritime transport sector, and its impacts on habitat and species. • Collaborate with research/public institutions to develop new tools and technologies to avoid or mitigate the impact of the sector on MPAs. • Develop agreements with the sector to engage trained observers on vessels for monitoring and research purposes. • Offer best practice training programmes to shipping companies (e.g. speed reduction, prevention of collisions with cetaceans, reduction of underwater noise). • Offer training to volunteers, NGOs and the public in preparing for and dealing with oil spills.

• Suggest practical solutions for impact avoidance at local level to competent actors, or directly implement them if under your competence (examples include: divertion of the traffic lanes which are close to the MPA further offshore; divertion of the vessels' maneuvering area away from the MPA; establishment of a monitoring programme in the area targeting maritime traffic impacts including sediment resuspension and alien species.; cooperation with other MPA managers). • Promote agreements with public authorities to introduce local regulations such as navigation and anchoring restrictions. • Monitor and report violations of national and international regulations.		• Engage people in citizen science and participatory monitoring programmes.

Figure 28: **Recommendations to public authorities** to prevent and minimize impacts on marine ecosystems and raise awareness, increase knowledge and facilitate training:

Prevention of impacts	Minimizing the impacts	Knowledge, training and awareness raising activities
• MSP authorities: Make use of PSSAs, ATBAs and TSSs to protect MPAs from the risks of maritime traffic accidents and reduce the chances of collisions with cetaceans. In the case of transboundary MPAs, states should coordinate joint proposals for routeing systems and PSSAs. • MSP authorities: Use MSP processes to prevent anchoring impacts, introduce voluntary no-anchoring zones, adopt zoning plans indicating sensitive areas as well as suitable anchoring areas, include MPA boundaries and anchor-sensitive areas on nautical charts. • States: Develop regulations to prevent accidents in important marine areas, including the establishment of PSSAs, a ban on the shipping of dangerous goods, and other initiatives.	• States: Promote and actively participate in coordinated response and contingency plans for oil spills and other pollution events at cross-border, sub-regional and regional levels. • States, Coastguards, Maritime authorities, Environmental authorities: Use innovative procedures, tools and technologies to minimize impacts from oil spills. • States: Ensure implementation of the BWM Convention, particularly through inspections and monitoring activities. • Port authorities: Develop joint solutions with MPAs – including monitoring, modelling and vulnerability assessments – to mitigate the impact of pollution from port operational activities (e.g. IMPACT Project).	• State: Promote and finance research and monitoring initiatives. • State: Promote and finance innovative technologies geared to pollution preparedness and response, real-time cetacean positioning, pollutant emissions reduction, noise emission reduction. • State: Promote and finance initiatives to raise awareness of impacts of maritime transport on MPAs.

• States (environmental authorities): Cooperate on bilateral or regional agreements to establish transboundary MPAs. This cooperation is fundamental to ensure a cohesive and coherent network of MPAs, providing consistent rules for navigation and maritime transport. • States: Develop advanced regulations mandating the use of technical solutions to prevent collisions with cetaceans (e.g. real time positioning systems). • Port authorities: Collaborate with local pilot companies to identify and implement piloting solutions in key marine areas. • State and port authorities: Promote cross-border cooperation by defining agreements between national authorities and/or port authorities for navigation safety and pollution response.		

Figure 29: **Recommendations to marine transport companies** to prevent and minimize impacts on marine ecosystems and raise awareness, increase knowledge and facilitate training:

Prevention of impacts	Minimizing the impacts	Knowledge, training and awareness raising activities
• Develop agreements with MPAs on the protection of marine macrofauna. • Respect national legislation concerning real-time cetacean positioning systems or detection technologies. • Participate in training to spot and report cetaceans during navigation.	• Adopt best available technology to avoid marine and atmospheric pollution emissions, to improve waste management, and to avoid waste dispersion at sea. • Adopt best available technologies – based on IMO Guidelines – to minimize underwater noise, including ship concepts, power requirements, propeller and machinery design (e.g. reducing cavitation, wake and propulsion improvement devices, reduction of machinery noise). • Adopt best operational and navigation practices to minimize underwater noise, including operation of propellers, trims, acoustic emissions, propeller cleaning, underwater hull surface smoothing, selection of ship speed, and re-routeing	• Invite on board scientists/experts to perform monitoring/research activities • Train pilots and crews to adopt the latest best practices for impact prevention • Spread awareness of initiatives to other companies in the sector.

7.2.Sector energy / offshore wind farms

Recommendations are derived from the BioConsult/WWF France study (Defingou et al.), 2019

7.2.1.Offshore wind farms (OWF) in marine environment

Wind power is a key form of renewable energy. Within the EU it represents one of the most promising tools for reducing greenhouse gas emissions, and hence diminishing the consequences of climate change. The offshore wind energy sector has been expanding since 1991 when the first OWF was built, and today it is full of potential. However, the rapid increase of the OWF sector is raising concerns over its effects on marine wildlife: research in pioneer countries has shown that offshore wind development has potential negative impacts on the surrounding environment. In addition, the expansion of the OWF sector adds to spatial competition with other economic sectors (e.g. fisheries) in an already busy seascape. Some ecological interests may conflict with other nature conservation targets.

7.2.2. Policy and management recommendations

• MSP should follow the ecosystem approach to reach or maintain Good Environmental Status as well as Favourable Conservation Status. This needs strong SEAs to identify potential future locations for OWFs which as far as possible avoid ecologically sensitive areas in general and MPAs in particular. MSP should also consider cumulative impacts and assess them more broadly.

• Decision-making processes regarding future locations for OWFs should reflect conservation priorities and aim to avoid ecologically valuable and protected areas. Effective, ecosystem-based MSP and SEAs should as far as possible ensure that OWFs are not deployed in areas that contain habitats, species and/or ecological processes that are particularly sensitive to their impacts, whether during construction or operation. Sensitivity mapping is one of the most valuable tools for effective OWF planning, helping developers and regulators in the early stages of decision-making to steer development away from sensitive areas where negative interactions are most likely to happen. This also reduces business risk.

• In countries where OWF deployment already lies within MPAs or which are at the stage of environmental impact and appropriate assessment, developments should be robustly assessed on a case-by-case basis in line with relevant nature conservation legislation, taking a precautionary approach to ensure that site conservation objectives are met.

• When OWFs are planned in sensitive areas, including MPAs, where projected information on their impacts is lacking, commercial production should only begin on a small scale (10-20 turbines). This will enable monitoring of environmental impacts and provide data to define the no-go criteria for further development. To ensure environmental conservation objectives are met, specifications for small-scale OWF proposals should be set by a national scientific expert group which includes MPA managers.

• When avoidance is impossible, impact mitigation measures must be implemented by the competent authority. Ultimately, ecological compensation may be needed if there are still significant residual impacts – this could include measures to restore degraded habitat or create new habitat areas.

• Cooperation between countries and areas sharing sea space or transborder MPAs is essential for the exchange of information, and for setting unified conservation goals, monitoring concepts and action plans.

7.3.Sector: tourism

Recommendations for sustainable tourism by the Mediterranean Tourism community are already available on the EUSAIR web site:
https://www.adriatic-ionian.eu/wp-content/uploads/2020/02/Policy_Recommendations_EN.pdf

Successful tourism in protected areas requires the ability to develop and market tourism products based on what the protected area has to offer, and the ability to maintain the quality of these areas for ongoing future use. The tourism potential of any protected area depends on a variety of factors, including location, accessibility, market demand, proximity to other popular tourism destinations, marketing, presence of local tourism businesses and infrastructure (e.g. accommodation, catering, guiding, etc.; Font et al., 2004). The ability of a protected area to manage tourism depends on the implementation of effective management strategies, the scale of demand for visits to the site, the staff and resources available for management of tourism, and the legal and political environment covering nature protection in the countries in which they are located.

There are many guidance tools on tourism in protected and natural areas. Of particular relevance are volumes within the IUCN's Best Practice Guidelines on Tourism and visitation in protected areas (Leung et al., 2018), and guidance from agencies including the UNDP, the World Bank Group and Convention on Biological Diversity (CBD) on tourism concessions in protected areas (Thompson et al., 2014; Spenceley et al., 2017). For example, IUCN Best Practice Guidelines describe management approaches for tourism in different types of protected area categories according to the IUCN standards (see below Figure 30).

Box 7: Impact of increasing tourism and visitor numbers on emblematic birds - Scandola Island, Corsica

Scandola UNESCO World Heritage Site, Corsica - until the late 1990s, boat traffic within the protected area was small-scale for a limited number of visitors, mainly naturalists. At that time, preliminary studies had already indicated the risk that increased ecotourism and associated boat traffic in the future would have a long-term impact on marine biodiversity on Scandola. More recently, traffic in the area has increased exponentially, accompanied by a decline in environmental awareness among visitors. This pattern of behaviour has led to a deterioration in the status of the flagship species, the emblematic bird of prey, the osprey. As Corsican ospreys are long-lived birds, they may not be seriously threatened, as a reduction in their current breeding performance does not necessarily affect the viability of the population. In fact, the number of pairs of ospreys has remained stable in Corsica and in the Scandola Reserve, but as with other long-lived birds, if the survival rate of adult birds remains constant, other demographic characteristics such as fecundity or survival rate of young birds may determine population size. The low number of fledged juveniles, caused by tourist disturbance, is leading to the long-term decline of these emblematic birds in the Scandola Marine Reserve.

Scandola Reserve, Corsica (this and the following two all photos; A. Sovinc)

Overall, the disappearing ospreys are a clear warning signal of the general deterioration of the marine environment in Scandola. Such warning signals call for urgent regulation of boat traffic: boats should stay at least 300 m away from osprey nests to avoid any disturbance to parents and offspring and to allow males to fish efficiently. To delineate closed areas, waypoint buoys could be placed at sea according to the active nest distribution of ospreys. Increasing the size of the protected area boundaries would mitigate disturbance: This measure has been requested by Parc Naturel Regional de Corse for many years. In addition, all osprey nesting sites should be monitored and consideration could be given to visiting Scandola only between August and March, outside the osprey breeding season. Such measures have already proven effective in restoring bird and fish communities in other marine protected areas.

