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Fact sheets on marine habitats and species for the Marine Mediterranean and the Marine Black Sea regions

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Context:

The Topic Centre has prepared this Technical paper in collaboration with the European Environment Agency (EEA) under its 2018 work programme as a contribution to the EEA's work on Natura 2000 biogeographical seminars, making use of information from the EU Red List of habitats¹ and from information reported by Member States under Art. 17 of the Habitats Directive, Art. 12 of the Birds Directive and Natura 2000.

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¹ Gubbay, S. Sanders, N., Haynes, T., Janssen, J.A.M., Rodwell, J.R., Nieto, A., Garcia Criado, M., Beal, S., Borg, J., Kennedy, M., Micu, D., Otero, M., Suanders, G., and Calix, M. 2016. European red List of habitats, Part 1. Marine habitats. European Commission. Luxembourg. Publications of the European Union.

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1 Introduction

1.1 Background

The new Natura 2000 Seminars at the biogeographical level aim to exchange and analyse information on measures necessary to achieving favourable conservation status of species and habitats of Community interest, with special attention to the management and coherence of the Natura 2000 network. The seminars involve Member States, key user groups, NGOs and independent experts (Arvela et al., 2012).

The 'Pre-scoping document for the marine regions (Core document)' published as ETC/BD Technical paper n°2/2015, presented the general background as well as the approach used by ETC/BD to guide the selection of habitat-types and species for priority consideration by Member States and stakeholders for discussion on management issues during the 1st Natura 2000 marine seminar held in Saint Malo (France) in May 2015.

The present document complements the above-mentioned report and the 'Fact sheets on selected marine habitats and species' prepared in 2015 by providing for the Marine Mediterranean and Marine Black Sea marine regions the following information:

- Descriptive fact sheets on three EU Red List habitats, directly extracted from *Gubbay et al.* 2016²
- Updated fact sheets prepared by ETC/BD for three Annex I habitat types which are sub-types of the three EU Red List habitat types.
- Updated fact sheets prepared by the ETC/BD for one Annex II species
- Fact sheets prepared by the ETC/BD for two birds species.

1.2 Fact sheets prepared by ETC/BD

Each fact sheet prepared by ETC/BD presents the habitat/ species conservation status (trend for bird species) together with a distribution map for the Marine Mediterranean and Black Sea regions, information on pressures as well as on most important conservation measures implemented.

Quantitative information on Natura 200 sites hosting the concerned habitat/ species is also provided.

1.2.1 Conservation status

The assessment of conservation status is based on the reporting of the EU Member Countries based on requirements of the Habitats Directive Article 17 for period 2007-2012 (further "Article 17 Reporting"). For this assessment the following categories are used:

FV	Favourable	U1	unfavourable – inadequate
U2	unfavourable-bad	XX	unknown

^{2 2} Gubbay, S. Sanders, N., Haynes, T., Janssen, J.A.M, Rodwell, J.R, Nieto, A., Garcia Criado, M., Beal, S., Borg, J., Kennedy, M., Micu, D., Otero, M., Suanders, G., and Calix, M. 2016. European red List of habitats, Part 1. Marine habitats. European Commission. Luxembourg. Publications of the European Union.

As this information is not reported in Article 12 of the Birds Directive, birds species population trends at EU level have been provided.

1.2.2 Maps

Maps showing the distribution of habitat types and species in the Marine Mediterranean and Black Sea regions were prepared using the Article 17 and 12 national distribution GIS layers (reporting cycle 2007-2012, 2008 - 2012). In addition, these maps also show the conservation status for habitat types and non-bird species since the conservation status is not available for bird species.

A second map depicts the Sites of Community Importance or Special Protection Areas designated for each habitat type and species. As with the statistics, non-significant sites (those containing D population for species and D representativity for habitats) have been differentiated on maps.

1.2.3 Methodology on statistics for pressures and conservation measures

The list of pressures and conservation measures used for the assessment can be found on the Article 17 Reference Portal³. The list of pressures is structured in a hierarchical way, with 3 levels reflecting different degrees of precision, see Table 1.1.

Table 1.1 Pressure (and threats) categories used for Article 12 & 17 reporting, Level 1 in full and examples of Levels 2 and 3

Level 1		Level 2 (part)		Level 3 (part)	
Code	Name				
A	Agriculture				
B	Forestry				
C	Mining, quarrying & energy production				
D	Transportation & service infrastructure				
E	Urbanisation, residential & commercial development				
F	Use of living resources (other than agriculture & forestry)	F01	Marine and freshwater aquaculture		
G	Disturbances due to human activities	F02	Fishing and harvesting aquatic resources	F02.01	Professional passive fishing
H	Pollution	F03	Hunting and collection of terrestrial wild animals	F02.02	Professional active fishing
I	Invasive and introduced species	F04	Taking and collection of terrestrial plants	F02.03	Leisure fishing
J	Modification of natural conditions	F05	Illegal taking of marine fauna		
K	Natural processes (excluding catastrophes)	F06	Other hunting, fishing and collection activities		
L	Geological events, natural catastrophes				
M	Climate change				
X	No pressures or threats				
XO	Threats and pressures from outside the Member State				
XE	Threats and pressures from outside the EU territory				
U	Unknown threat or pressure				

³ http://bd.eionet.europa.eu/activities/Reporting/Article_17/reference_portal

For the Article 17 reports, Member States were requested to report pressures at the second hierarchical level, but were given the option of using more precise categories (i.e. third and fourth level). The following analyses of pressures are based on this requested hierarchical level.

In addition to the types of pressure and conservation measures (up to 20 maximum) for each habitat/species, Member States also ranked the relative importance of the pressure or conservation measure as falling under one of three categories: low, medium and high importance/impact. A maximum of five high ranked entries could be reported by Member States for each habitat/species in a given region.

The following habitats and species fact sheets only retain high-ranked pressures and conservation measures. As the ranking code was not obligatory to indicate unknown/no pressures and no measures, these categories have been excluded from the statistics.

For the bird species triggering SPA classification, Member States were asked to report the 20 most important pressures and threats using an agreed hierarchical list which can be found on the Article 12 Reference Portal (http://bd.eionet.europa.eu/activities/Reporting/Article_12/reference_portal).

The table below only contains information from Member States, where a species triggers SPA classification. Pressures and threats were ranked in three classes 'high, medium and low importance', the table below only shows pressures and threats classed as 'high', for some species there were less than ten pressures and threats reported as highly important.

This methodology is also applicable for conservation measures, Member States were asked to report up to 20 conservation measures being implemented for this species using an agreed list which can be found on the Article 12 Reference Portal. Member States were further requested to highlight up to five of the most important ('highly important') measures; the table below only shows measures classed as 'high' (for many species there were less than ten measures reported as highly important).

1.2.4 Habitats and non-bird species in SCIs and bird species in SPA

Statistical information is provided on occurrence of each habitat type and species in Natura 2000 sites for individual Member States for the Marine Mediterranean and Black Sea regions, i.e. number of sites and habitat area within the sites. Data are presented differentiating significant sites and non-significant sites (those containing D population for species and D representativity for habitats). For species tables, data on population size in Natura 2000 sites have been included as reported by Member States in the Article 17 and Article 12 reports (2007- 2012, 2008 – 2012 reporting cycle). Note that data on birds are not available at marine region level, only at MS's level.

These data have been extracted from the Natura 2000 European database end 2017 with the exception of population size which comes from Article 17 and 12.

2 Habitats fact sheets

Descriptive fact sheets for habitat A3.1x *Photophilic communities with canopy-forming algae in Mediterranean infralittoral and upper circalittoral rock*, A5.5w and A5.535 *Seagrass meadows in Pontic lower infralittoral sands and Posidonia meadows* are extracted from the European Red List of habitats

Descriptive fact sheets for habitat 1160 *Large shallow inlets and bays*, 1170 *Reefs* and 1110 *Sandbanks which are slightly covered by sea water all the time* have been prepared by ETC/BD, making use of information from Art. 17 reporting

2.1 A3.1x Photophilic communities with canopy-forming algae in Mediterranean infralittoral and upper circalittoral rock⁴

European Red List of Habitats - Marine: Mediterranean Sea Habitat Group

A3.1x Photophilic communities without canopy-forming algae in Mediterranean infralittoral and upper circalittoral rock

Summary

This habitat consists of rocky bottoms covered by erect macroalgae that do not form canopies. The structure includes bush-forming algae, turf forming algae, encrusting fauna and epiphytes. It is widely distributed in the Mediterranean in the shallow zone along the coastline. Predatory fishes and sea urchins can have a major role in determining the abundance of different algae and strongly modifying the ecosystem. Pressures and threats are related to warming, invasive species, pollution, sedimentation and grazing pressure and direct anthropogenic impacts like increasing coastal development. Although it may be impacted by anthropogenic impacts, the communities are adapted to rapidly changing conditions and could be fairly resilient to such impacts. However, more efforts are needed to know its complete distribution in the Mediterranean and its conservation status and potential recovery capacity. These are likely to include improving water quality, Marine Protected Areas (MPAs) and regulation of fisheries.

Synthesis

This is a widespread habitat in the Mediterranean Sea, however there is very little information available on its Area of Occupancy (AOO), impacts and trends in quantity and quality. Expert opinion is that the trends in quality are either stable or gradually decreasing but this cannot be quantified. Both quality and quantity decreases are expected to continue into the future.

The habitat has a large Extent of Occurrence (EOO) and AOO, and therefore it could potentially qualify as Least Concern under Criterion B but there is no information on any trends. However it has been assessed as Data Deficient for both the EU 28 and EU 28+ because of the lack of information on any trends in quantity and quality.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Data Deficient	-	Data Deficient	-

Sub-habitat types that may require further examination

None.

Habitat Type

Code and name

A3.1x Photophilic communities without canopy-forming algae in Mediterranean infralittoral and upper circalittoral rock

⁴ <https://forum.eionet.europa.eu/european-red-list-habitats/library/marine-habitats/mediterranean-sea>



Shallow water assemblage with *Halopteris scoparia*, Formentera, Spain | © E. Ballesteros I.



Assemblage dominated by *Lobophora variegata* at 10 meters depth, Cabrera, Spain | © E. Ballesteros I.

Habitat description

This habitat is present from the upper infralittoral zone to the upper circalittoral zone. Assemblages are always algal-dominated, although some invertebrates can be common in the understory and growing as epiphytes. It consists of rocky bottoms covered by erect macroalgae that do not form canopies. The structure includes bush-forming or turf forming algae, encrusting fauna and epiphytes. The coverage of the 'bush' and turf strata is usually higher than in an assemblage dominated by canopy algae. Assemblages are also highly miniaturized (less than 20 cm high) and very rich in species (up to 110 species in a 400 cm² area).

Species composition differs greatly depending on environmental conditions. Factors accounting for the variability on the assemblages include light availability, hydrodynamism, nutrient concentration in the seawater, substrate type, sedimentation, temperature, salinity, grazing intensity, predation, and frequency of disturbances. High densities of sea urchins (*Paracentrotus lividus*) can graze the algae, producing structurally less complex assemblages and even barren areas. Grazing by other fish species (*Sarpa salpa* or the exotic *Siganus rivulatus*, *S. luridus*) can modify the species composition. The habitat can be present both in good environmental conditions, and in rather degraded situations.

Several associated biotopes have been described, distinguished according to the dominant species. They include; *Padina pavonica* and similar species growing on well-lit shallow sheltered areas subjected to a moderate grazing by sea urchins; *Pterothamnion crispum* and *Compsothamnion thuyoides* growing on shallow, shaded sheltered to moderately exposed rocks; *Corallina elongata* growing on shallow exposed shores; *Halopteris scoparia* growing on well-lit sheltered areas down to 25 meters depth, mainly on northern areas, sometimes associated to the brown algae *Cladostephus spongiosus*; and *Codium bursa* on moderately lit infralittoral rock.

Indicators of quality:

This habitat is very variable according to the degree of anthropogenic disturbance. Indicators of quality can be measured by examining trends. The first signs of decline imply substitution of species, a decrease on diversity, an increase on invasive exotic species, and an increase in opportunistic, fast-growing species like some *Ulva* spp., *Cladophora* spp., *Acinetospora* spp., or stress resistant like *Corallina elongata* or *Lithophyllum incrustans*. Mussels can also replace the dominant algae in shallow waters when the charge of particulate organic matter is very high.

Characteristic species:

This community is characterized by the presence of many photophilic algae covering hard bottoms. The number of species is huge, and it can be completely different according to the bathymetric level, exposure and geographical region.