Source: Monti et al., 2018

Figure 30 presents permitted activities in different categories of the IUCN protected area classification.

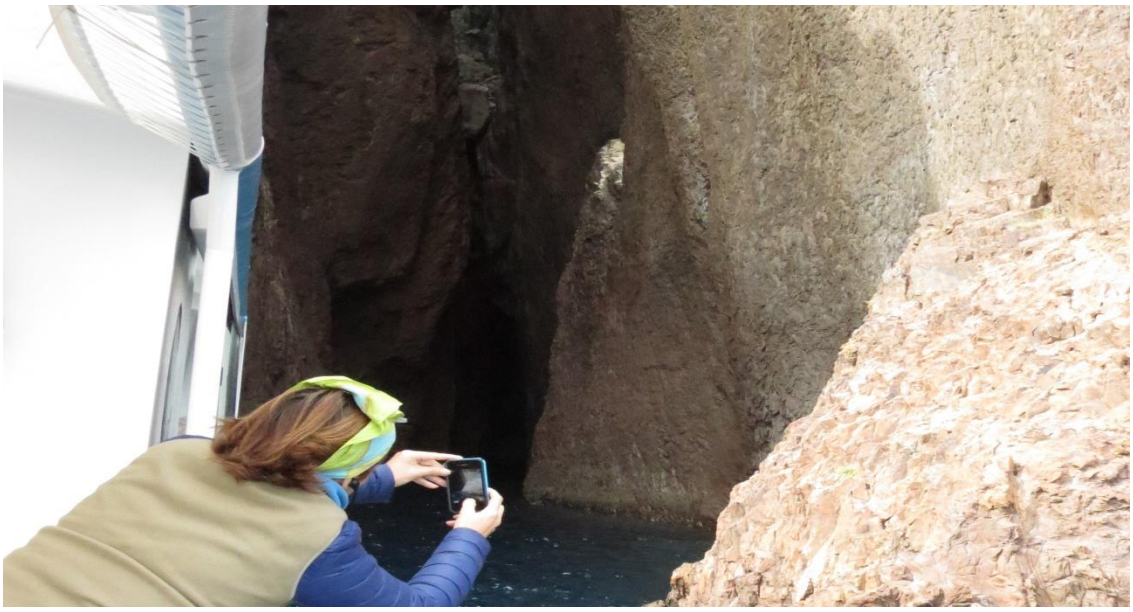
Figure 30: IUCN Protected Area Categories and their management approach to tourism.

IUCN Protected Area Category*	Primary goal and protected value(s)	Approach to tourism and visitor use	Types of visitor					
			Individual	Researcher	Commercial users	Tourists and recreationists	Spiritual and cultural users	Commemor-ative users**
Ia) Strict Nature Reserve	Biodiversity or geoheritage protection (ecological and scientific values)	• Public access only possible through organised scientific, citizen science or volunteer service programmes	✓	✓			✓	
Ib) Wilder-ness Area	Protection of the natural character and condition of unmodified or slightly modified areas (wilderness and ecological values)	• Low-density, self-reliant visitor use is often a management objective • Restricted public access in terms of amount of use, group size, activity, etc. • Tourism activity limited and highly regulated (e.g. through special use permits)	✓	✓				
II) National Park	Protection of an ecosystem and its large-scale ecological processes (ecological, recreation and community values)	• Visitor use and experience is often a management objective • A range of recreation opportunities typically provided through zoning, facility development and visitor services (countries have marked differences in their attitudes to tourism accommodation within protected areas)	✓	✓	✓	✓	✓	✓
III) Natural Monument	Conservation of specific natural features (ecological, recreation and community values)	• Visitor use and experience is often a management objective • Recreation opportunities are typically provided to facilitate feature protection and public understanding	✓	✓	✓	✓	✓	✓
IV) Habitat/ Species Management Area	Conservation through management intervention (ecological, community and recreation values)	• Recreation visitation and commercial tourism are usually management objectives • A range of recreation opportunities is provided with associated facilities and services • Commercial tourism common for wildlife viewing	✓	✓	✓	✓	✓	✓
V) Protected Landscape/ Seascape	Landscape / seascape conservation (community, ecological and recreation values)	• Tourism is usually a management objective • A range of recreation opportunities is provided with associated facilities and services • Commercial tourism common	✓	✓	✓	✓	✓	✓
VI) Managed Resource Protected Area	Sustainable use of natural ecosystems (community, recreation and ecological values)	• Recreation visitation and commercial tourism can be key objectives • A range of recreation opportunities is provided with associated facilities and services • Commercial tourism common	✓	✓	✓	✓	✓	✓

Figure 31: Ten principles of tourism in protected areas (Leung, 2018)

1. Appropriate management depends on objectives and protected area values	• Objectives within protected area management plans provide definitive statements of the desired outcomes of protected area management. • They identify the appropriateness of management actions and indicate acceptable resource and social conditions. • They allow evaluation of success of management actions.	• Ensure management plans include clear appropriate objectives, with conservation primary above all. • Establish and agree to objectives through public participation.
2. Proactive planning for tourism and visitor management enhances effectiveness	• Proactive management starts with the articulation of protected area values and management objectives. Policies and management decisions that can be tied to these values have a better chance for effective implementation. • The practice of forward-thinking can lead to better awareness of emerging opportunities for recreation and tourism activities.	• Provide opportunities for visitors to learn about protected area values through information and programming. • Be cognizant of emerging visitor activity or use pattern that may have management implications
3. Changing visitor use conditions are inevitable and may be desirable	• Impacts, use levels and expectations of appropriate conditions tend to vary (e.g. impact of a campsite in the periphery vs. centre of the protected area). • Environmental variables influence visitor use and level of impact (e.g. topography, vegetation, access).	• Use zoning explicitly to manage for diverse recreation opportunities. • Use knowledge of diversity to make decisions on desirability of tourism in specific locations (thereby separating technical decisions from those based on value judgements)

4. Impacts on resource and social conditions are inevitable consequences of human use	• Any level of recreational use leads to some impact; in most cases the initial, small levels of use generate the greatest impacts per unit use. Where there is a conflict between conservation and other objectives conservation has primacy. • The process of determining the acceptability of impact is central to all visitor use planning and management. • Evidence of impacts can be used for environmental education for park visitors.	• Managers must ask: "How much impact is acceptable based on protected area values and objectives?" • Managers must act appropriately to manage the acceptable level of impact.
5. Management is directed at influencing human behaviour and minimising tourism-induced change	• Protected areas often protect natural processes and features, so management is generally oriented toward managing human-induced change since it causes most disturbances. • Human-induced change may lead to conditions considered to be undesirable. • Some changes are desirable and may be the reason for the creation of the protected area. For example, many protected areas are created to provide recreation opportunities and local economic development.	• Management actions determine what actions are most effective in influencing amount, type and location of changes.
6. Impacts can be influenced by many factors so limiting the amount of use is but one of many management options	• Many variables other than *level of use* affect the use/impact relationship in protected areas (e.g. behaviour of visitors, travel method, group size, season and biophysical conditions). • Impacts from visitor use or management activities may occur outside the protected area, or not be visible until later (e.g. prohibitions of use may displace that use to other areas; or poor water treatment may result in water pollution downstream). • Planners need substantial knowledge of relationships between use and impacts to predict future impacts at a variety of scales and over time.	• Education and information programmes, as well as regulations aimed at restricting visitor behaviour, may be necessary.



7. Monitoring is essential to professional management	• Monitoring is a key step for all adaptive or proactive management frameworks, generating data on resource, social, community and economic conditions that inform management decisions. • Monitoring need not be complicated or expensive. There are often several possible options.	• Enhance public engagement and visitor education by encouraging their involvement in monitoring.
8. The decision-making process should separate technical description from value judgements	• Many protected area management decisions are technical (e.g. location of trail, design of visitor centre), but others reflect value judgements (e.g. decisions on whether and how to limit use, types of facilities and tourism opportunities provided).	• Decision processes should separate questions of 'existing conditions' from 'preferred conditions'.
9. Affected groups should be engaged since consensus and partnership is needed for implementation	• All management decisions affect some individuals and groups. These groups should be identified early in the decision-making process.	• Rights-holders and stakeholders of protected area should be involved in identifying values of protected areas and developing indicators • With suitable training, rights-holder and stakeholder groups should be able to engage in monitoring, management and education.
10. Communication is key to increased knowledge of and support for sustainability	• Communication of results from monitoring tourist impacts on conservation and community benefits can explain reasons for management decisions.	• A communication strategy is needed to support a proactive or adaptive management process.

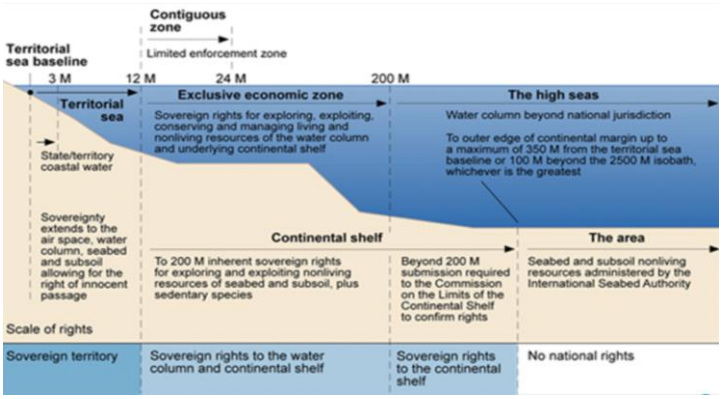
8.UN GLOBAL PROCESS »BIODIVERSITY BEYOND NATIONAL JURISDICTION« AND THE ADRIATIC-IONIAN REGION

8.1. International context for the ocean waters

Nearly two-thirds of the world's ocean is beyond national jurisdiction – where no single state has authority. This area reaches depths of over 10 km and represents 95% of the Earth's total habitat by volume. Areas beyond national jurisdiction (ABNJ) are home to significant biodiversity, including unique species that have evolved to survive extreme heat, cold, salinity, pressure and darkness.

The United Nations Conference on the Law of the Sea (1973–82) established territorial seas for coastal countries extending up to 12 nautical miles (22.2 km) from their coastlines. Furthermore, UNCLOS instituted the idea that countries could claim management jurisdiction of natural resources to the limits of an exclusive economic zone (EEZ) automatically extending from 12 nm (22.2 km) to 200 nm (371 km) and out to 350 nm (649 km) if the country can prove that the continental shelf extends uninterrupted. This means that the sea bed within these so-called 'EEZs' can be leased or given away as part of oil or mineral rights, and the fish and other resources in the water itself can be exploited. The countries themselves are responsible for management.

Figure 32: Terrestrial sea, Exclusive economic zone and The high seas



There is no comprehensive global framework for the conservation and sustainable use of marine areas beyond national. The UN Convention on the Law of the Sea (UNCLOS) provides an international legal regime that governs the ocean. It creates an obligation to conserve the marine environment, but **it does not provide specific mechanisms or processes for conserving marine biodiversity in ABNJ**. Other legal instruments address parts of the problem, such as unsustainable fishing or pollution from ships, or specific geographical areas.

Negotiations are underway to create an Implementing Agreement to UNCLOS, which would help close the existing ABNJ governance gap and ensure the conservation and sustainable use of biodiversity in these areas. The new agreement under UNCLOS could ensure the protection of biodiversity in ABNJ by providing for:

A network of marine protected areas
The agreement could provide a means of creating a global, integrated network of marine protected areas (MPAs) – areas set aside for long-term conservation – which would support ecological connectivity and climate change resilience, and help preserve species and ecosystems. MPAs range from strictly protected marine reserves to areas allowing sustainable use of resources. Restriction of human activities in

ecologically or biologically significant areas is an important means to prevent environmental degradation.

Equitable sharing of benefits from marine genetic resources
The agreement could guide research collaborations between scientists, industry and states involving marine genetic resources, by providing procedures for access and sharing of benefits from these resources. Facilitation of developing countries' involvement in marine genetic research can enhance results and lead to technical advances that benefit all.

Standards for environmental impact assessments
Mandatory minimum standards for screening, scoping, conducting and monitoring Environmental Impact Assessments (EIAs) and Strategic Environment Assessments, as well as best practice guidelines for assessments, would improve consistency, legal certainty, and the implementation of measures to protect the marine environment.

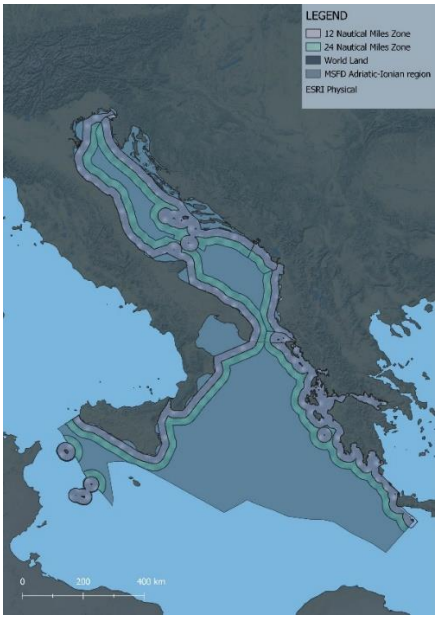
Capacity building and technology transfer
Effective conservation of the world's biodiversity requires significant technical and technological capacity. The agreement can create mechanisms and requirements for capacity building and technology transfer that will enable its implementation and protect biodiversity in ABNJ
https://www.iucn.org/commissions/world-commission-protected-areas/our-work/marine

8.2. Natura 2000 obligations in the areas within the EEZs

Besides the Natura 2000 specific objectives, their potential to contribute to an ecosystem-wide conservation and their complementarity with other national and supranational initiatives (e.g. nationally established MPA networks, the Marine Strategy Framework Directive, the Convention on Biological Diversity Ecosystem-Based Approach) have been called into question.

Target 1 of the EU Biodiversity Strategy 2030 is to fully implement the Birds and Habitats Directives. This includes the action to complete the Natura 2000 network in the marine environment, further supporting the 2005 European Court of Justice judgement on implementing Natura 2000 in the EU Member States' Exclusive Economic Zone (EEZ), i.e. beyond 12 NM, up to 200 NM.

Figure 33: Lines of the12/24 miles of shorelines under the Adriatic-Ionian Sea.



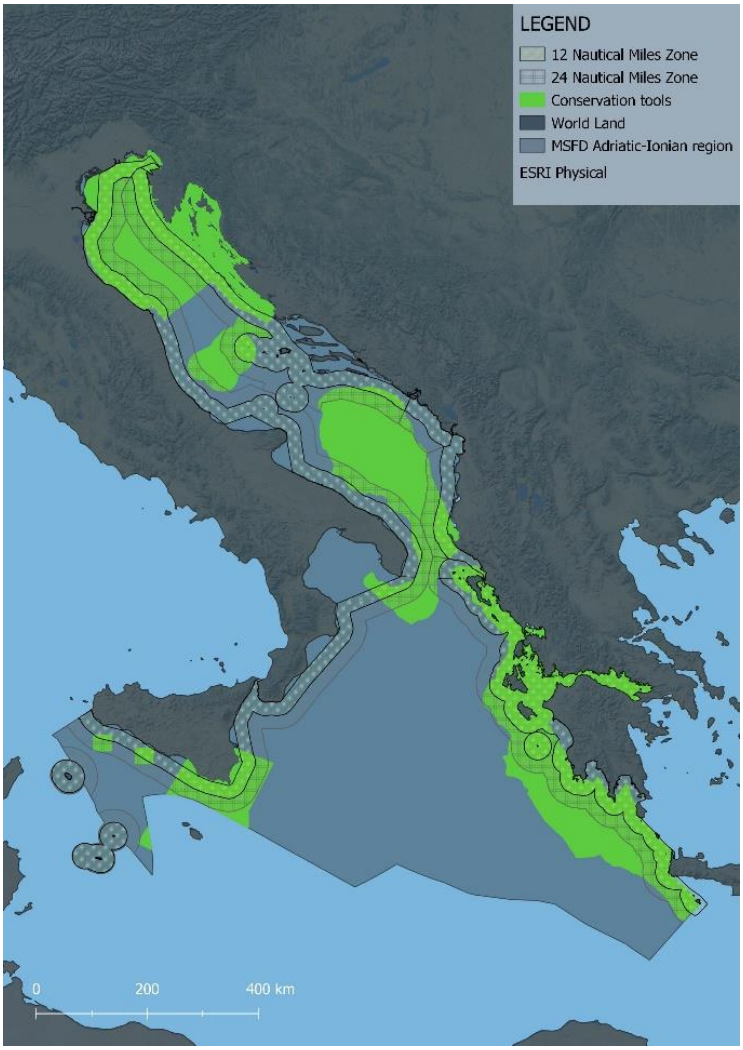
It should be noted that application of European nature directives in the marine environment only became legally clear in Europe through a 2005 judgement by the European Court of Justice.

Fishing operations likely to have a significant effect on a marine Natura 2000 area shall be subject to prior assessment and authorisation according to Article 6.3 of the Habitats Directive. This provision, partly also article 6.2, and in particular the cjeu case law, implies that this prior control should be applied rather often in practice, even for recurrent fishery irrespective of when the first fishing operation occurred in an area.

Article 11 of the Common Fisheries Policy Regulation entails that EU Member States apply Article 6 of the Habitats Directive within the entire exclusive economic zone, to both own and foreign fishing vessels. A Member State is also, under certain preconditions, empowered to impose restrictions on fishery not supported by article 6 of the Habitats Directive, especially within the 12 nautical miles zone. A Member State is not formally hindered from excluding fishery from prior assessment and authorisation if instead general requirements on fishery in legislation can ensure that no future fishing operation is likely to have a significant effect on the Natura 2000 area.

https://www.researchgate.net/publication/277580308_Marine_Natura_2000_and_Fishery_-_The_Case_of_Sweden

Figure 34: Biodiversity most valuable areas and 12/24 miles of shorelines under the Adriatic-Ionian Sea.



Box 7: Biodiversity values in strictly protected open marine seas

Results of research show that the highest fish biomasses are observed in fully protected MPAs. The values observed at Natura 2000 sites do not differ or only slightly differ from those observed at control sites. This shows that Natura 2000 sites may not presently contribute to effectively protect fish and the related rocky reef ecosystems.

The results of the research show that to achieve ecosystem-wide benefits it is crucial to rethink and broaden the scope of Natura 2000 sites and adapt their management to that. By providing sounder and more comprehensive management plans, and implementing more consistent ecosystem-wide conservation measures, Natura 2000 marine sites could become an extraordinary tool at the EU scale, capable of delivering wider ecological benefits.

https://onlinelibrary.wiley.com/doi/10.1002/aqc.3026

8.3. MPAs within the EEZs

UNCLOS clarifies the importance of the protective role of the EEZ: "In the exclusive economic zone, the coastal State ... shall have the competence provided for in the relevant provisions of this Convention for ... the protection and preservation of the marine environment."
https://www.un.org/Depts/los/convention_agreements/texts/unclos/part5.htm

In the absence of more detailed guidance, the Ocean Healt Index (OHI) could be used as a reference for the extent of the EEZ to ensure effective implementation of conservation objectives. As shown in Box 8, the OHI refers to the 10% of the EEZ that should be designated as MPAs and emphasises the importance of strict protection measures (no-take zones).

Box 8: OHI+ = Independent Assessments at any Scale

OHI+ assessments are conducted by independent groups that use the Index approach to measure ocean health in their regions, countries, states, and communities.

Independent assessments use the same framework as the global assessments, but allow for exploration of variables influencing **ocean health at the smaller scales** where policy and management decisions are made.

Complete information on how to conduct OHI+ independent assessments at national and subnational scales can be found at ohi-science.org.

The Ocean Health Index measures MPAs in two ways: (1) the percent of each country's EEZ designated as MPAs; (2) the percent of each country's coastal waters out to 3 nautical miles that is designated as MPAs.