Rhodophyta (red algae)-*Liagora viscida*, *Liagora distenta*, *Amphiroa rigida*, *Corallina elongata*, *Haliptilon virgatum*, *Tricleocarpa fragilis*, *Ceramium virgatum*, *Wrangelia penicillata*, *Chylocladia verticillata*, *Chrysomenia ventricosa*, *Halymenia floresii*, *Gelidium spinosum*, *Predaea ollivieri*, *Chondracanthus acicularis*, *Jania rubens*, *Lithophyllum incrustans*, *Neogoniolithon brassica-florida*, *Mesophyllum alternans*, *Halopithys incurva*, *Lophocladia lallemandii*, *Peyssonnelia squamaria*, *Asparagopsis armata*, *Asparagopsis taxiformis*, *Sphaerococcus coronopifolius*, *Laurencia obtusa*, *Laurencia majuscula*, *Digenea simplex*, *Rytiplaea tinctoria*, *Alsidium corallinum*, *Pterothamnion crispum*, *Compsothamnion thuyoides*, *Plocamium cartilagineum*, *Schottera nicaeensis*, *Pterocladiaella capillacea*, *Botryocladia botryoides*, *Peyssonnelia squamaria*, *Palisada patentiramea*

Phaeophyta- *Dictyota fasciola*, *Colpomenia sinuosa*, *Taonia atomaria*, *Dictyota cf. dichotoma*, *Dictyota mediterranea*, *Stypopodium schimperi*, *Lobophora variegata*, *Dictyota spiralis*, *Zonaria tournefortii*, *Padina pavonicoides*, *Padina ditristomatica*, *Arthrocladia villosa*, *Sporochnus pedunculatus*, *Carpomitra costata*, *Acinetospora crinita*, *Hydroclathrus clathratus*, *Dictyota dichotoma v. intricata*, *Sphacelaria cirrosa*, *Halopteris scoparia*, *Halopteris filicina*, *Padina pavonica*, *Cladostephus spongiosus*, *Dictyopteris polypodioides*.

Chlorophyta (green algae)- *Ulva rigida*, *Umbraulva olivascens*, *Dasycladus vermicularis*, *Flabellia petiolata*, *Acetabularia acetabulum*, *Parvocaulis parvulus*, *Caulerpa prolifera*, *Caulerpa cylindracea*, *Codium bursa*, *Anadyomene stellata*, *Cladophoropsis membranacea*, *Cladophora prolifera*.

Porifera- *Crambe crambe*, *Phorbas topsentii*, *Sarcotragus fasciculatus*, *Sarcotragus spinosulus*, *Hemimycale columella*.

Mollusca- *Bittium reticulatum*, *Conus ventricosus*, *Columbella rustica*, *Rissoa guerini*.

Crustacea- *Macropodia longirostris*, *Maja crispata*.

Echinodermata- *Echinaster sepositus*, *Marthasterias glacialis*, *Paracentrotus lividus*, *Arbacia lixula*, *Holothuria tubulosa*, *Ophidiaster ophidianus*, *Ophiothrix fragilis*.

Fish- *Labrus merula*, *Coris julis*, *Serranus cabrilla*, *Serranus scriba*, *Symphodus ocellatus*, *Symphodus tinca*, *Scorpaena porcus*, *Epinephelus marginatus*, *Sciaena umbra*, *Diplodus sargus*, *Diplodus vulgaris*, *Diplodus cervinus*, *Diplodus puntazzo*, *Siganus rivulatus*, *Parablennius pilicornis*, *Trypterygion delaisi*, *Symphodus mediterraneus*, *Siganus luridus*, *Epinephelus costae*, *Sarpa salpa*, *Chromis chromis*, *Mullus surmuletus*, *Dentex dentex*, *Symphodus roissali*, *Sparisoma cretense*.

Classification

EUNIS (v1405):

Level 4. A sub-habitat of 'Mediterranean infralittoral rock' (A3.1).

Annex 1:

1160 large shallow inlets and bays

1170 Reefs

MAES:

Marine - Marine inlets and transitional waters

Marine – Coastal

MSFD:

Shallow sublittoral rock and biogenic reef

EUSeaMap:

Shallow photic rock or biogenic reef

IUCN:

9.7 Macroalgal/kelp

Barcelona Convention:

III. 6. 1. Biocenosis of infralittoral algae

Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?

Unknown

Justification

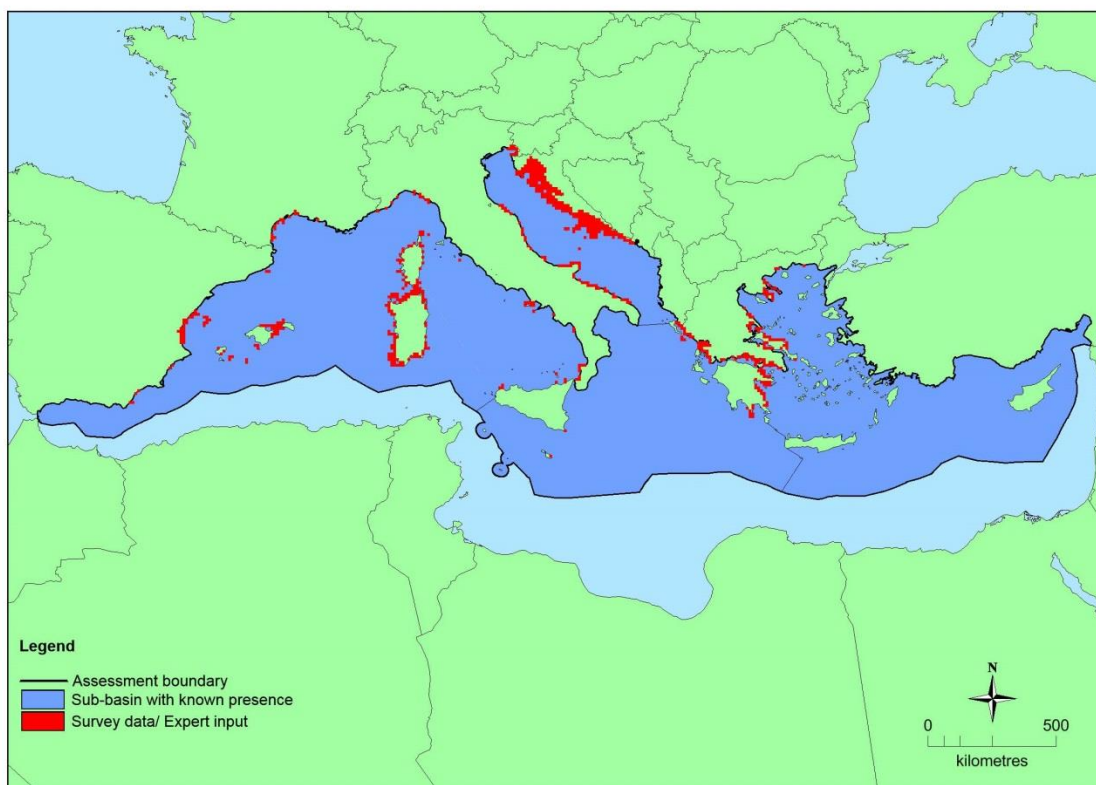
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Mediterranean Sea</i>	Adriatic Sea: Present Aegian-Levantine Sea: Present Ionian Sea and the Central Mediterranean Sea: Present Western Mediterranean Sea: Present	Unknown Km ²	Unknown	Unknown

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
<i>EU 28</i>	1,779,665 Km ²	704	1,219 Km ²	EOO and AOO have been calculated on the available data. Although this data set is known to be incomplete the figures exceed the thresholds for threatened status.
<i>EU 28+</i>	>1,779,665 Km ²	>704	>1,219 Km ²	EOO and AOO have been calculated on the available data. Although this data set is known to be incomplete the figures exceed the thresholds for threatened status.

Distribution map



This map has been generated using data based on EMODNet Database, IUCN and the European Environment Agency. EOO and AOO have been calculated on the available data presented in this map however these should be treated with caution as expert opinion is that this may not indicate the full distribution of the habitat.

How much of the current distribution of the habitat type lies within the EU 28?

Unknown, although this habitat is present in the EU 28+.

Trends in quantity

No information on extent or reduction have been reported for this habitat. However, it can be expected that some reduction have taken place in relation to anthropogenic disturbances mostly in association with coastal development.

- Average current trend in quantity (extent)

EU 28: Unknown

EU 28+: Unknown

- Does the habitat type have a small natural range following regression?

No

Justification

This habitat has a large natural range extending throughout the Mediterranean Sea.

- Does the habitat have a small natural range by reason of its intrinsically restricted area?

No

Justification

The extent of occurrence (EOO) exceeds 50,000 km² therefore this habitat does not show a small natural range although it is likely that some of the associated biotopes might have a more restricted natural range.

Trends in quality

There is little information on the quality status of this habitat. However, there could be a reduction in quality related to warming, pollution, sedimentation, invasive species and changes in grazing pressure. It has to be noted that this habitat is notably impacted by invasive algae, such as *Lophocladia lallemandii* and *Caulerpa cylindracea*, over many 'unknown' kilometers of coast line. Quality decreases are expected to continue in the future.

- Average current trend in quality

EU 28: Unknown

EU 28+: Unknown

Pressures and threats

Pollution, introduced species and climate change together with land use changes that produce changes in nutrients and sedimentation are the cause of loss of this habitat. Presently it is difficult to evaluate their magnitude in EU and non-EU countries because there is no rigorous historical baseline for the abundance of these habitats in the Mediterranean.

List of pressures and threats

Urbanisation, residential and commercial development

Urbanised areas, human habitation

Pollution

Pollution to surface waters (limnic, terrestrial, marine & brackish)

Marine water pollution

Invasive, other problematic species and genes

Invasive non-native species

Natural biotic and abiotic processes (without catastrophes)

Species composition change (succession)

Accumulation of organic material

Eutrophication (natural)

Climate change

Temperature changes (e.g. rise of temperature & extremes)

Conservation and management

Currently, there are no specific conservation actions in place for this habitat. Its broad distribution suggests that it occurs in protected areas, however detailed information is missing. A wide survey to assess the habitat is needed in order to better evaluate its conservation status. Thereafter, the definition of sites for monitoring the habitat quality and quantity will help to conduct an assessment and identify appropriate management measures. These are likely to include improving water quality, Marine Protected Areas (MPAs) and regulation of fisheries.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality

Measures related to spatial planning

Establish protected areas/sites

Measures related to hunting, taking and fishing and species management

Regulation/Management of fishery in marine and brackish systems

Measures related to special resource use

Regulating/Managing exploitation of natural resources on sea

Conservation status

Annex 1:

1160: MMED XX

1170: MMED XX

When severely damaged, does the habitat retain the capacity to recover its typical character and functionality?

Unknown. Examples of successful recovery of this habitat are rare for the Mediterranean and are linked to the presence of marine protected areas (MPAs). There is also large variation in the structure of these habitats. Therefore, the time lapse for recovery will be determined according to the different stressors, communities and conditions.

Effort required

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	Unknown %	Unknown %	Unknown %	Unknown %

There is no quantitative information on the reduction in quantity for this habitat. Expert knowledge from different Mediterranean countries suggests that this habitat is mostly stable although some level of reduction is most probably happening due to coastal development. The habitat is therefore assessed as Data Deficient under Criterion A.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50,000 Km ²	Unknown	Unknown	Unknown	>50	Unknown	Unknown	Unknown	Unknown
EU 28+	>50,000 Km ²	Unknown	Unknown	Unknown	>50	Unknown	Unknown	Unknown	Unknown

It is estimated that both the EOO and AOO largely exceed the thresholds for a threatened category and there is no information available on whether there is a continuing decline in the spatial extent or the biotic and abiotic quality, on whether a threatening process will likely cause continuing declines in the future. Therefore, the habitat type is assessed as Data Deficient Criterion B.

Criterion C and D: Reduction in abiotic and/or biotic quality

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	Unknown %	Unknown %	Unknown %	unknown %	Unknown %	Unknown %

Criterion C	C1		C2		C3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %	Unknown %

Criterion D	D1		D2		D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	Unknown %	Unknown%	Unknown %	unknown%	Unknown %	Unknown%
EU 28+	Unknown %	Unknown%	Unknown %	Unknown%	Unknown %	Unknown%

Based on the countries that have provided data, a slight reduction in abiotic quality has been reported for the habitat. The current trend regarding the biotic and abiotic quality of the habitat is stable to gradually decreasing. This is related to warming, pollution and sedimentation, while reduction in biotic quality is related to invasive species (invasive algae such as *Lophocladia lallemandii* and *Caulerpa cylindracea* have invaded this habitat in many sites) and changes in grazing pressure.

Both abiotic and biotic quality decreases are expected to continue in the future. Based on lack of information to calculate the reductions in abiotic and/or biotic quality, the habitat type is assessed as Data Deficient under Criterion C/D.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	Unknown
EU 28+	Unknown

There is no quantitative analysis available to estimate the probability of collapse of this habitat type, which is therefore assessed as Data Deficient under Criterion E.