The first is used for the Wild-Caught Fisheries **sub-goal** of Food Provision, Iconic Species **sub-goal** of Sense of Place, and **both sub-goals of Biodiversity**. **For these goals the reference point is for at least 10% of the EEZ to be protected as MPAs**.

The second is used for Artisanal Fishing Opportunities, Natural Products and Carbon Storage. The rationale for using a narrower area is that protecting nearshore ecosystems does more to sustain these goals than protecting open-ocean areas does. For these goals the reference point is

for 30% of coastal waters out to 3 nautical miles to be protected as MPAs.

In both cases information on MPAs comes from the Protected Planet database maintained by the UN Environment Programme-World Conservation Monitoring Center (UNEP-WCMC) and the International Union for Conservation of Nature (IUCN). Additinal infromation from the Sea Around Us project is also used.

IPPO is an initiative by the International Union for Conservation of Nature (IUCN) in collaboration with the United Nations Environment Programme and World Conservation Monitoring Centre (UNEP-WCMC), providing definitions, information, and resources regarding Marine Protected Areas (MPAs), marine reserves, and Marine World Heritage Sites.

9.KEY FINDINGS AND NEXT STEPS

The main objective of any MPA is to protect biodiversity. For marine areas, it has been demonstrated through scientific research that fully protected, comprehensive and connected MPAs fulfil this objective. It has also been shown that the conservation benefits of partially protected areas, which are also enforced, contribute to a limited increase in biodiversity, but never to the level secured by fully protected areas.

Key findings from the analyses of marine protected areas in the EUSAIR region:

- In the EUSAIR region there are **46 nationally designated marine protected areas** (protected areas covering at least part of the sea water). The **marine surface** area in these areas **covers 1,680 km2**.

- In addition to the MPAs, there are **348 marine Natura 2000 sites** in four EU Member States. Within these marine Natura 2000 sites, there are **17,268 km2 of marine surface area**.

- The **total protected marine area in the EUSAIR region**, consisting of nationally designated marine protected areas and the network of marine Natura 2000 sites corresponds to **3.57% of the marine area of the EUSAIR region**.

- There are only five nationally protected marine areas in EUSAIR region in the IUCN categories I and II which are considered as strictly protected areas which demonstrates that **only 0.07% of the marine waters** in the EUSAIR region are currently under **strict protection**.

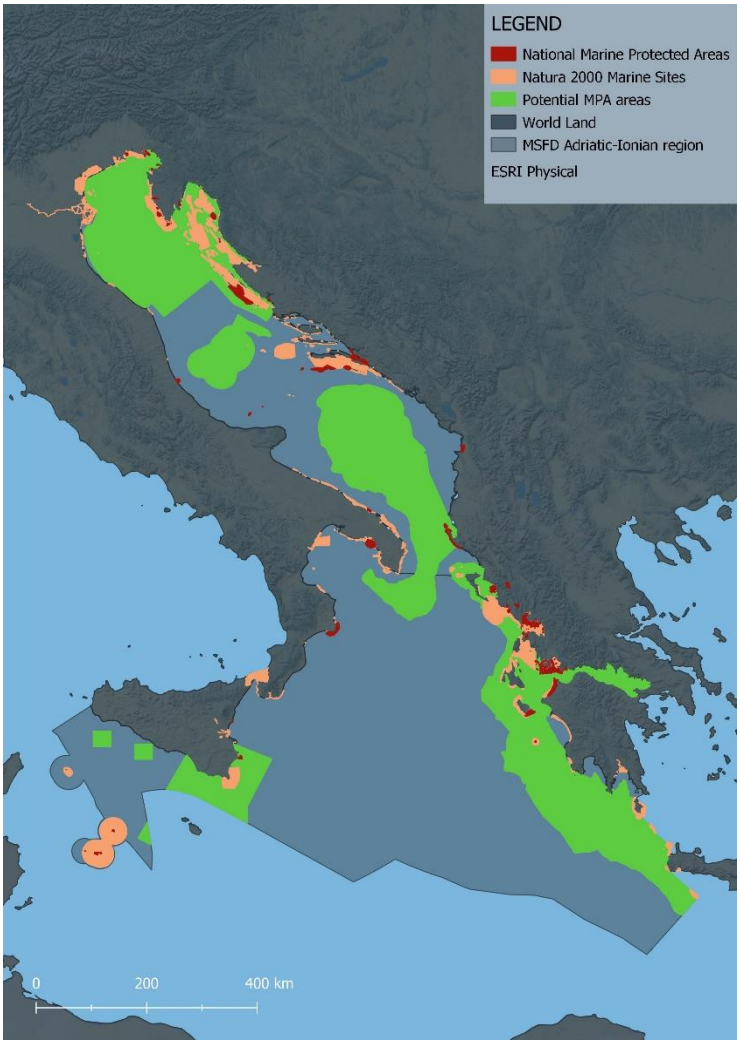
- The average terrestrial and marine part in the MPAs covers 60.32 km2 and 73.40 km2 in the marine Natura 2000 sites. The marine part in MPAs covers on average 33.68 km2 and 44.63 km2 in marine Natura 2000 sites.

- The EU Biodiversity Strategy 2030 sets a target to protect 30% of the marine area, of which 1/3 (=10%) should be under strict protection and "no-take" zone. The number and extent of MPAs under strict protection with "no-take" zones is almost non-existent, so fishing continues to damage most marine areas in the EUSAIR region.

- Data on the current extent of protected and strictly protected marine areas in the EUSAIR region show that this region has the lowest extent of protected marine areas in the Mediterranean Sea and that major efforts are urgently needed to move towards the agreed EU biodiversity targets by 2030.

- OECMs are recognised as contributing to the objectives of the EU Biodiversity Strategy, but this form of area-based conservation measure is absent from the EUSAIR Marine Region.

Figure 35: Existing MPAs and marine Natura 2000 areas (red + orange) and other areas of significant biodiversity value (green) in the Adriatic – Ionian region where additional protected areas should be designated.



The next steps in the process of establishing an effective and functioning area-based marine component of the Trans-European Nature Network in the Adriatic-Ionian Sea, which places 30% of the marine area under protection (and 10% under strict protection), are presented as steps towards more effectively protected territories and requires activities at three levels:

At the local/national level, the marine protected areas system should include:

- Existing MPAs in country asessed against the IUCN standards and category objectives (see box 7)
- More MPAs, especially those which are fully protected / no-take areas.
- Larger existing MPAs.
- Blue corridors, multiple use marine resource areas and MPA networks as alternatives when it is not possible to create large MPAs.
- Completed network of marine Natura 2000 sites in EU countries (and EMERALD in non-EU countries).
- Identified potential marine Natura 2000 sites in non-EU countries.
- New, expanded and additional MPAs outside territorial waters.
- Marine OECMs (see chapter 5.4).

Box 9: **Denmark's marine protected areas** assessed according to the IUCN definition of protected areas

Denmark's marine protected areas were reviewed in 2019/20 to assess them according to the IUCN definition of protected areas. A total of 332 marine protected areas (MPAs) were identified, all of which were assessed in this project. The results show that 198 of the 332 MPAs meet the IUCN definition of protected areas. A total of 508,630 ha of marine area was assessed to meet the IUCN definition, representing 4.8% of Denmark's total marine area.

For more information, visit www.beskyttetnatur.dk the full report with an English summary under "Udgivelser" can be downloaded. See all 332 MPAs on a clickable map of Denmark, and see the assessment of each MPA.

Information provided by: Ann-Katrine Garn; AKG@zoo.dk

At the transboundary level, the marine protected area system should include:

- Transboundary MPAs and other area-based conservation measures.
- Blue corridors as part of the no-take zone or limited impact zone in the EEZ.

At EUSAIR level:

- An action plan for the establishment and effective management of MPAs in the context EUSAIR region to achieve the EU Biodiversity Strategy 30%/10% targets for the marine environment.

Box 10: Proposed Roadmap - **the future activities of the governance structure for EUSAIR should include the following steps:**

1.The setting of ambitious targets at EU and global level on the amount of sea that should be protected in the specified time...

(Done. EU Biodiversity Strategy 2030 targets 30/10% of protected areas)

2. Assessment of the extent of current MPAs/Natura 2000 marine areas at regional (EUSAIR) and national (country) levels...
(Done. As the result of this report)

3.Agree the commitments of EUSAIR countries to implement common framework action objectives within country responsibilities...

(To be agreed at the next EUSAIR meeting)

4.Strategic diagnosis of regional potential MPAs before defining the common framework for strategic action

a)Identification of potential areas for future protection in the region and by countries.

(Done. See Annex 3 of this report). Identification of potential marine OECMs and their recognition is a parallel part of this process.

b)Assessment of strategic issues in the context of protection and development of the region.

5.Activities to implement the strategy (differentiation between the common orientations and commitments of each partner/country, definition of an appropriate number of concrete actions, definition of the frequency of actions).

6.Reinforcement of existing activities of partners/countries in combination with new initiatives (blue (and green) corridors, ecosystem services, charismatic species, interaction with other sectors, climate change process, new partnerships, innovative activities/tools...).

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11.ANNEXES

Annex 1: Sources of information that can be considered for additional MPA designations.

Annex 2: Available information on identified potential marine Natura 2000 sites for EU Member States in the Adriatic-Ionian region

Annex 3: Potential new MPAs in the EUSAIR

Marine Expert Group
under the Birds and Habitats Directives

Meeting of the Marine Expert Group (MEG)

22-23 February 2021
Online meeting (MS Teams)

Agenda item:	1.3
Document:	2
Title:	Sources of information that can be considered for additional MPA designations
Prepared by:	DG Environment
Date prepared:	4/2/2021
Background:	This document presents sources of spatial information on marine habitats and species that may be useful for designation of additional MPAs in the context of the Biodiversity strategy. It includes, for each source, a link to the data, a short description of the dataset, including its geographic cover, and a preliminary assessment of the data's relevance. Some sources may have to be quality checked before being used for additional MPAs designations. The members of the group are invited to share additional relevant information they may be aware of, as well as their views on whether it would be useful to compile the data into a centralised online viewer, such as the ones presented under section 1 of the document.