Overall assessment "Balance sheet" for EU 28 and EU 28+

	A1	A2a	A2b	A3	B1	B2	B3	C/D1	C/D2	C/D3	C1	C2	C3	D1	D2	D3	E
EU28	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD	DD

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Data Deficient	-	Data Deficient	-

Ministerio de Agricultura, Alimentación y Medio Ambiente. 229 pp.

Verges, A., Tomas, F., Cebrian, E., Ballesteros, E., Kizilkaya, Z., Dendrinos, P., Karamanlidis, A., Spiegel, D. and Sala, E. 2014. Tropical rabbitfish and the deforestation of a warming temperate sea. *Journal of Ecology* 102: 1518-1527.

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Kersting, D.K., Ballesteros, E., De Caralt, S. and Linares, C. 2014. Invasive macrophytes in a marine reserve (Columbretes Islands, NW Mediterranean): spread dynamics and interactions with the endemic scleractinian coral *Cladocora caespitosa*. *Biological Invasions* 16:1599-1610

Ocaña, O., Ramos, A. and Templado, J. 2009. Paisajes Sumergidos de la Región de Ceuta y su Biodiversidad. 254 pp., Edita Fundación Museo del Mar de Ceuta.

2.1.1 1160 Large shallow inlets and bays

According to the Interpretation Manual of European Union Habitats - EUR28, the habitat “Large shallow inlets and bays” is defined as:

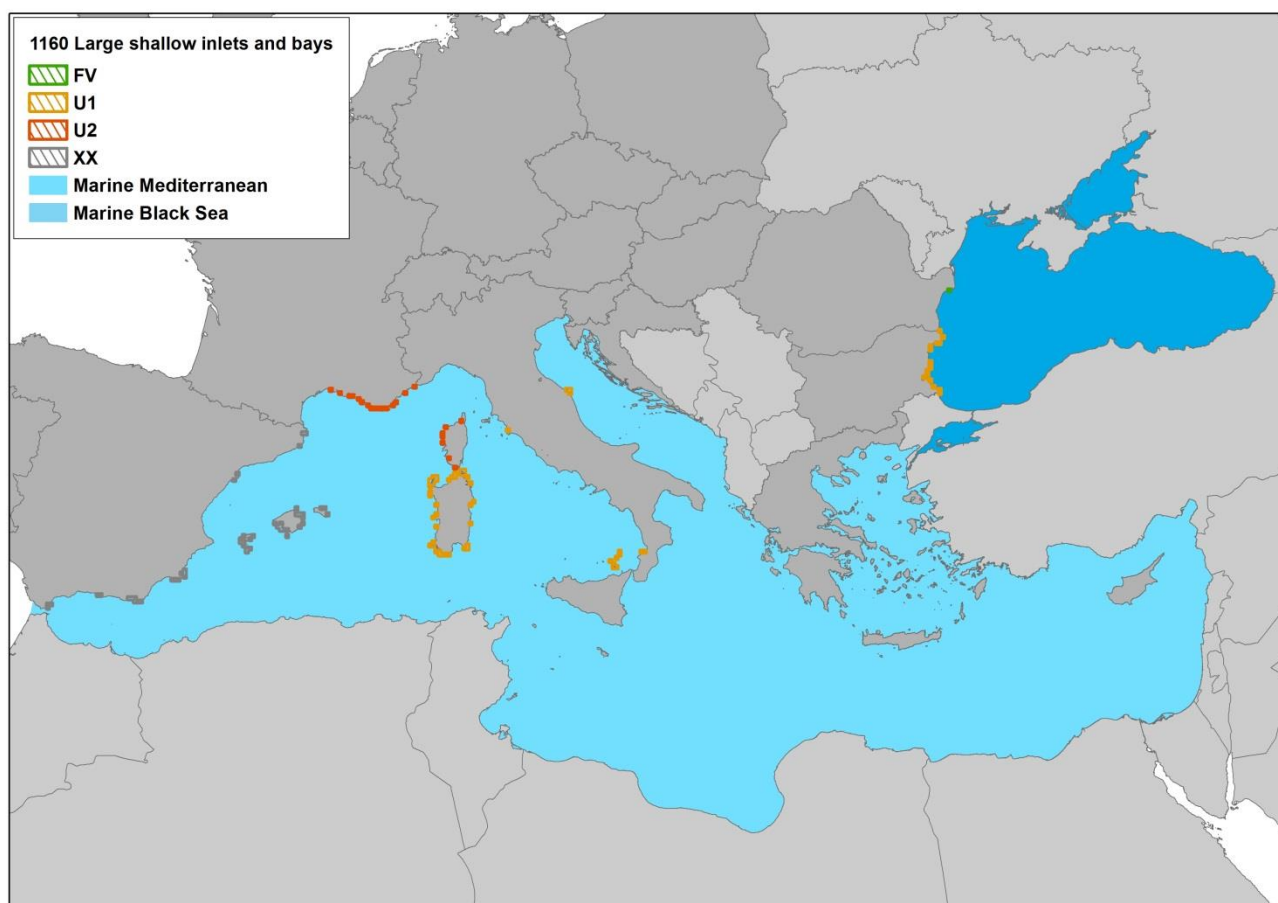
*Large indentations of the coast where, in contrast to estuaries, the influence of freshwater is generally limited. These shallow indentations are generally sheltered from wave action and contain a great diversity of sediments and substrates with a well-developed zonation of benthic communities. These communities have generally a high biodiversity. The limit of shallow water is sometimes defined by the distribution of the *Zosteretea* and *Potametea* associations. Several physiographic types may be included under this category providing the water is shallow over a major part of the area: embayments, fjards, rias and voes.*

The habitat is present in the Marine Atlantic, Marine Baltic-, Marine Black Sea, Marine Macaronesian and Marine Mediterranean region.

In the Marine Black Sea region the overall conclusion is unfavourable- inadequate (U1). In the Marine Mediterranean region the overall conclusion is unknown (XX). However, it is likely to be in unfavourable conditions due mainly to exploitation and pollution; especially since Greece, France, and Italy have overall conclusion unfavourable.

Pressures and threats towards the habitat in these two marine regions mainly involve impacts to water quality with both eutrophication and discharge, but also urbanization.

Map of habitat distribution and conservation status



Habitat conservation status at the Member State and EU levels

Conservation status parameters	MBLS			MMED				
	BG	RO	EU27	ES	FR	GR	IT	EU27
range	FV	FV	FV	XX	FV	XX	U1	XX
area	FV	FV	FV	XX	FV	XX	U1	XX
structure	U1	FV	U1	XX	U2	U1	XX	XX
future	U1	FV	U1	XX	U2	U1	XX	XX
overall	U1	FV	U1	XX	U2	U1	U1	XX

Proportion of pressures reported by MS as 'Highly important'

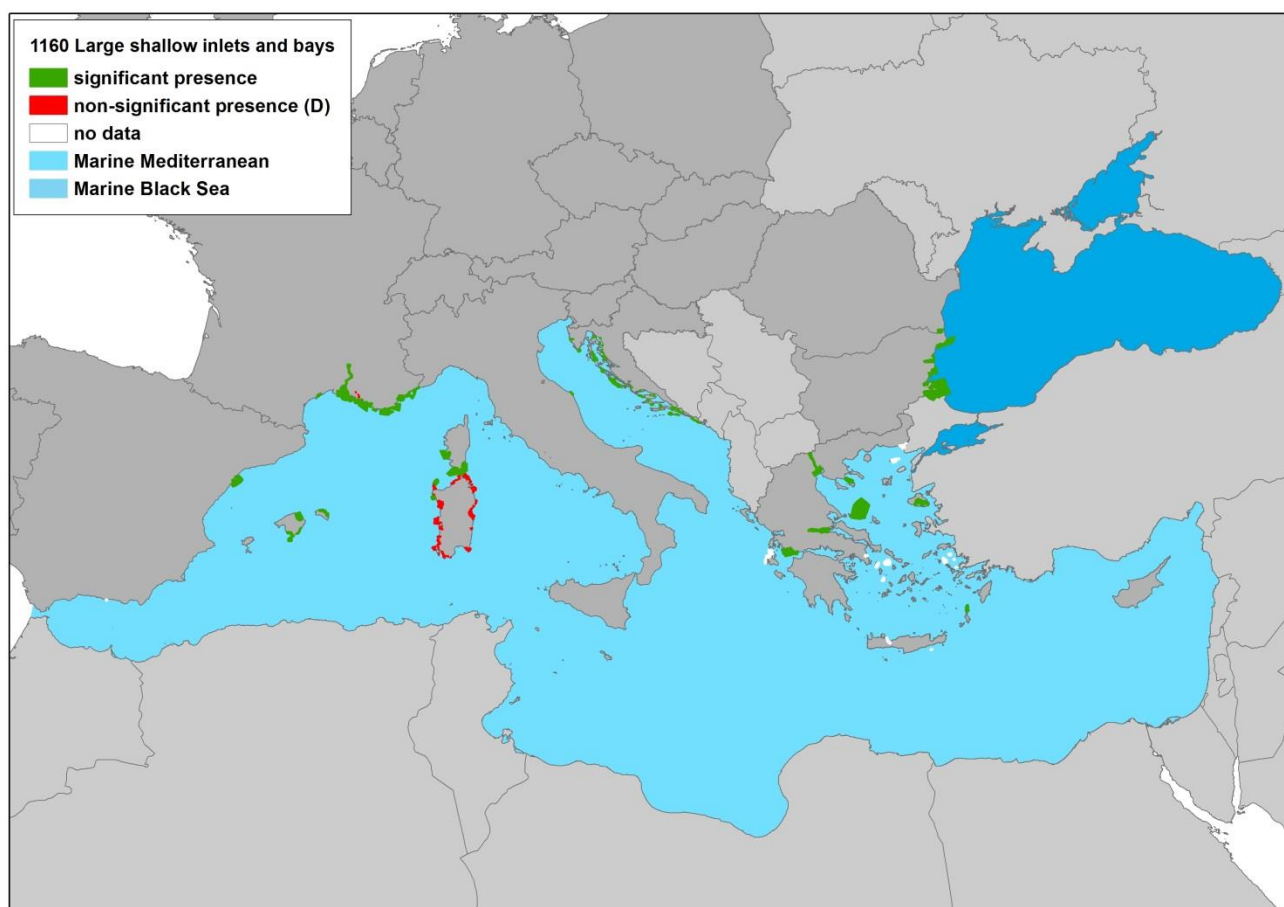
Pressures - Level 2	MBLS	MMED
A08 - Fertilisation in agriculture	0%	0%
D03 - Shipping lanes and ports	0%	22.2%
E01 - Urbanisation and human habitation	0%	22.2%
E03 - Discharges (household/industrial)	33.3%	0%
F01 - Marine and freshwater aquaculture	0%	0%
F02 - Fishing and harvesting aquatic resources	0%	0%
F05 - Illegal taking of marine fauna	0%	11.1%
F06 - Other hunting, fishing and collection activities	0%	0%

Pressures - Level 2	MBLS	MMED
G01 - Outdoor sports, leisure and recreational activities	0%	11.1%
G05 - Other human intrusions and disturbances	0%	0%
H01 - Pollution to surface waters	0%	11.1%
H03 - Pollution to marine waters	16.7%	11.1%
I01 - Invasive alien species	0%	0%
J02 - Changes in water bodies conditions	33.3%	11.1%
J03 - Other changes to ecosystems	0%	0%
K01 - Abiotic natural processes	16.7%	0%

Proportion of conservation measures reported by MS as 'Highly important'

Conservation measures - Level 2	MBLS	MMED
2.0 - Other agriculture-related measures	0%	0%
4.0 - Other wetland-related measures	0%	0%
4.1 - Restoring/improving water quality	20.0%	0%
4.2 - Restoring/improving the hydrological regime	20.0%	0%
4.3 - Managing water abstraction	20.0%	0%
5.0 - Other marine-related measures	0%	0%
6.0 - Other spatial measures	0%	0%
6.1 - Establish protected areas/sites	20.0%	100%
6.3 - Legal protection of habitats and species	0%	0%
7.3 - Regulation/ Management of fishery in marine and brackish systems	0%	0%
8.3 - Managing marine traffic	0%	0%
9.2 - Regulating/Managing exploitation of natural resources on sea	20.0%	0%

SCI distribution map for this habitat type



Number of SCIs where this habitat type occurs and habitat area covered by Natura 2000 per Member State (Natura 2000 End_2017 database)

MS	TOTAL SCI	SIGNIFICANT SCI	COVER (km ²)	SIGNIFICANT COVER (km ²)
BG	11	11	30,05	30,05
ES	10	10	7,39	7,39
FR	20	19	22,27	22,26
GR	18	18	3403,60	3403,60
HR	42	42	110,41	110,41
IT	35	4	36,89	21,80
RO	1	1	0,56	0,56

2.1.2 1170 Reefs

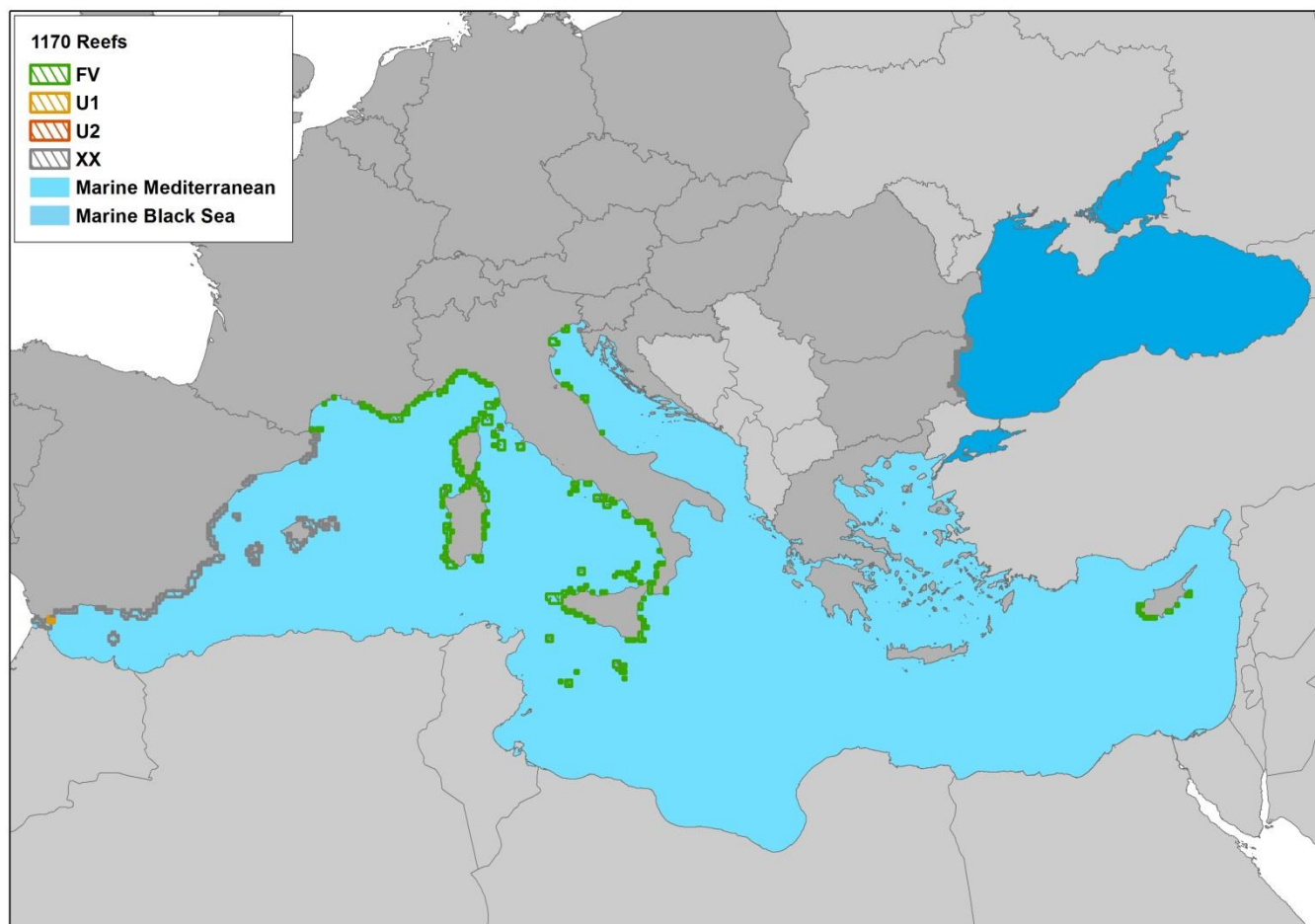
The Interpretation Manual of European Union Habitats - EUR28 includes an extensive definition for this habitat type due to the multiple subtypes. *‘Reefs can be either biogenic concretions or of geogenic origin. They are hard compact substrata on solid and soft bottoms, which arise from the sea floor in the sublittoral and littoral zones. Reefs may support a zonation of benthic communities of algae and animal species as well as concretions and corallogenic concretions’.*

Coastal reef habitat is present in both the Marine Mediterranean as well as the Marine Black Sea regions.

In the Marine Black Sea region, conservation status is considered as unfavourable-inadequate due to poor “structure and functions” of the habitat. However, there is a lack of information for all other parameters. In Marine Mediterranean the status is unknown since both “structure and functioning” and “future prospects” are unknown. In 2007 the status was unfavourable-inadequate, however this change is considered as not genuine as it is due to the availability of better data and a change in methods.

Pressures and threats towards the habitat in these two marine regions mainly are due to fishing activities.

Map of habitat distribution and conservation status



Habitat conservation status at the Member State and EU levels

Conservation status parameters	MMED									MBLS		
	CY	ES	FR	GR	IT	MT	SI	UK	EU27	BG	RO	EU27
range	FV	FV	FV	XX	FV	FV	FV	FV	FV	XX	FV	XX
area	FV	FV	FV	XX	FV	FV	FV	FV	FV	XX	FV	XX
structure	FV	XX	FV	U1	XX	XX	XX	FV	XX	U1	FV	U1
future	FV	XX	FV	U1	FV	FV	XX	U1	XX	XX	U1	XX
overall	FV	XX	FV	U1	FV	FV	XX	U1	XX	XX	U1	U1

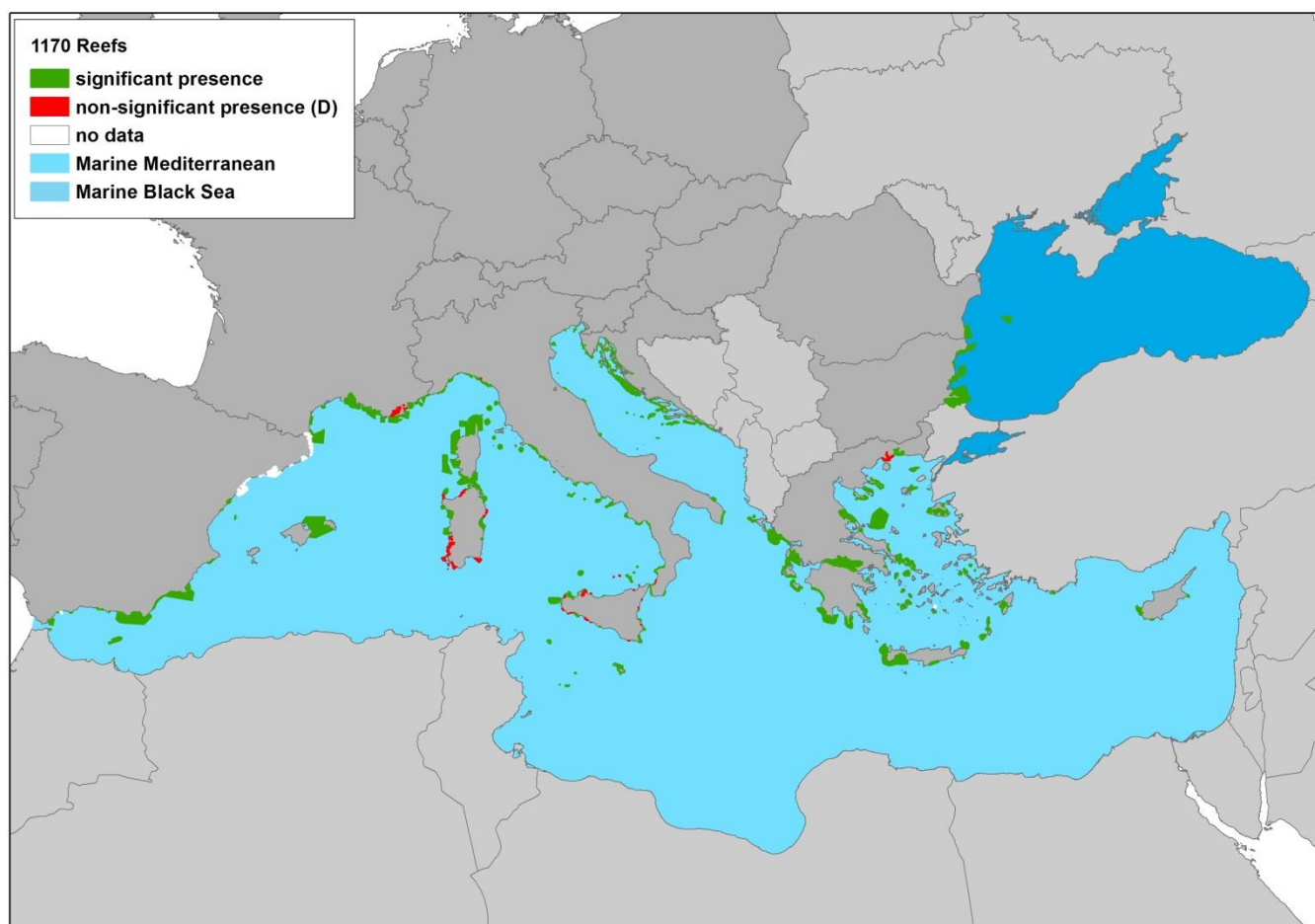
Proportion of pressures reported by MS as 'Highly important'

Pressures - Level 2	MBLS	MMED
C01 - Mining and quarrying	0%	0%
E01 - Urbanisation and human habitation	11.1%	0%
E03 - Discharges (household/industrial)	11.1%	14.3%
F02 - Fishing and harvesting aquatic resources	22.2%	28.6%
G01 - Outdoor sports, leisure and recreational activities	11.1%	14.3%
G05 - Other human intrusions and disturbances	11.1%	0%
H01 - Pollution to surface waters	11.1%	0%
H03 - Pollution to marine waters	0%	14.3%
H04 - Air pollution, air-borne pollutants	0%	0%
I01 - Invasive alien species	11.1%	0%
J02 - Changes in water bodies conditions	11.1%	14.3%
J03 - Other changes to ecosystems	0%	14.3%
K01 - Abiotic natural processes	0%	0%
M01 - Abiotic changes (climate change)	0%	0%

Proportion of conservation measures reported by MS as 'Highly important'

Conservation measures - Level 2	MBLS	MMED
4.0 - Other wetland-related measures	0%	0%
4.1 - Restoring/improving water quality	14.3%	11.8%
4.2 - Restoring/improving the hydrological regime	0%	0%
4.4 - Restoring coastal areas	0%	0%
5.0 - Other marine-related measures	0%	5.9%
5.1 - Restoring marine habitats	0%	0%
6.0 - Other spatial measures	0%	0%
6.1 - Establish protected areas/sites	14.3%	17.6%
6.2 - Establishing wilderness areas/ allowing succession	0%	0%
6.3 - Legal protection of habitats and species	14.3%	23.5%
7.1 - Regulation/ Management of hunting and taking	0%	5.9%
7.3 - Regulation/ Management of fishery in marine and brackish systems	14.3%	17.6%
7.4 - Specific single species or species group management measures	14.3%	0%
8.1 - Urban and industrial waste management	0%	5.9%
8.3 - Managing marine traffic	0%	5.9%
9.2 - Regulating/Managing exploitation of natural resources on sea	28.6%	5.9%

SCI distribution map for this habitat type



Number of SCIs where this habitat type occurs and habitat area covered by Natura 2000 per Member State (Natura 2000 End_2017 database)

MS	TOTAL SCI	SIGNIFICANT SCI	COVER (km²)	SIGNIFICANT COVER (km²)
BG	10	10	1653,59	1653,59
CY	5	5	18,29	18,29
ES	38	37	739,71	739,71
FR	29	28	290,98	290,98
GR	66	65	601,55	601,55
HR	123	123	151,57	151,57
IT	192	149	233,82	233,82
MT	7	7	4,33	4,33
RO	7	7	50,50	50,50
SI	2	2	0,15	0,15
UK	1	1	5,76	5,76

2.2 A5.5w and A5.535 Seagrass meadows in Pontic lower infralittoral sands and *Posidonia* meadows⁵.

European Red List of Habitats - Marine: Black Sea Habitat Group

A5.5w Seagrass meadows in Pontic lower infralittoral sands

Summary

The habitat is present throughout the Black Sea on areas of sandy and sandy-muddy bottoms in sheltered habitats with sufficient lighting. Six species of seagrass may be present in this habitat but *Zostera marina* is generally dominant. Historically the most significant pressure has been eutrophication. This has caused the greatest reductions in quantity and quality. This was most acutely experienced in the north-west Black Sea where there are high riverine inputs. Since the collapse of the Soviet Union transboundary pollution measures have been implemented and improved. This has led to a reduction in the pressure. Currently this habitat is present within marine reserves around Crimea. However prohibiting bait dredging is necessary to protect locations around Turkey. Measures to improve water quality are also needed to protect this habitat.