Sources of information that can be considered for additional MPA designations

Contents

1. Examples of existing platforms

1.1. HELCOM database

Link: http://maps.helcom.fi/website/mapservice/

Map viewer includes:

- HELCOM MPAs
- Natura2000 sites
- Baltic Sea EBSAs
- Baltic Sea Fisheries
- RAMSAR sites
- UNESCO sites
- Harbour porpoise probability of detection
- Red list species and biotopes

1.2. Oceana roadmap towards representative EFH network viewer

Link: https://eu.oceana.org/en/essential-fish-habitats-viewer

Map viewer includes:

- Areas of interest for EFH
- Temporary & permanent fisheries closures
- Nursery and spawning areas (including levels of persistence)

1.3. EEA Wise Marine – European Reference Map

Link: https://water.europa.eu/marine/data-maps-and-tools/map-viewers-visualization-tools/european-reference-maps

Map viewer includes:

- Marine regions and subregions
- EU Marine Protected Areas
- MAES marine and coastal ecosystems
- Marine Litter watch data
- Marine species and habitats distribution (HBD Article 17 and Article 12 information)

2. Possible data sources

Data relevance legend:

Relevant: Yes

Relevant: Maybe

Relevant: No

2.1. Important Bird Area's (IBAs)

Relevant: 

Link: http://datazone.birdlife.org/site/mapsearch

Description: IBA's are areas of international importance for birds, in terms of presence and abundance of species that occur there, year round or seasonally. The selection of IBAs is achieved through the application of quantitative ornithological criteria together with knowledge of the sizes and trends of bird populations. The criteria ensure that the sites selected as IBAs have true significance for the international conservation of bird populations, and provide a common framework that all IBAs adhere to, thus creating consistency, and enabling comparability between, sites at national and international levels.

Range: all Europe

2.2. Important Marine Mammals Areas (IMMAs)

Relevant: 

Link: https://www.marinemammalhabitat.org/immas/

Description: IMMAs are discrete areas, which are important to improving the conservation status of marine mammal species or populations. The objectives of IMMAs is to provide advice on marine mammal conservation priorities. The identification of IMMAs is achieve through the application of eight sub-criteria comprised in four main criteria: 1) Species or population vulnerability, 2) Distribution and Abundance, 3) Key life cycle activities and 4) Special attributes. Any candidate need only satisfy one of the listed criteria and/or sub-criteria to qualify for IMMA status.

Range: Mediterranean

2.3. Oceana Essential Fish Habitats

Relevant: 

Link: https://eu.oceana.org/en/essential-fish-habitats-viewer; Oceana 2020 factsheet: https://eu.oceana.org/sites/default/files/oceana_gfcm_2020_an_essential_fish_habitats_network_to_rebuild_fisheries.pdf

Description: Essential Fish Habitats, such as nursery areas and spawning ground of important commercial fish species, including the level of persistence of these areas. The layers include: Areas of interest of EFH, Fisheries Restriction Areas (FRA) proposals and Current regional closures. In addition, there are layers of the nursery areas (including their level of persistence) for *Merluccius merluccius*, *Mullus barbatus* and *Aristaeomorpha foliacea*, and spawning ground layers (including levels of persistence) for *Parapenaeus longirostris*, *Aristeus antennatus*, *Mullus surmuletus*, *Nephrops norvegicus* and *Solea solea*.

Additional EFH data: In addition to the areas shown in the interactive map, Oceana have identified further areas of interest for EFH (Oceana 2020 factsheet, Map 1). Oceana also have information on

Vulnerable Marine Ecosystems EFH such as on the distribution of the bamboo coral *Isidella elongata* (Oceana 2020 factsheet, Map 2).

Range: Mediterranean

2.4. Oceana Biodiversity hotspots

Relevant: 

Link: https://eu.oceana.org/en/publications/reports/unprotected-marine-treasures-oceana-proposal-protect-15-marine-biodiversity

Description: 15 marine biodiversity hotspots, which Oceana proposes to protect. Habitats covered by those sites are: biogenic reefs, bubbling reefs/ pockmarks, coral gardens, coralligenous/ rhodolith beds, deep-sea sponges, engineer amphipods, fladas, kelp forests, sabellaria reefs, sandbanks, sea caves, sea pen fields, seagrass beds, seamounts/ banks/ stone reefs and white coral reefs. Key species/ species groups covered are: cod, corals, European eel, marine mammals, turtles, sharks and rays. The document provides more information on the spatial extent and importance of each site.

Range: Throughout Europe: the sites are located in the Baltic Sea (#3), in the North Sea (#4), in the Spanish and Portuguese Atlantic coast (#4) and in the Mediterranean Sea (#4).

2.5. Essential fish habitats identified by JRC

Relevant: 

Link 1: https://fishreg.jrc.ec.europa.eu/web/fish-habitat/index.html

Description: Real-time map of potential hake nursery areas. The map is continuously updated based on the latest Copernicus satellite observations to allow for a dynamic management.

Range: Mediterranean

Link 2: https://fishreg.jrc.ec.europa.eu/web/fish-habitat/habitatmapping

Description: Maps showing potential essential habitats of key species using daily satellite chlorophyll-a and physics data from EU Copernicus. Modelled maps are available for the following species:

- Atlantic bluefin tuna – feeding and spawning areas in the North Atlantic (feeding areas are modelled both for juveniles and adults)
- Fin whale – feeding areas in the West Mediterranean Sea
- Hake – nursery feeding areas in the Mediterranean
- Skipjack tuna – feeding areas in the Atlantic
- Blue shark – feeding areas (in preparation)

Range: All Europe (varies with species)

2.6. HELCOM threatened and/or declining species and biotopes/habitats

Relevant: 

Link: http://maps.helcom.fi/website/mapservice/?datasetID=d27df8c0-de86-4d13-a06d-35a8f50b16fa&features=MPA_ID:113

Description: The map has a distribution layer for each of HELCOM's threatened and/ or declining species and biotopes. In addition, the distribution is visualised in the information sheets for each of HELCOM's threatened and/ or declining species and biotopes. In some cases, the spatial data may be too coarse, but for some species or habitats it may be useful. The biotopes are EUNIS level 5.

Links to Information Sheets:

- Biotopes: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-biotopes-habitats-and-biotope-complexes/biotope-information-sheets/
- Benthic Invertebrates: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-benthic-invertebrates/
- Birds: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-birds/
- Fish and Lamprey Species: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-fish-and-lamprey-species/
- Macrophytes: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-macrophytes/
- Marine mammals: https://helcom.fi/baltic-sea-trends/biodiversity/red-list-of-baltic-species/red-list-of-marine-mammals/

Range: Baltic Sea

2.7. OSPAR Threatened and/ or declining habitats

Relevant: 

Links:

- OSPAR: https://odims.ospar.org/layers/geonode:ospar2018_points
- EMODnet (includes legend of data; layer in composite data products): https://www.emodnet-seabedhabitats.eu/access-data/launch-map-viewer

Description: The database is a compilation of OSPAR threatened and/ or declining habitat data submitted by the Contracting Parties. Its completeness is related to the effort of its contributors. It does not contain (1) modelled predictions of the presence or extent of habitats in areas of limited data, (2) Information on habitat condition, or (3) many absence records (although the data schema allows for it). More information of the dataset can be found here.

Range: North-East Atlantic

2.8. ICES Vulnerable Marine Ecosystem

Relevant: 

Link: https://www.ices.dk/data/data-portals/Pages/vulnerable-marine-ecosystems.aspx

Description: Portal to view and download observations of Vulnerable Marine Ecosystem (VME) indicators and habitats in the North Atlantic. VME habitat types included in the dataset are: Anemone aggregations, Cold seeps, Cold-water coral reefs, Coral garden, Deep-sea sponge aggregations, Hydrothermal Vents/ Fields, Mud and Sand emergent fauna, Seapen fields, Stalked crinoid aggregations, Tube-dwelling anemone aggregations and Xenophyophore aggregations.

The database is comprised of:

1. 'VME habitats': records for which there is unequivocal evidence for a VME, e.g. ROV observations of a coral reef
2. 'VME indicators': records that suggest the presence of a VME with varying degrees of uncertainty. For VME indicators a weighting system of vulnerability and uncertainty is provided as part of the database to aid interpretation

Distinctiveness to OSPAR habitats dataset: The majority of records within the ICES VME database are not duplicated within the OSPAR database of threatened and/or declining habitats. These two databases should be seen as complementary but users should be aware that some habitat types included in the OSPAR database of threatened and/or declining habitats would likely qualify as VMEs. Examples of such habitats include *Lophelia pertusa* reefs and deep-sea sponge aggregations.

Range: North Atlantic

2.9. Nordic Council of Ministers – Vulnerable Marine Ecosystems

Relevant: 

Link: https://www.norden.org/en/publication/vulnerable-marine-ecosystems-vmes

Description: The documents includes a map with the position of records of VME indicator species compiled in the study (page 14). The VMEs that were studied are: Sponge aggregations (on soft bottom, hard bottom and deep arctic bottoms), Sea pen communities (sublittoral and bathyal), Gorgonians (on soft bottom and hard bottom), Cup coral fields, Stylasterid corals and Cauliflower corals. The specific indicator species are listed in Appendix 3.

Comment: Although this dataset appears to be very similar to the ICES VMEs dataset, it seems to include additional data (e.g. around Northern Scotland).