Synthesis

Due to this habitat's restricted distribution and continued decline this habitat has been assessed as Endangered in the EU 28. Due to the overall slight decline in quality, this habitat has been assessed as Vulnerable in the EU 28+. The threat is plausible based on losses caused in the recent past and plans to continue coastal development and protection works in both the EU 28 and the EU 28+.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Endangered	B1b, B2b	Vulnerable	C/D1

Sub-habitat types that may require further examination

None

Habitat Type

Code and name

A5.5w Seagrass meadows in Pontic lower infralittoral sands



Zostera noltei meadow with epiphytes in Mangalia, Romania (© Dragos Micu)



Zostera noltei meadow around Karadag, Russia (© Nataliya Milchakova)

1

⁵ <https://forum.eionet.europa.eu/european-red-list-habitats/library/marine-habitats/black-sea>
<https://forum.eionet.europa.eu/european-red-list-habitats/library/marine-habitats/mediterranean-sea>

Habitat description

Seagrass beds are found on sandy and sandy-muddy bottoms in sheltered habitats with sufficient lighting. Maximum development is in the summer. The habitat occurs all around the Black Sea as small and fragmented meadows. Its distribution is well documented in Russia, Ukraine, Romania and Bulgaria, while for Turkey it is mostly unknown. Off the coast of Georgia sparse eelgrass meadows are known to occur at Cape Souk-Sou (after *Cystoseira* communities at a depth of 6-10 m), in the Gulf of Skurge at a depth of 4-6 m. This habitat contains communities in both the upper and lower infralittoral sands with different dominant eelgrass species:

The habitat occurs in the deeper infralittoral zone, most typically where the sediment is silty sand and in the 10 m depth range. The meadows are found in sea water with salinity varying between 11 and 19 psu. Six species of seagrass may be present in this habitat but *Zostera marina* is generally dominant. There are also algae living on the eelgrass blades, mostly red algae. Species diversity develops two peaks, one in spring and the other in autumn. Seasonal dynamics of the biomass and density are less pronounced due to the depth. The communities of *Z. marina* display greatest diversity in the Kerch Strait with its special hydrological and hydrochemical conditions.

Indicators of quality:

Leaf length, biomass, shoot density have all been identified as indicators of quality. However, thresholds have not been set and these can and will vary between countries.

Characteristic species:

Zostera marina is the dominant seagrass species. It may form pure stands or be found in association with *Zostera noltei*, *Cystoseira barbata* and *Gracilaria gracilis*. 115 macroalgal species have been recorded in this habitat type in the Black Sea. Typical genera are: *Ceramium*, *Cladophora*, *Kylinia*, *Laurencia*, *Melobesia* and *Polysiphonia*, green and red algae prevail.

Classification

This habitat may be equivalent to, or broader than, or narrower than the habitats or ecosystems in the following typologies.

EUNIS (v1405):

Level 4. A sub-habitat of 'Pontic Sublittoral macrophyte-dominated sediment' (A5.5)

Annex 1:

1110 Sandbanks slightly covered all the time

1160 Large shallow inlets and bays

MAES:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Shallow sublittoral sand

EUSeaMap:

Shallow sands

IUCN:

9.4 Subtidal sandy

9.9 Seagrass (submerged)

Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?

Yes

Regions

Justification

Sublittoral *Zostera noltei* beds are not typical for the other regional seas (NEA: only intertidal, Western Baltic Sea: in areas falling dry wind induced, Mediterranean)

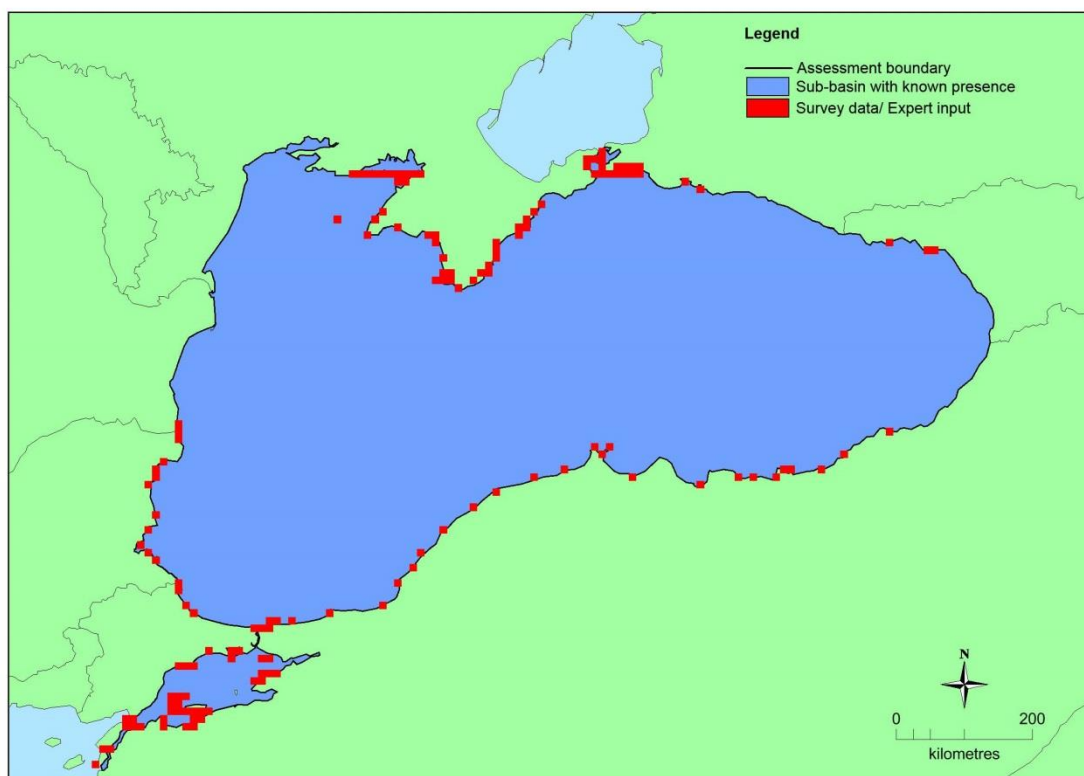
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Black Sea</i>	Black Sea: Present Sea of Marmara: Present	Unknown Km ²	Unknown	Unknown

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
<i>EU 28</i>	9,155 Km ²	13	13,00 Km ²	EOO and AOO have been calculated on the available data.
<i>EU 28+</i>	524,135 Km ²	146	14,600 Km ²	EOO and AOO have been calculated on the available data.

Distribution map



This map has been generated based on expert opinion. The map has been used to calculate AOO and EOO. The map should be treated with caution as it does not necessarily reflect the full distribution of the habitat.

How much of the current distribution of the habitat type lies within the EU 28?

Around 9% of this habitat is estimated to be hosted by EU 28 in the Black Sea.

Trends in quantity

In the historical period (pre-1960s) the habitat has generally decreased in quantity. This is due to wasting disease (caused by *Labyrinthula* sp.) effecting *Zostera marina*. This trend was recorded at a few locations in the Black Sea (e.g. Chernomorskaya Bay and Yarylgachskaya Bay). The trend has been extrapolated for the rest of the Black Sea based on the known impacts of the disease throughout Europe and America. Furthermore, at locations where the habitat has been studied in detail during the historic period it was noted to grow at shallower depths. At sites in the Russian Federation the depth of the habitat shifted from 11 to 6 m between 1938 and 1965.

During the period up to the 1990s widespread and severe eutrophication occurred in the Black Sea. This was most notable in the western Black Sea. This caused a significant reduction in extent. In the 1980s around Romania, Bulgaria and the Kerch Strait this habitat was near collapse. In Romania the reduction in extent is estimated at 95%. At Tendrovsky Bay in Ukraine losses of between 70 and 80% have been recorded. A similar trend is also seen along the Sevastopol coast in Crimea where between 40 and 80% of the habitat has been lost. There has been recovery since 2000 but not in deeper areas due to a continued lack of water clarity caused by eutrophication. The quantity of the habitat is now increasing but is yet to reach previous levels. This recovery has not been experienced around Crimea, largely due to the continued development in the area. Coastal development (i.e. hydrotechnical works) have further contributed to these losses in Romania. This has led to a total loss of large areas of meadows in the Razim-Sinoe lagoons. Major losses of shallow meadows have also occurred along the coast due to coastal

quality as it is more susceptible to fungal diseases. *Z. noltei* has seen the opposite occur, with less vegetative growth, but more reproductive growth. Due to *Z. noltei*'s smaller leaf size compared to *Z. marina* the overall biomass in the Black Sea is decreasing. Species, which prefer habitats with *Z. marina* compared to *Z. noltei* have been observed as declining. Whilst the overall biomass has decreased as a whole in the Black Sea, biomass has increased in the Kerch Strait and Kartiniitski Bay.

- Average current trend in quality

EU 28: Stable

EU 28+: Decreasing

Pressures and threats

Eutrophication as a result of nutrient enrichment (N, P and organic matter) is the most significant historic pressure on the habitat. Reduced light penetration due to eutrophication caused declines in extent and quality of the habitat. Since the 1990s this pressure has reduced due to tighter controls on pollution in the catchment of the Danube and other rivers which enter the north-west Black Sea. Whilst this pressure is now reduced it is still a continuing threat in the current and future periods. This is especially true for non-EU countries surrounding the Black Sea which are not bound by the agreements such as the Water Framework Directive (WFD).

Coastal development is a threat of current and future importance. This can lead to habitat destruction and siltation. Seagrasses are not tolerant to smothering by mud or other sediments. This is a threat in all parts of the Black Sea. In Romania, Bulgaria, Crimea and the Caucasus intensive hotel development and the creation of artificial beaches are a threat to the underlying substrate. In Turkey proposed road developments also threaten the substrate.

Seagrass rhizomes are sensitive. The leaves can easily be damaged by motor boats and boat moorings. Meadows in shallow waters are also at risk of disturbance due to bait digging and trampling.

List of pressures and threats

Urbanisation, residential and commercial development

Other urbanisation, industrial and similar activities

Human intrusions and disturbances

Other human intrusions and disturbances

Trampling, overuse

Pollution

Nutrient enrichment (N, P, organic matter)

Conservation and management

The habitat is a characteristic feature of several habitat types listed in Annex 1 of the Habitats Directive like 1130 Estuaries or 1160 Large shallow inlets and bays. Areas of this habitat in Romania and Bulgaria all occur in Natura 2000 protected areas. Around the Crimean region all seagrass meadows are included in a local Red List. Many meadows are present in marine reserves. Turkey has limited bait dredging to >30 m. Collection of *Z. noltei* is banned. Additional actions needed: Prohibit bait dredging over the entire Black Sea; Improve enforcement of MPAs; explore habitat restoration (i.e. translocation of sea grasses. This has yet to be tested in the Black Sea), improve water quality.

List of conservation and management needs

Measures related to marine habitats

Other marine-related measures

Measures related to spatial planning

Establish protected areas/sites

Legal protection of habitats and species

Measures related to urban areas, industry, energy and transport

Other measures

Conservation status

Annex 1:

1110: MBL5 U1

1160: MBL5 U1

When severely damaged, does the habitat retain the capacity to recover its typical character and functionality?

If only quality degradation occurs then it is possible to recover naturally within 50 years if pollution pressures are removed. In case of strong habitat fragmentation or loss of whole meadows recovery may take much longer or even never occur.

Effort required

50+ years
Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	unknown %	unknown %	unknown %	unknown %
EU 28+	unknown %	unknown %	unknown %	unknown %

There is insufficient data on changes in quantity of this habitat to undertake an assessment using criterion A.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	9,155 Km ²	No	Yes	No	13	No	Yes	No	No
EU 28+	>50,000 Km ²	No	Unknown	No	146	No	Unknown	No	No

The AOO and EOO are intrinsically small for the EU states. Declines in spatial extent, abiotic and biotic quality have halted. A decline in extent is likely to be caused in the next 20 years due to coastal development. This is based on expert opinion. This habitat is therefore assessed as being Endangered

using criteria B1b and B2b in the EU 28.

Criterion C and D: Reduction in abiotic and/or biotic quality

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	>80 %	slight %	unknown %	unknown %	unknown %	unknown %
EU 28+	>80 %	slight %	unknown %	unknown %	unknown %	unknown %

Criterion C	C1		C2		C3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %
EU 28+	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %

Criterion D	D1		D2		D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %
EU 28+	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %

In the EU states there has been a slight decline affecting >80% extent. This has occurred within the last 50 years. This has affected both biotic and abiotic factors. It is not possible to decouple these. This is mostly based on expert opinion. Quantitative data is only available for sites in Romania, Bulgaria, Ukraine, Crimea and Russia. The results have been extrapolated and combined with expert opinion.

In the EU 28+ there has been a slight decline affecting >80%. This has affected both biotic and abiotic factors. It is not possible to decouple these. This is mostly based on expert opinion. Quantitative data is only available for sites in Ukraine, Crimea and Russia. The results have been extrapolated.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	unknown
EU 28+	unknown

There is no quantitative analysis available to estimate the probability of collapse of this habitat type.