Range: North-East Atlantic

2.10. UNEP WCMC Ocean Data Viewer

Link: https://data.unep-wcmc.org/

Relevant layers:

Relevance	Layer name	Comment	Link
	Global Distribution of Saltmarshes	Relevant for Blue Carbon. Dataset shows known extent of saltmarsh distribution globally, drawing from occurrence data (surveyed and/or remotely sensed). The dataset consists of one polygon layer, one point layer, and an accompanying Access database that contains species information (linked exclusively to the point dataset)	https://data.unep-wcmc.org/datasets/43
	Global Distribution of Seagrasses	Relevant for Blue Carbon. This dataset shows the global distribution of seagrasses, and is composed of two subsets of point and polygon occurrence data. The data were compiled by UN Environment World Conservation Monitoring Centre in collaboration with many collaborators (e.g. Frederick Short of the University of New Hampshire), organisations (e.g. OSPAR), and projects (e.g. the European project Mediterranean Sensitive Habitats "Mediseh"), across the globe (full list available in accompanying metadata table within the dataset).	https://data.unep-wcmc.org/datasets/7
	Global Distribution of Cold Water Corals	This dataset shows of the global distribution of cold-water corals. Occurrence records are given for 86 Families under the subclass Octocorallia (octocorals; also known as Alcyonaria) and four Orders (in Class Anthozoa): Scleractinia (reef-forming corals), Antipatharia (black corals), Zoanthidae (encrusting or button polyps), and Pennatulacea (sea pens). Occurrence records are also available for the order sub-Order Filifera (lace corals) in Class Hydrozoa.	https://data.unep-wcmc.org/datasets/3

Comment: Data is relevant, but the question is how accurate it is reflecting the distribution and whether it is still up to date. Also, no information on quality of the habitats is available.

Range: all Europe

2.11. CBD Ecologically or biologically Significant Marine Areas (EBSAs)

Relevant: 

Link: https://www.cbd.int/ebsa/

Description: EBSAs are selected according to the following CBD scientific criteria**:** (1) Uniqueness or Rarity, (2) Special importance for life history stages of species, (3) Importance for threatened, endangered or declining species and/or habitats, (4) Vulnerability, Fragility, Sensitivity, or Slow recovery, (5) Biological Productivity, (6) Biological Diversity, (7) Naturalness. EBSAs are identified by States and competent intergovernmental organizations.

Comment: Some areas are extremely large and may not be very useful (e.g. the EBSA in the north-western Mediterranean basin). But other areas, such as the Jabuka Pit in the Adriatic Sea, are more concrete and could be useful. Several areas are also, at least partially, outside EEZs.

Range: Mediterranean, Baltic Sea and Black Sea

2.12. OBIS Ocean Biodiversity Information System

Relevant: 

Link: https://mapper.obis.org/

Description: OBIS has open-access distribution data on relevant species, such as EU red listed species and OSPAR/ HELCOM threatened or declining species. The data can be visualised as density maps or as toggle points. However, there may be gaps in the datasets. For instance, remnant populations of *Ostrea edulis* in the West coast of Scotland are not shown after 2001.

Important note: The data also includes historical observations of populations that are locally extinct (e.g. for the angelshark *Squatina squatina*). It is important to filter the time line to recent years.

Range: All Europe

2.13. EMODnet Biology

Relevant: 

Link: https://www.emodnet-biology.eu/portal/index.php; portal user guide: https://www.emodnet-biology.eu/portal/doc/EMODNet_Biological_dataportal_manual-v1.pdf

Description: The EMODnet biology data portal provides free access to data on temporal and spatial distribution of marine species and species traits from all European regional seas. It is built upon the World Register of Marine Species (WORMS) and the European Ocean Biogeographic Information System (OBIS). EMODnet Biology aims to provide a single access point to European marine biodiversity data and products by assembling individual datasets from various sources and processing them into interoperable data products for assessing the environmental state of ecosystems and sea basins.

Important note: Some datasets include historical observations of populations that are now locally extinct (e.g. for the angelshark *Squatina squatina*). It is therefore important to filter the data to observations of recent years.

Range: All Europe

2.14. EMODnet Human Activities

Relevant: 

Link: https://www.emodnet-humanactivities.eu/view-data.php

Description: Users can view, query, and download datasets or subsets of them, via web GIS. Metadata are also available for download. The portal (currently) offers access to the following datasets:

- Aggregate Extraction
- Algae Production
- Aquaculture Cables
- Cultural Heritage
- Dredging
- Environment (e.g. Nationally designated sites, Natura 2000, State of Bathing Water)
- Fisheries
- Hydrocarbon Extraction
- Main Ports
- Nuclear Power Plants
- Ocean Energy Facilities
- Other Forms of Area Management/Designation
- Pipelines
- Shipping Density
- Waste
- Wind Farms

Comment: This data can be useful for understanding pressures and setting management objectives

Range: All Europe

2.15. GEBCO Undersea Features

Relevant: 

Link: https://www.ngdc.noaa.gov/gazetteer/

Description: Interactive map showing the location and name of all known undersea features, such as seamounts and ridges.

Comment: Most seamounts are highly biodiverse, but actual data 'proofing' the biodiversity value is probably missing in most cases. Nevertheless, this database could be useful to show which seamounts exists under the jurisdiction area of each Member State. This information could then be used to google

whether any scientific data exists on these features. For instance, biological data is available for the Gorringe Bank seamounts (off Spain): https://eu.oceana.org/sites/default/files/reports/seamounts_gorringe_bank_eng.pdf

Range: all Europe

2.16. IDEM (Implementation of the MSFD to the Deep Mediterranean Sea) WebGIS

Relevant: 

Link: http://gismarblack.bo.ismar.cnr.it:8080/mokaApp/apps/idem/index.html?null; project page: http://www.msfd-idem.eu/?q=content/about-project

Description: The map has the following layers related to the Marine Strategy Framework Directive (MSFD) implementation:

- D1 – Biodiversity is maintained (deep sea species occurrence, habitat types, geomorphological features and seabed substrate)
- D2 – Non-Indigenous species do not adversely alter the ecosystem (number of multicellular non-indigenous species)
- D3 – The population of commercial fish species is healthy (potential fishing pressure along the Mediterranean Sea coast)
- D5 – Eutrophication is minimised (aquaculture production: fish farms influence)
- D6 – The seafloor integrity ensures functioning of the ecosystem (impact of fisheries on the bottom, exploration/ extraction of oil and gas, utility and service lines, mining and extraction activity, and trawling area)
- D8 – Concentrations of contaminants give no effect (intensity of pollution by maritime transport, dumping zone and point source pollution)
- D10 – Marine litter cause no harm (marine litter, shipping line and marine litter by transport influence)
- D11 – Other (cumulative human impact)

Comment: Layer 1 (biodiversity information) may be particularly relevant

Range: Mediterranean (below 200 m depth)

2.17. IUCN Key Biodiversity Areas (KBA)

Relevant: 

Link: http://www.keybiodiversityareas.org/site/mapsearch

Description: Sites qualify as KBAs if they meet one or more of 11 criteria, clustered into five categories: (1) threatened biodiversity, (2) geographically restricted biodiversity, (3) ecological integrity, (4) biological processes, and (5) irreplaceability. Each criteria is associated with thresholds, which can be applied across all taxonomic groups. The KBA identification process is a highly inclusive, consultative and bottom-up exercise. The existing network of KBAs is composed of Important Bird and Biodiversity Areas (IBAs) and Allianz for Zero Extinction sites.

Comment: BirdLife and IUCN host the KBA secretariat jointly. In the EU, many KBA areas overlap exactly with the IBAs and were designated for the same reason (importance for birds). The fact that they have also been designated as KBA does therefore not provide additional biodiversity value to the site.

Range: all Europe

2.18. EU red list of marine habitats

Link: https://forum.eionet.europa.eu/european-red-list-habitats/library/marine-habitats

Relevant: 

Description: The distribution of each habitat type (as well as the Extent of Occurrence and the Area of Occupancy) were derived from a combination of survey data, Article 17 data, modelled data and expert knowledge. Habitat distribution (EUNIS level 4) is presented on a European regional seas map, superimposed with 10 km x 10 km grid squares. The raw territorial data and habitat distribution maps, are available for public download through the website of the European Environmental Agency (EEA).

Problem: EU red list habitats were classified according to EUNIS level 4. This is a relatively high level of typology for marine habitats and whilst appropriate for a European scale assessment, it obscures some very well-known endangered subhabitats (defined at EUNIS level 5). For instance, EUNIS habitat level 4 'Marine Atlantic infralittoral mixed sediments' was classified as data deficient in the assessment. However, enough data is available to classify the threatened level 5 sub-habitats of '*Limaria hians* beds in Atlantic tide-swept sublittoral muddy mixed sediments' as vulnerable, and '*Ostrea edulis* beds on Atlantic shallow sublittoral muddy mixed sediments' as critically endangered. Hence working with level 4 can mask important threatened habitats in need for protection.

Range: all Europe

2.19. EMODnet Seabed Habitats

Interactive map link: https://www.emodnet-seabedhabitats.eu/access-data/launch-map-viewer/?zoom=4&center=-3.508,52.305&layerIds=1&baseLayerId=-3

Description of relevant layers:

Relevance	Layer name	Comment
	EUSeaMap: EMODnet broad-scale seabed habitat maps for Europe	A broad-scale predictive map, mapped at EUNIS level 4 and at MSFD Benthic Broad Habitat Types. Probably too coarse to be relevant, as it does not reflect biological communities.
	Essential Ocean Variables in Europe (Live hard coral extent, Macroalgal canopy extent & Seagrass extent)	Still a draft. Visible on interactive map, but does not seem to be downloadable yet.
	Individual habitat maps from survey	Data ranges from broad-, medium- to fine-scale. It includes EUNIS habitat maps from survey, Annex I

	habitat maps from survey and other habitat maps from survey. All data seems to be connected to Natura 2000 sites.

Range: all Europe

COUNTRY	NAME	DESIGNATION	Directive	DESIG_TYPE	YEAR	AREA [km²]	Marine AREA [km²]	Marine AREA GIS	Type of PA [MPA/TPA]	Management Authorithy
Croatia	Grebeni u Jabučkoj kotlini	Proposed Natura 2000 site	pSCI	Regional	2015	10,78	10,78	10,78	Marine Site of conservation interest	Not Reported
Greece	KORINTHIAKOS KOLPOS	Proposed Natura 2000 site	pSCI	Regional	2011	2365,71	2365,71	2351,80	Marine Site of conservation interest	Not reported
Greece	THALASSIA PERIOCHI DYTIKIS KAI NOTIODYTIKIS KRITIS	Proposed Natura 2000 site	pSCI	Regional	2011	1636,86	1636,86	1635,31	Marine Site of conservation interest	Not reported
Greece	THALASSIA PERIOCHI DIAPONTION NISON	Proposed Natura 2000 site	pSCI	Regional	2011	153,27	153,27	150,94	Marine Site of conservation interest	Not reported
Greece	THALASSIA PERIOCHI NOTIAS MESSINIAS	Proposed Natura 2000 site	pSCI	Regional	2011	1229,30	1229,30	1222,03	Marine Site of conservation interest	Not reported
Greece	THALASSIA ZONI NOTIAS MANIS	Proposed Natura 2000 site	pSCI	Regional	2011	382,96	382,96	376,64	Marine Site of conservation interest	Not reported
Greece	THALASSIA ZONI APO ARGOSTOLI EOS ORMO MOUNTA	Proposed Natura 2000 site	pSCI	Regional	2011	94,04	94,04	93,10	Marine Site of conservation interest	Not reported

Italy	Area marina di Miramare	Proposed Natura 2000 site	pSCI	Regional	2011	0,25	0,25	0,21	Marine Site of conservation interest	Regione Autonoma Friuli Venezia Giulia – Direzione Centrale risorse rurali, agroalimentari e forestali – Servizio caccia, risorse ittiche e biodiversità
Italy	Bosco di Volano	Natura 2000	SPA/pSCI	Regional	1999	4,00	1,20	1,71	MPA	Not reported
Italy	Costa del Piceno - San Nicola a mare	Proposed Natura 2000 site	pSCI	Regional	2017	0,43	0,43	0,43	Marine Site of conservation interest	Provincia di Ascoli Piceno.
Italy	Fondali Foce del Fiume Irminio	Proposed Natura 2000 site	pSCI	Regional	1995	15,14	15,14	15,01	Marine Site of conservation interest	Not reported
Italy	Fondali dell'isola di Capo Passero	Proposed Natura 2000 site	pSCI	Regional	1995	53,67	53,67	53,48	Marine Site of conservation interest	Not reported
Italy	Fondali di Acicastello (Isola Lachea - Ciclopi)	Proposed Natura 2000 site	pSCI	Regional	1995	6,19	6,19	5,80	Marine Site of conservation interest	Not reported
Italy	Fondali di Brucoli - Agnone	Proposed Natura 2000 site	pSCI	Regional	1995	13,38	13,38	13,16	Marine Site of conservation interest	Not reported
Italy	Fondali di Capo San Marco - Sciacca	Proposed Natura 2000 site	pSCI	Regional	1995	183,30	183,30	182,23	Marine Site of conservation interest	Not reported

Italy	Fondali di Taormina - Isola Bella	Proposed Natura 2000 site	pSCI	Regional	1995	1,40	1,40	1,25	Marine Site of conservation interest	Not reported
Italy	Fondali di Torre Salsa	Proposed Natura 2000 site	pSCI	Regional	2019	127,30	127,30	127,10	Marine Site of conservation interest	Not reported
Italy	Fondali di Vendicari	Proposed Natura 2000 site	pSCI	Regional	1995	39,01	39,01	38,66	Marine Site of conservation interest	Not reported
Italy	Mare della Magna Grecia	Natura 2000	SPA/pSCI	Regional	2019	291,08	291,08	291,20	MPA/Marine Site of conservation interest	Not reported
Italy	Ortazzo, Ortazzino, Foce del Torrente Bevano	Natura 2000	SPA/pSCI	Regional	1988	12,55	1,76	2,83	MPA/Marine Site of conservation interest	Not reported
Italy	Pialassa dei Piomboni, Pineta di Punta Marina	Natura 2000	SPA/pSCI	Regional	2009	4,64	0,60	0,67	MPA/Marine Site of conservation interest	Not reported
Italy	Pineta di Casalborsetti, Pineta Staggioni, Duna di Porto Corsini	Natura 2000	SPA/pSCI	Regional	2009	5,78	1,39	1,53	MPA/Marine Site of conservation interest	Not reported
Italy	Relitti di Posidonia presso Grado	Proposed Natura 2000 site	pSCI	Regional	2013	0,01	0,01	0,01	Marine Site of conservation interest	Not reported
Italy	Sacca di Goro, Po di Goro, Valle Dindona, Foce del Po di Volano	Natura 2000	SPA/pSCI	Regional	1988	48,72	29,72	37,37	MPA/Marine Site of conservation interest	Not reported

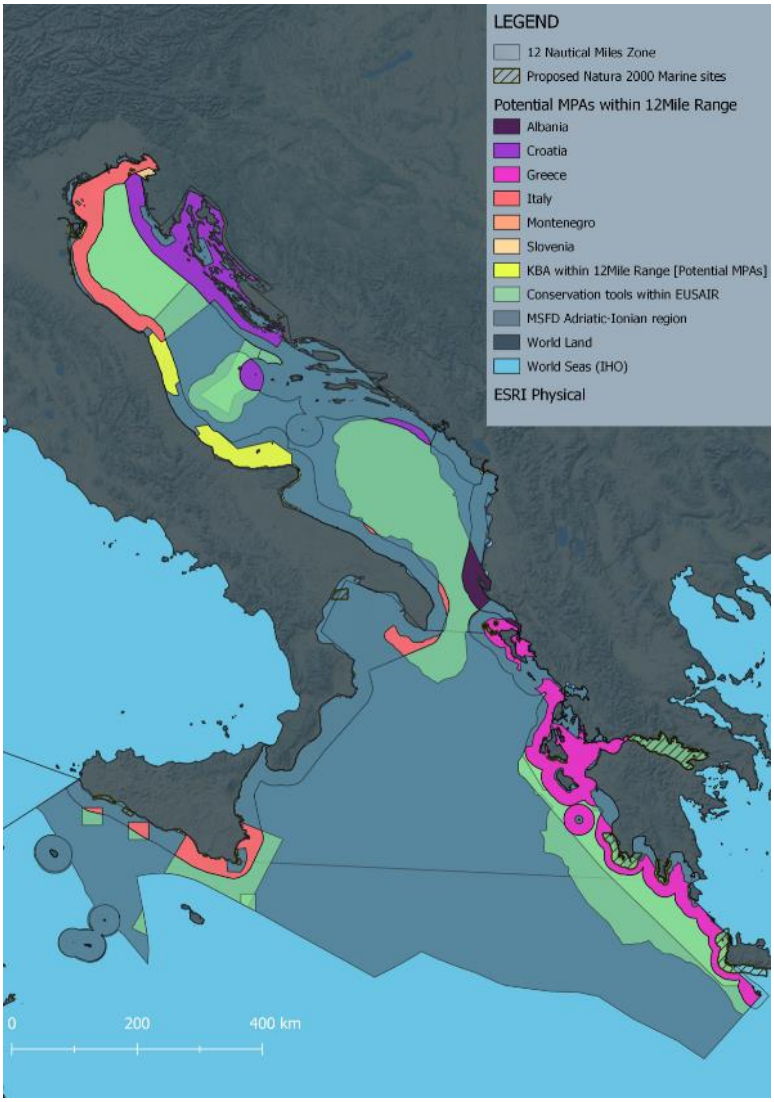
Italy	Trezze San Pietro e Bardelli	Proposed Natura 2000 site	pSCI	Regional	2013	23,80	23,80	23,81	Marine Site of conservation interest	REGIONE AUTONOMA FRIULI VENEZIA GIULIA — DIREZIONE CENTRALE RISORSE RURALI, AGROALIMENTARI E FORESTALI — SERVIZIO CACCIA, RISORSE ITTICHE E BIODIVERSITÀ
Italy	Vene di Bellocchio, Sacca di Bellocchio, Foce del Fiume Reno, Pineta di Bellocchio	Natura 2000	SPA/pSCI	Regional	1988	22,44	3,14	3,54	MPA/Marine Site of conservation interest	Not reported

Annex 3: Main biodiversity sites in the Adriatic and Ionian Seas that are not currently Marine Protected Areas or Natura 2000 sites

The following maps (produced in GIS format) take into account the following designations: KBA...Key Biodiversity Area; IBA...Important Bird Area; EBSA... Ecologically or Biologically Significant Marine Area; IMMA... Important Marine Mammal Area; EFH... Essential Fish Habitats and CCH... Cetaceans Critical Habitats.

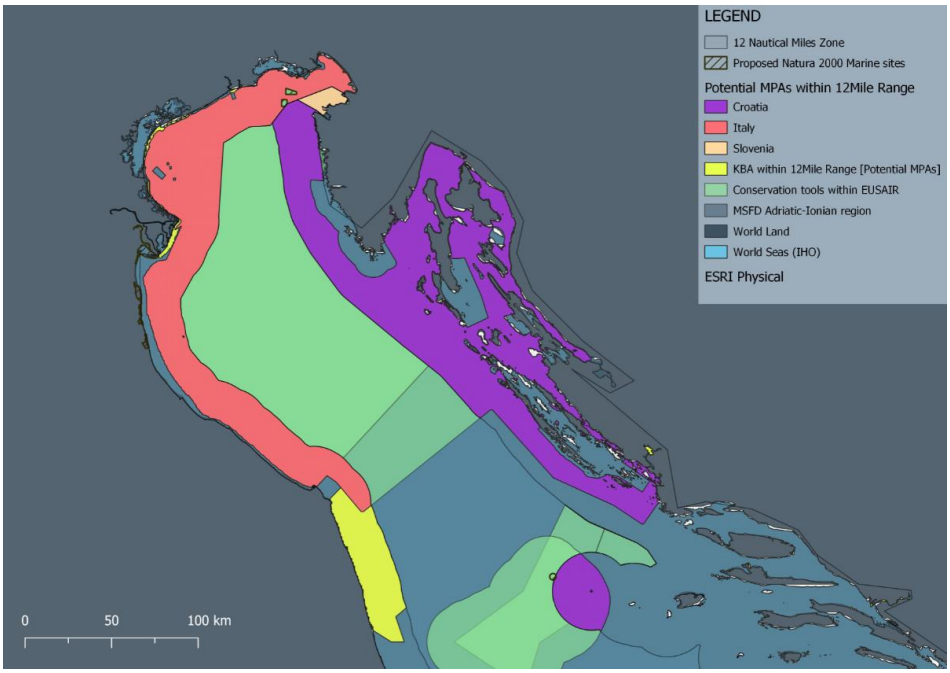
Proposed but not yet notified Marine 2000 sites have also been included in the database, but their areas have not been included in the calculation of potential new marine protected areas if they are planned within one of the above designations (to avoid duplication of sites in case of "double or multiple designations"). Map 1 shows the entire EUSAIR area and potential new marine protected areas within the 12-mile belt and beyond; the same map, but divided into three sub-maps (to allow for more detailed examination), is shown in Map 2. Where proposed potentially important biodiversity areas extend beyond the 12-mile belt, they are indicated with a different color.