Overall assessment "Balance sheet" for EU 28 and EU 28+

	A1	A2a	A2b	A3	B1	B2	B3	C/D1	C/D2	C/D3	C1	C2	C3	D1	D2	D3	E
EU28	DD	DD	DD	DD	EN	EN	DD	VU	DD	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	DD	DD	DD	DD	DD	DD	DD	VU	DD	DD	DD	DD	DD	DD	DD	DD	DD

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Endangered	B1b, B2b	Vulnerable	C/D1

Confidence in the assessment

Low (mainly based on uncertain or indirect information, inferred and suspected data values, and/or limited expert knowledge)

Assessors

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Date of review

15/03/2016

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A5.535: *Posidonia* beds in the Mediterranean infralittoral zone

Summary

This habitat is created by the ecosystem engineer species, the seagrass *Posidonia oceanica*. The growth of the rhizomes allows the building of a specific structure called “matte” due to the accumulation of sediment between rhizomes and roots. “Posidonia meadows” or “Posidonia beds”, occur between the sea-surface and 35 to 40 m depth. When the waters are particularly clear, these meadows can go deeper than 45 m deep (e.g. Corsica, Malta). *Posidonia* beds can be present on various substrates (e.g. silt, fine sand, average and coarse, rocks), even if they prefer soft bottoms, rich in organic matter. This endemic species is the most widespread seagrass species throughout the Mediterranean, however, its biological characteristics with rare sexual reproduction and slow horizontal growth of rhizome edges, prevents rapid recolonization of degraded or new forming beds.

Pressures to this habitat include the impacts of trawling, boat anchoring and coastal development including shoreline artificialisation, urban and harbour infrastructure, and sand mining affect also the upper limit distribution of *Posidonia* meadows. Eutrophication and pollution, especially in coastal regions that are heavily populated, are a problem in many coastal areas. Invasive macroalgae such as *Caulerpa taxifolia* and *Lophocladia lamellandii* can threaten the survival and affect the density and complexity of the assemblages in the meadow. Climate change would be an additional threat through the warming of waters, sea level rise and extreme weather events. *Posidonia oceanica* is protected by EU legislation (Habitat Directive), the Bern and Barcelona Conventions and some national legislations. The habitat formed by this seagrass is also in various marine protected areas in the countries along the Mediterranean Sea. Monitoring and implementation of fishing regulations, increased awareness and mapping projects (particularly in areas less well studied) will further help to protect this habitat.

Synthesis

Posidonia oceanica seagrass beds are an endemic habitat to the Mediterranean and represent the most widespread seagrass meadow in the region. A decline in surface area of 34% has been observed over the last 50 years due to mechanical damage from trawling, coastal development, pollution, boat anchoring, discharge of effluents and general decrease of water quality and sedimentation. The known decline trend at country level is on average 12% over the last 2-15 years but information is lacking regarding the trend in different Mediterranean countries.

There is limited information about a reduction in the habitat quality but the few reports at country level indicate a slight decline due to the mechanical alteration of the habitat (e.g. by fishing trawlers) and a decrease of the water quality (e.g. shoreline modification). Based on this information, this habitat has been assessed as Vulnerable under criteria A1 for both the EU 28 and EU 28+.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Vulnerable	A1	Vulnerable	A1

Sub-habitat types that may require further examination

None.

Habitat Type

Code and name

A5.535: *Posidonia* beds in the Mediterranean infralittoral zone



Posidonia meadows along the Corsican coasts - France [© C. Pergent].



Ecomorphosis of "barrier-reef" *Posidonia oceanica* meadows along the Libyan coasts [© C. Pergent].

Habitat description

This habitat is created by the ecosystem engineer species, the seagrass *Posidonia oceanica*. The plant of this seagrass consists of erected and plagiotropic rhizomes with at the top a 4 -8 leaves bundle, which has 8-11 mm wide and 20 to 80 cm long. The growth of the rhizomes allows the building of a specific structure called "matte" due to the accumulation of sediment between rhizomes and roots. This is a real engineering species, which constitutes characteristic formations called "*Posidonia* meadows" or "*Posidonia* beds", between the sea- surface and 35 to 40 m depth. When the waters are particularly clear, these meadows can go deeper than 45 m deep (e.g. Corsica, Malta). They disappear when the salinity is below 33 ‰ (optimum 35 to 39 ‰). However, they support relatively large temperature variations from 9 to 29 ° C (17 optimum at 20 ° C). *Posidonia* beds can be present on various substrates (e.g. silt, fine sand, average and coarse, rocks), even if they prefer soft bottoms, rich in organic matter. This endemic species is the most widespread seagrass species throughout the Mediterranean. It is common on different types of substrate and habitats, from sandy bottoms to rocks. However, its biological characteristics with rare sexual reproduction and slow horizontal growth of rhizome edges, don't allow a rapid recolonization of degraded or new forming beds.

Several sub-habitats have been described:

- Ecomorphosis of striped *Posidonia oceanica* meadows (A5.5351),
- Ecomorphosis of "barrier-reef" *Posidonia oceanica* meadows (A5.5352);
- Facies of dead "mattes" of *Posidonia oceanica* without much epiflora (A5.5353) and
- Association with *Caulerpa prolifera* on *Posidonia* beds (A5.5354).

Indicators of quality:

Posidonia oceanica is considered as good biological indicator of the quality of the marine environment and is considered as a biological quality element in the implementation of the European Framework Water Directive. Several descriptors are available to evaluate the quality of the *Posidonia* meadows habitat and

many indicators of quality, based on combination of these descriptors have been established, particularly to monitor the habitat in the framework of European directives (e.g. Habitat, Fauna and Flora Directive, Water Framework Directive and recently Marine Strategy Framework Directive) or for conservation purposes (national or sub-national initiatives).

Characteristic species:

It is possible to divide the main characteristic species of the *Posidonia* meadows in three compartments and/or in different trophic levels:

- The species living within the thickness of the *matte* (endofauna). This assemblage is rich in polychetes (*Mediomastus capensis*, *Neanthes nubila*, *Lumbrineriopsis paradoxa*, *Pontogenia chrysocoma*), molluscs (*Modiolula phaseolina*, *Hiatella arctica*, *Limaria hians*, *Gourretia denticulata*) and crustacean (*Upogebia deltaura*, *Limnoria mazzellae*).
- The species living under the foliar shoots (sciaphilous strata) as algae (*Halimeda tuna*, *Flabellia petiolata*, *Peyssonnelia squamaria*, *Rhodymenia* sp.), the foraminifer (*Miniacina miniacea*), echinoderms (*Paracentrotus lividus*, *Sphaerechinus granularis*, *Holothuria tubulosa*, *Echinaster (Echinaster) sepositus*, *Marthasterias glacialis*, *Ophiura ophiura* and *Ophioderma longicauda*); crustaceans (*Nototropis guttatus*, *Melita palmata*, *Gammarella fucicola*, *Cleantis prismatica* and *Sirpus zariquieyi*), bivalves (*Pinna nobilis*), ascidians (*Halocynthia papillosa*, *Microcosmus vulgaris*).
- The species living on the leaves (phyllosphere) and the vagile species present in the canopy, as encrusting algae (*Pneophyllum fragile*; *Electra posidoniae*, *Hydrolithon* sp.), hydrozoans (*Plumularia posidoniae*, *Sertularia perpusilla*), bryozoan, crustacean (*Idotea balthica*), cephalopods (*Octopus vulgaris*, *Sepia officinalis*), gastropods (*Synischia hectica*, *Achaeus cranchii*, *Pisa nodipes*, *Bittium reticulatum*, *Calliostoma laugierii*, *Cerithium vulgatum*, *Columbella rustica*, *Gibbula umbilicaris*, *Tricolia speciosa*, *Alvania lineata*, *Rissoa* sp. and *Jujubinus* sp.) and fishes (*Sarpa salpa*, *Hippocampus hippocampus*, *Symphodus* sp., *Coris julis*, *Chromis chromis*, *Diplodus vulgaris*, *Scorpaena porcus*).

Classification

EUNIS (v1405):

Level 4: A subhabitat of 'Sublittoral macrophyte dominated sediment' (A5.5).

Annex 1:

1120 *Posidonia* beds

MAES-2:

Marine - Marine inlets and transitional waters

Marine - Coastal

MSFD:

Shallow sublittoral sediment (coarse, sand, mud, mixed)- *Posidonia oceanica* meadows (Italy)

EUSEaMap:

Seagrass meadows

IUCN:

9.9 - Seagrass submerged

Barcelona convention (RAC/SPA):

III. 5. 1. *Posidonia oceanica* meadows (= Association with *Posidonia oceanica*)

III. 5. 1. 1. Ecomorphosis of striped meadows

III. 5. 1. 2. Ecomorphosis of "barrier-reef" meadows

III. 5. 1. 3. Facies of dead "mattes" of *Posidonia oceanica* without much epiflora

III. 5. 1. 4. Association with *Caulerpa prolifera*

Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?

Yes

Regions

Mediterranean

Justification

Posidonia oceanica is an endemic species that form unique habitats along the Mediterranean coast.

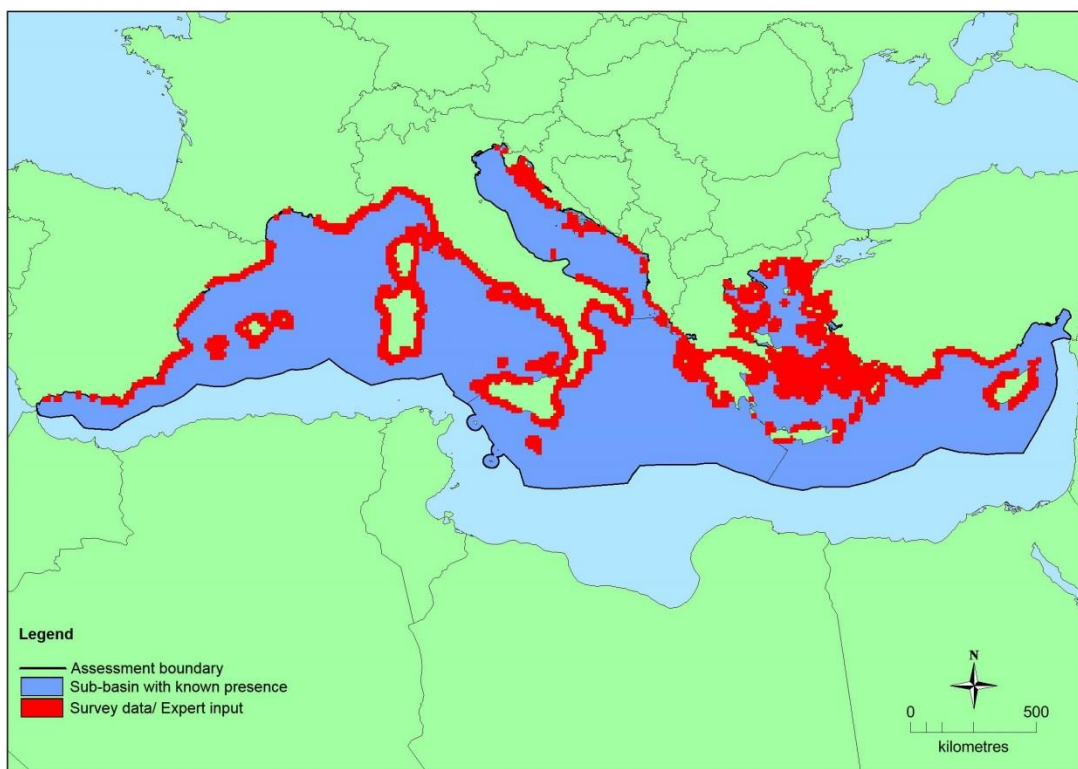
Geographic occurrence and trends

Region	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
<i>Mediterranean Sea</i>	Adriatic Sea: Present Aegian-Levantine Sea: Present Ionian Sea and the Central Mediterranean Sea: Present Western Mediterranean Sea: Present	12247 Km ²	Decreasing	Decreasing

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	2,431,126 Km ²	4,033	6,955 Km ²	Source of current estimated total area: Telesca et al., 2015. EOO and AOO source: IUCN Red list (2015).
EU 28+	2,451,463 Km ²	4,414	12,247 Km ²	Source of current estimated total area: Telesca et al., 2015. EOO and AOO source: IUCN Red list (2015).

Distribution map



This map has been generated based on Telesca *et al.*, 2015 and the IUCN Red list (2015).

How much of the current distribution of the habitat type lies within the EU 28?

More than 56% of the known spatial distribution of this habitat lies within EU countries. The information is quite comprehensive for the Mediterranean sub-basins considered here except for parts of Greece and Croatia.