Map 1: potential new marine protected areas within the 12-mile belt and beyond in the EUSAIR region.

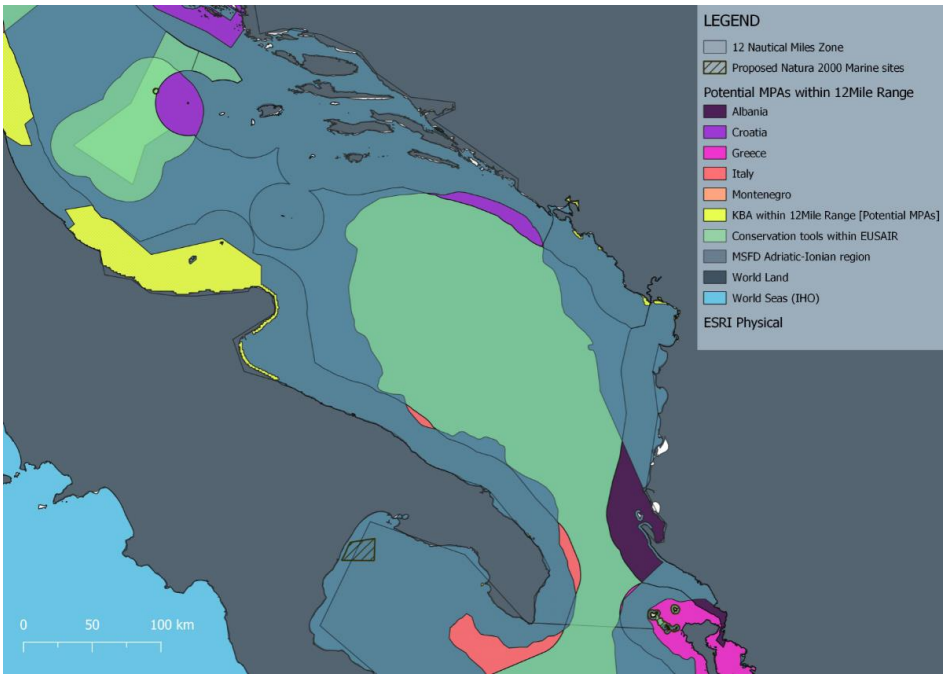


Map 2; potential new marine protected areas within the 12-mile belt and beyond

Map 2 a: North Adriatic Sea



Map 2 b: South Adriatic Sea



Map 2 c: Ionian sea

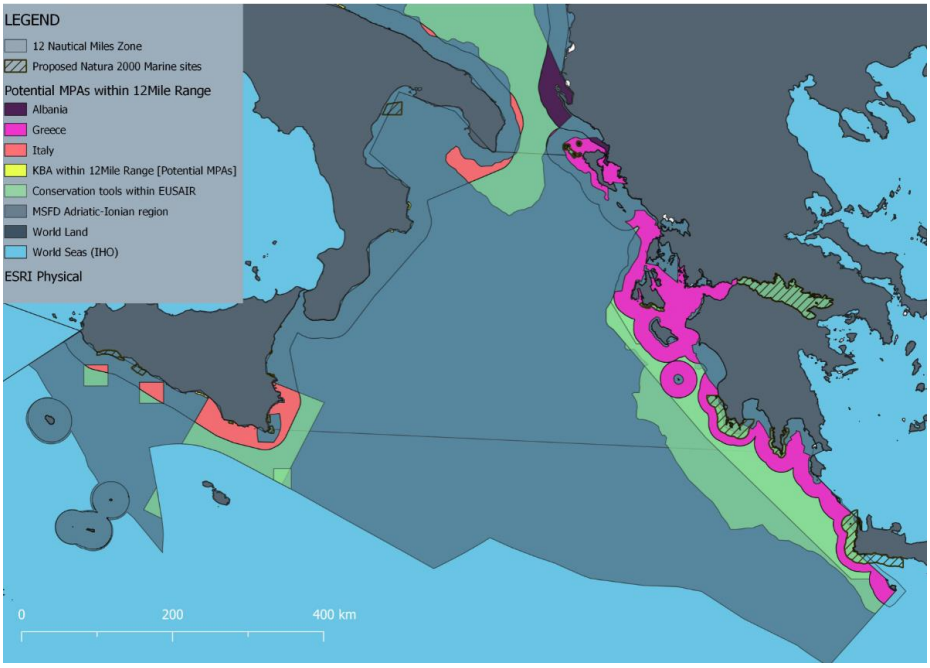


Table 1 shows the numerical values of the marine areas shown on Maps 1 and 2.

Table 1: Biodiversity most important marine areas in EUSAIR that are not currently protected areas (excluding potential Natura 2000 marine areas)

Country	Conservation tool	Potential MPA within 12mile range; EUSAIR marine region [km²]	Precentage of conservation tools (potential MPAs) regarding the marine area of each country in EUSAIR region	Precentage of conservation tools (potential MPAs) regarding the marine area within 12 nautical miles from coast in EUSAIR region	Marine area within 12 nautical mile range of each country [km²]
Albania	KBA & IBA	30,83	0,23%	0,5%	5914,05
	EBSA	2068,15	15,11%	35,0%	
	IMMA	203,47	1,49%	3,4%	
Croatia	KBA & IBA	52,79	0,09%	0,1%	39392,44
	IMMA	10646,66	18,04%	27,0%	
	EFH	9,25	0,02%	0,0%	
	EBSA	6451,13	10,93%	16,4%	
	CCH	606,59	1,03%	1,5%	
Greece	KBA & IBA	0,68	0,00%	0,0%	36571,85
	IMMA	6397,65	3,54%	17,5%	
	EBSA	11241,37	6,22%	30,7%	
	CCH	18308,60	10,14%	50,1%	
Italy	KBA & IBA	5986,87	2,69%	9,0%	66231,02
	IMMA	4977,37	2,24%	7,5%	
	EFH	732,65	0,33%	1,1%	
	EBSA	8985,11	4,04%	13,6%	
	CCH	3897,71	1,75%	5,9%	
Montenegro	KBA & IBA	56,51	0,73%	2,5%	2265,10
	EBSA	1,56	0,02%	0,1%	
Slovenia	KBA & IBA	0,56	0,26%	0,3%	214,37
	IMMA	199,88	90,86%	93,2%	
	EBSA	202,28	91,95%	94,4%	

Note: *Areas of different conservation tools can overlap, so just summing them would not give the accurate results.*

For example, the proposed but not yet established marine Natura 2000 sites in Greece are almost identical to the designated areas of significant values for biodiversity.

Table 2 presents proposed Natura 2000 areas in the EU EUSAIR countries (Slovenia has no proposed marine Natura 2000 sites). Shadowed in grey are those proposed Natura 2000 marine areas that overlap with other biodiversity important areas as presented already in the Table 1 above. Data on proposed marine 2000 Natura areas are taken from teh EEA database.

fid	N2000_ID	ORIG_NAME	Area_pN2K (KM2)
Greece	GR2530007	KORINTHIAKOS KOLPOS	2366,641646
Greece	GR4340024	THALASSIA PERIOCHI DYTIKIS KAI NOTIODYTIKIS KRITIS	1638,063525
Greece	GR2230010	THALASSIA PERIOCHI DIAPONTION NISON	152,8306821
Greece	GR2550010	THALASSIA PERIOCHI NOTIAS MESSINIAS	1228,971266
Greece	GR2540009	THALASSIA ZONI NOTIAS MANIS	383,0782064
Greece	GR2220007	THALASSIA ZONI APO ARGOSTOLI EOS ORMO MOUNTA	93,91040584
Croatia	HR3000477	Grebeni u Jabučkoj kotlini	10,78244259
Italy	IT3340007	Area marina di Miramare	0,246386228
Italy	IT5340022	Costa del Piceno - San Nicola a mare	0,432562276
Italy	ITA080010	Fondali Foce del Fiume Irminio	15,14773346
Italy	ITA090028	Fondali dell'isola di Capo Passero	53,71187959
Italy	ITA070028	Fondali di Acicastello (Isola Lachea - Ciclopi)	6,19528595
Italy	ITA090026	Fondali di Brucoli - Agnone	13,39219865
Italy	ITA040012	Fondali di Capo San Marco - Sciacca	183,293256
Italy	ITA030040	Fondali di Taormina - Isola Bella	1,403691835
Italy	ITA040016	Fondali di Torre Salsa	127,3257149
Italy	ITA090027	Fondali di Vendicari	39,04177731
Italy	ITA070006	Isole dei Ciclopi	0,025394726
Italy	IT9220300	Mare della Magna Grecia	291,2046173
Italy	IT4070009	Ortazzo, Ortazzino, Foce del Torrente Bevano	12,54305642
Italy	IT4070006	Pialassa dei Piomboni, Pineta di Punta Marina	4,638310094
Italy	IT4070005	Pineta di Casalborsetti, Pineta Staggioni, Duna di Porto Corsini	5,773655848
Italy	IT3330008	Relitti di Posidonia presso Grado	0,009092212
Italy	IT4060005	Sacca di Goro, Po di Goro, Valle Dindona, Foce del Po di Volano	48,67279418
Italy	IT3330009	Trezze San Pietro e Bardelli	23,80990991
Italy	IT4060003	Vene di Bellocchio, Sacca di Bellocchio, Foce del Fiume Reno, Pineta di Bellocchio	22,41922436
GIS provider: EEA			

grey shaded: overlapping with other areas of biodiversity importance
some areas that are listed as "designated" were not found in the EEA database.