Trends in quantity

P. oceanica meadows are found to be widely present along the continental coastline and islands of most Mediterranean countries. For those countries where there is monitoring, a 12 % of decline seems to be the average value and could represent the minimal value of decline for the next 10-15 years while other countries report a larger decrease of the meadows. For countries such as Albania, Greece, Turkey, or Croatia, distribution is poorly documented and the current area concerns only less than 15-30% of the coastlines. Few reports reflected an increase in the surface of the *Posidonia* meadows, with the exception of Slovenia, these seems to be due to an important increase of knowledges in relation with the distribution of these *Posidonia* beds. The total known area of *P. oceanica* meadows in the Mediterranean Sea is being estimated to be 12,247 km², with an estimated regression of meadows amounted to 34% in the last 50 years due to cumulative effects of multiple local stressors. For the western Mediterranean, since 1980, however, it has being estimated that 56% of the *Posidonia* meadows whose demographic status has been monitored have suffered a decline in the coverage or its density.

- Average current trend in quantity (extent)
EU 28: Decreasing
EU 28+: Decreasing
- Does the habitat type have a small natural range following regression?
No

Justification

This habitat has a large natural range extending throughout the Mediterranean Sea and an EOO >50,000km².

- Does the habitat have a small natural range by reason of its intrinsically restricted area?

No

Justification

This habitat has a large natural range extending throughout the Mediterranean Sea and an EOO >50,000km².

Trends in quality

Relevant signs of regression in the quality of the meadows were documented in different areas of the Mediterranean, the more severe situations occurring in sites with a medium or high human impact (e.g. proximity to fishing ports, urbanised area), but also in proximity to river mouths which are located along the continental coastline. In Spain, it is estimated a decrease in the quality of the meadows to 49,585 ha over the last twenty years. Wide meadows declined and overall regression of the habitat was documented along the continental coasts of Liguria, Tuscany, Latium, Sardinia and Apulia regions of Italy as well as few sites in Albania as well as in France although in the latter a positive improvement has been observed from conservation efforts.

- Average current trend in quality

EU 28: Decreasing

EU 28+: Decreasing

Pressures and threats

The lower limit of this habitat is threatened by mechanical damage from trawling, boat anchoring and turbidity. Coastal development including shoreline artificialisation, urban and harbour infrastructure, and sand mining affect also the upper limit distribution of *Posidonia* meadows. Eutrophication (originated from the discharges of agriculture nutrients, organic matter, aquaculture and urban waste) and pollution, especially in coastal regions that are heavily populated, are a problem in many coastal areas. Invasive macroalgae such as *Caulerpa taxifolia* can grow on *Posidonia* rhizomes and sand and their proliferation is believed could accelerate the decline of the meadow. The proliferation of other epiphytic invasive species, such as *Lophocladia lamellandii* in the western Mediterranean can also threaten the survival and affect the density and complexity of the assemblages in the meadow. Climate change would be an additional threat through the warming of waters, sea level rise and extreme weather events.

List of pressures and threats

Biological resource use other than agriculture & forestry

Marine and Freshwater Aquaculture

Benthic dredging

Pollution

Pollution to surface waters by industrial plants

Pollution to surface waters by storm overflows

Other point source pollution to surface water

Diffuse pollution to surface waters via storm overflows or urban run-off

Nutrient enrichment (N, P, organic matter)

Toxic chemical discharge from material dumped at sea

Input of litter (solid waste matter)

Invasive, other problematic species and genes

Invasive non-native species

Natural System modifications

Modification of hydrographic functioning, general
Dykes, embankments, artificial beaches, general
Altered water quality due anthropogenic changes in salinity
Other human induced changes in hydraulic conditions

Climate change

Temperature changes (e.g. rise of temperature & extremes)
Flooding and rising precipitations

Conservation and management

Posidonia oceanica is protected by EU legislation (Habitat Directive), the Bern and Barcelona Conventions and some national legislations.

The habitat formed by this seagrass is also protected in various marine protected areas in the countries along the Mediterranean Sea. EU fishing regulations ban trawling activities near the shore (either above 50 m or 3 nm from the coast), giving indirect protection for this habitat (EC Council Regulation No. 1967, 21/12/2006). In some regions, more regulations are in place for fishing, shellfishing and aquaculture activities to be conducted on or above seagrass meadows to avoid negative impacts on the seagrasses. To prevent physical damage caused by trawling on the meadows, different measures should be put in place such as placing artificial reefs along certain stretches of the coast, developing effective surveillance programmes and enforcing the existing regulations to avoid illegal trawling. Awareness programmes with different sectors such as recreational boats and local councils will help to the better management of coastal activities and identifying areas where cost-effective schemes for threats reduction could be implemented. Mapping and monitoring efforts should target the remaining unmapped coastline (21,500 km) located in the southern and eastern regions of the basin and long term monitoring efforts should be in place to detect possible changes in the habitat.

List of conservation and management needs

Measures related to wetland, freshwater and coastal habitats

Restoring/Improving water quality

Measures related to marine habitats

Other marine-related measures
Restoring marine habitats

Measures related to spatial planning

Establish protected areas/sites
Legal protection of habitats and species

Measures related to hunting, taking and fishing and species management

Regulation/Management of fishery in marine and brackish systems
Specific single species or species group management measures

Conservation status

Annex 1:

1120: MMED U1

Species classified as Priority Habitat in the Habitats Directive (Dir 92/43/CEE). It is also included in the Barcelona Convention Annex II, List of endangered or threatened species. It is also included in the Annex I of the Strictly protected Flora species in the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention).

Posidonia oceanica is considered as good biological indicator of the quality of the marine environment and is considered a biological quality element in the implementation of the European Framework Water Directive.

When severely damaged, does the habitat retain the capacity to recover its typical character and functionality?

The accumulation of different pressures and threats with the lack of genetic variability and slow growth, makes *Posidonia oceanica* habitat less resilient to disturbance and slow recovery. The species has a rare sexual reproduction and slow horizontal growth of rhizome edges that do not provide a rapid recolonization of degraded beds or the colonisation of new areas.

Effort required

10 years	20 years	50+ years
Through intervention	Through intervention	Naturally

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	34 %	unknown %	unknown %	unknown %
EU 28+	34 %	unknown %	unknown %	unknown %

Over the last 50 years, it is thought that there has been a decline in the extent of this habitat by 34%. Whilst expert opinion is that this habitat will continue to decline in quantity, it has not been quantified. Therefore, this habitat has been assessed as Vulnerable under Criterion A1.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	>50,000 Km ²	Yes	Yes	no	>50	Yes	Yes	no	no
EU 28+	>50,000 Km ²	Yes	Yes	no	>50	Yes	Yes	no	no

The habitat is widespread in the the Mediterranean (reaching to the southern limits of Alboran Sea and Cyprus in the Levantine Sea. The EOO and the AOO exceed thresholds for threatened status. Declines in quantity and quality have been reported but the distribution of the habitat is such that the identified threats are unlikely to affect all localities at once. This habitat has therefore been assessed as Least Concern under criteria B.

Criterion C and D: Reduction in abiotic and/or biotic quality

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	unknown %	unknown %	30 %	slight %	unknown %	unknown %
EU 28+	unknown %	unknown %	30 %	slight %	unknown %	unknown %

Criterion C	C1		C2		C3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %
EU 28+	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %

Criterion D	D1		D2		D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %
EU 28+	unknown %	unknown %	unknown %	unknown %	unknown %	unknown %

Based on the countries that have provided data (Spain, Italy, Albania and France), there has been a slight decline in the overall quality of the meadows. There is a lack of quantitative data to be able to calculate percentage change in abiotic and/or biotic quality however substantial reductions in quality in at least some regions of this habitat are known to have occurred. Potentially damaging activities are known to be occurring across this habitat at the present time and are expected to continue into the future. Expert opinion is that this is at least a slight decline affecting more than 30% of extent of the habitat.

Based on this, the habitat type is assessed as Near Threatened under Criterion C/D2.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	unknown
EU 28+	unknown

There is no quantitative analysis available to estimate the probability of collapse of this habitat type. Therefore, the habitat type is assessed as Data Deficient under Criterion E.

Overall assessment "Balance sheet" for EU 28 and EU 28+

	A1	A2a	A2b	A3	B1	B2	B3	C/D1	C/D2	C/D3	C1	C2	C3	D1	D2	D3	E
EU28	VU	DD	DD	DD	LC	LC	LC	DD	NT	DD	DD	DD	DD	DD	DD	DD	DD
EU28+	VU	DD	DD	DD	LC	LC	LC	DD	NT	DD	DD	DD	DD	DD	DD	DD	DD

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Vulnerable	A1	Vulnerable	A1

Confidence in the assessment

Medium (evenly split between quantitative data/literature and uncertain data sources and assured expert

knowledge)

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09/10/2015

Date of review

08/01/2016

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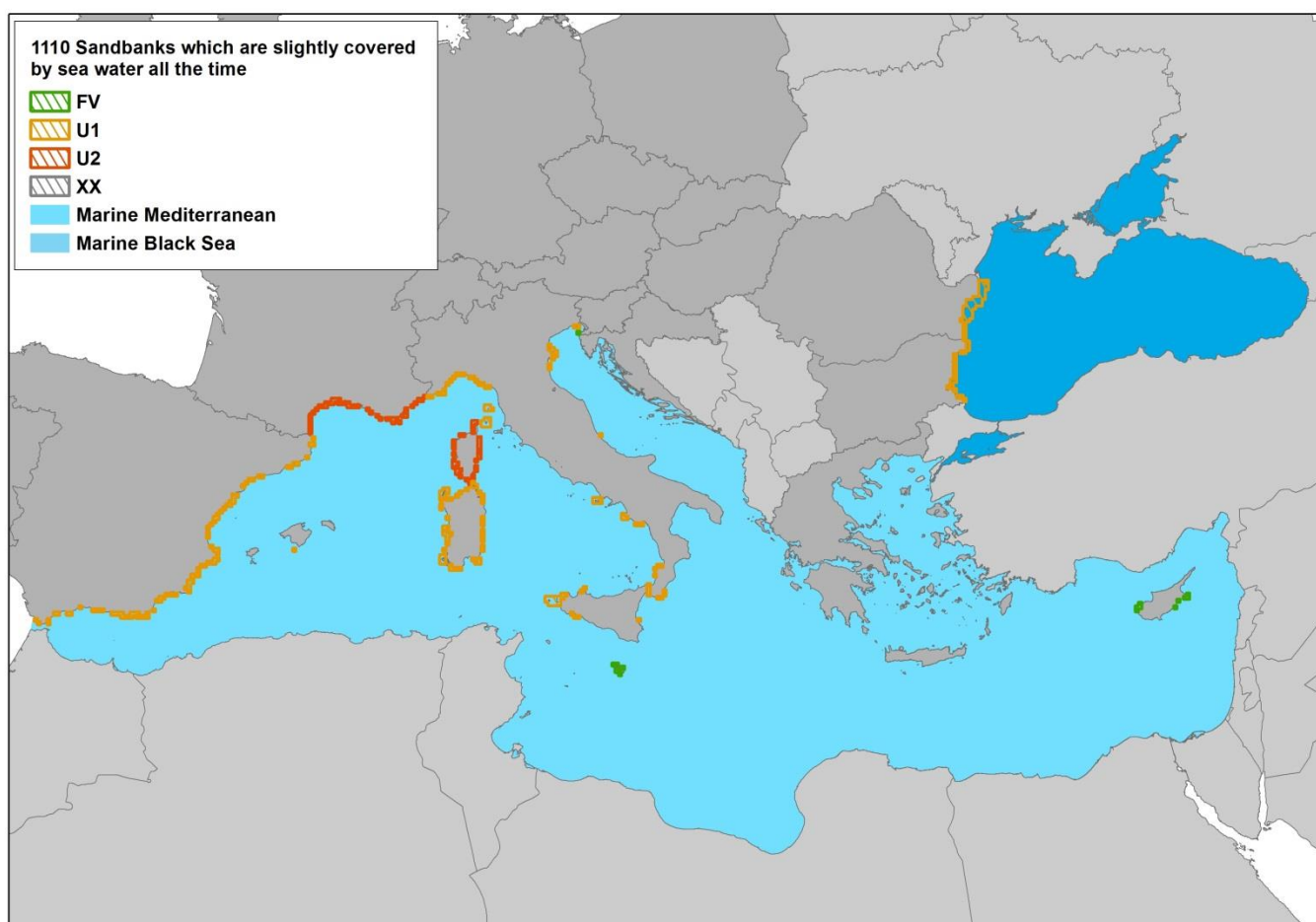
2.2.1 1110 Sandbanks which are slightly covered by sea water all the time

The habitat “1110 - Sandbanks which are slightly covered by sea water all the time”, is basically a habitat complex that can encompass a variety of soft bottoms. According to the Interpretation Manual of European Union Habitats - EUR28, Sandbanks are: *elevated, elongated, rounded or irregular topographic features, permanently submerged and predominantly surrounded by deeper water. They consist mainly of sandy sediments, but larger grain sizes, including boulders and cobbles, or smaller grain sizes including mud may also be present on a sandbank.*

The overall conclusion for the habitat is unfavourable in all regions where the habitat is present; and particularly, unfavourable- inadequate (U1) for the Marine Black Sea and Marine Mediterranean region. In the first reporting exercise (2001-2007), this habitat was reported as unknown in these two regions, the change to unfavourable is due to an improvement knowledge.

The main pressures and threats reported for the habitat involve pollution including eutrophication effects, overfishing, invasive non-native species, and infrastructures.

Map of habitat distribution and conservation status



Habitat conservation status at the Member State and EU levels

Conservation status parameters	MBLS			MMED							
	BG	RO	EU27	CY	ES	FR	GR	IT	MT	SI	EU27
range	U1	FV	FV	FV	FV	FV	XX	U1	FV	FV	U1
area	U1	FV	U1	FV	FV	FV	XX	U1	FV	FV	U1
structure	U1	FV	FV	FV	U1	U2	FV	XX	FV	FV	XX
future	U1	U1	U1	FV	FV	U2	FV	XX	FV	XX	XX
overall	U1	U1	U1	FV	U1	U2	XX	U1	FV	FV	U1

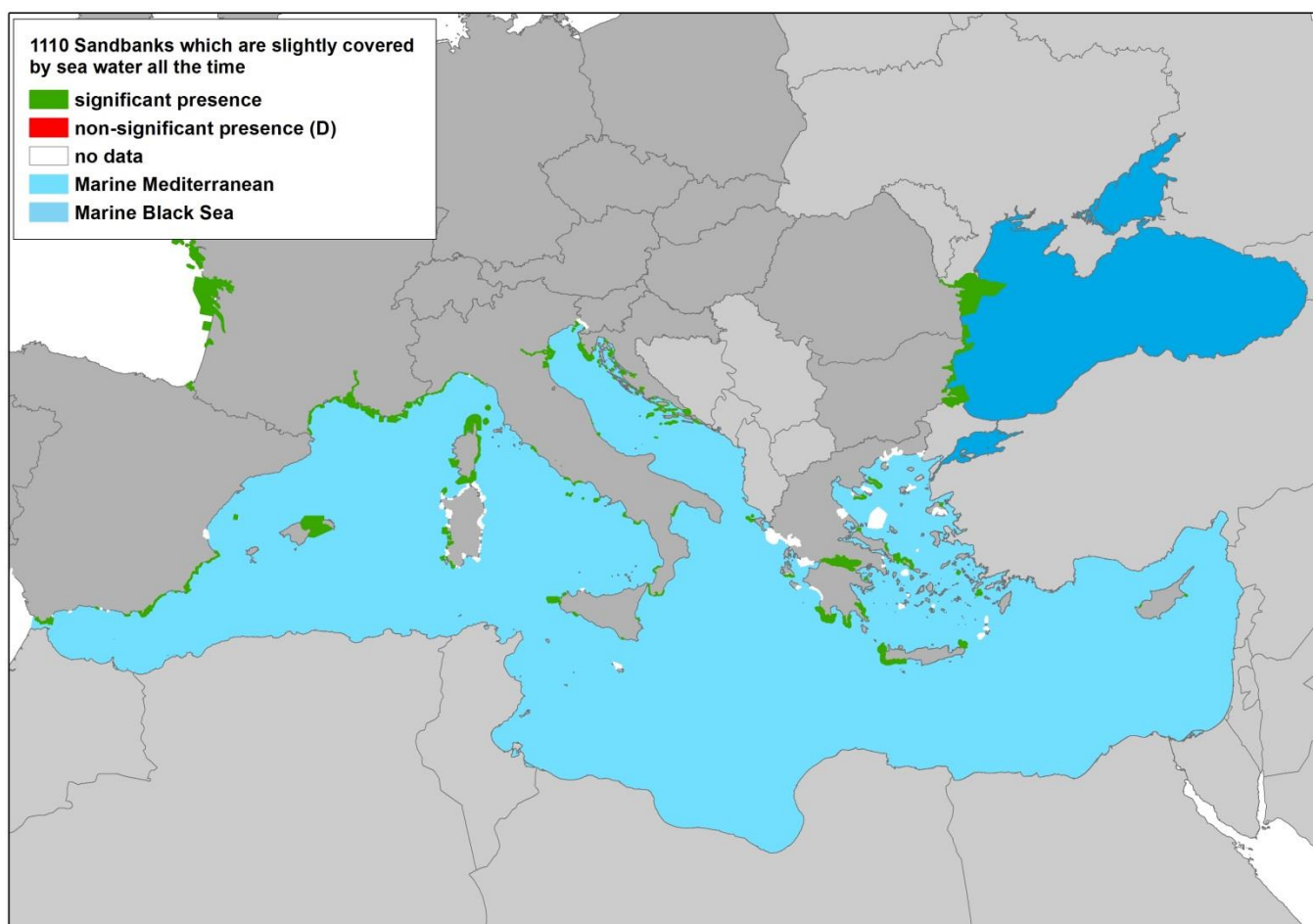
Proportion of pressures reported by MS as 'Highly important'

Pressures - Level 2	MBLS	MMED
C01 - Mining and quarrying	0%	0%
D03 - Shipping lanes and ports	20.0%	16.7%
E03 - Discharges (household/industrial)	0%	16.7%
F01 - Marine and freshwater aquaculture	0%	0%
F02 - Fishing and harvesting aquatic resources	20.0%	16.7%
F06 - Other hunting, fishing and collection activities	0%	16.7%
G05 - Other human intrusions and disturbances	0%	0%
H01 - Pollution to surface waters	20.0%	0%
H03 - Pollution to marine waters	0%	16.7%
H04 - Air pollution, air-borne pollutants	0%	0%
I01 - Invasive alien species	20.0%	0%
J02 - Changes in water bodies conditions	20.0%	0%
J03 - Other changes to ecosystems	0%	16.7%

Proportion of conservation measures reported by MS as 'Highly important'

Conservation measures - Level 2	MBLS	MMED
4.0 - Other wetland-related measures	0%	0%
4.1 - Restoring/improving water quality	33.3%	10.0%
4.2 - Restoring/improving the hydrological regime	0%	0%
5.0 - Other marine-related measures	0%	0%
5.1 - Restoring marine habitats	0%	0%
6.0 - Other spatial measures	0%	0%
6.1 - Establish protected areas/sites	33.3%	30.0%
6.3 - Legal protection of habitats and species	0%	30.0%
7.1 - Regulation/ Management of hunting and taking	0%	10.0%
7.3 - Regulation/ Management of fishery in marine and brackish systems	0%	10.0%
8.1 - Urban and industrial waste management	0%	0%
8.3 - Managing marine traffic	0%	10.0%
9.0 - Other resource use measures	0%	0%
9.2 - Regulating/Managing exploitation of natural resources on sea	33.3%	0%

SCI distribution map for this habitat type



Number of SCIs where this habitat type occurs and habitat area covered by Natura 2000 per Member State (Natura 2000 End_2017 database)

MS	TOTAL SCI	SIGNIFICANT SCI	COVER (km ²)	SIGNIFICANT COVER (km ²)
BG	15	15	225,79	225,79
CY	2	2	0,90	0,90
ES	32	26	179,74	174,23
FR	97	96	7868,56	7868,56
GR	49	49	1681,78	1681,78
HR	74	74	359,84	359,84
IT	117	83	224,63	224,63
MT	3	3	0,89	0,89
RO	9	9		
SI	1	1	0,01	0,01

3 Species fact sheets

3.1 1349 Bottlenose dolphin *Tursiops truncatus*

(Annexes II and IV)

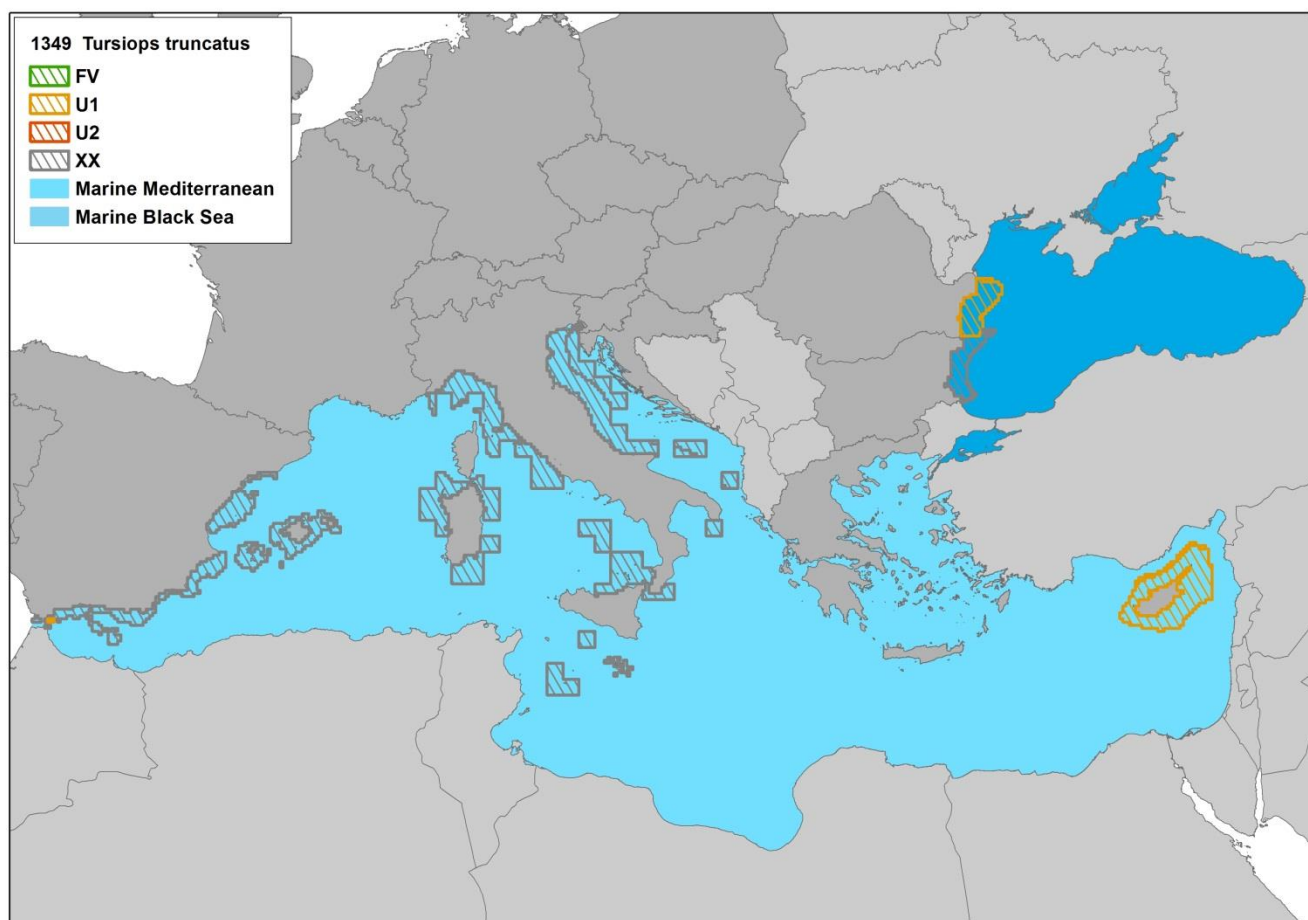
The common bottlenose dolphin, *Tursiops truncatus*, inhabits the coastal as well as pelagic waters of the marine Atlantic, Macaronesian, Black Sea and Mediterranean regions.

In the marine Mediterranean region, the common bottlenose dolphin is unfavourable- inadequate (U1). The reported conservation status is in agreement with the IUCN list of threatened species, where the species is listed as vulnerable (VU) for the Mediterranean subpopulation. The species was assessed as unknown (XX) in 2001-2007, since then knowledge has improved even though most countries lack information on reference values for population and future prospects.

The conservation status of the species in the Marine Black Sea region is unknown since all parameters have been reported as unknown by Bulgaria.

The species has been reported as being vulnerable to: overfishing, interaction with fishing gear and disturbance from nautical activities.

Map of species distribution and conservation status



Species conservation status at the Member State and EU levels per marine region

Conservation status parameters	MBLS			MMED								
	BG	BG	EU27	CY	ES	FR	GR	IT	MT	SI	UK	EU27
range	XX	FV	XX	FV	FV	U1	U1	XX	XX	FV	FV	U1
population	XX	U1	XX	U1	XX	XX	U1	XX	XX	XX	XX	XX
habitat of species	XX	U1	XX	FV	XX	XX	U1	XX	XX	FV	FV	XX
future	XX	U1	XX	FV	XX	XX	U2	XX	XX	XX	U1	XX
overall	XX	U1	XX	U1	XX	U1	U2	XX	XX	XX	U1	U1

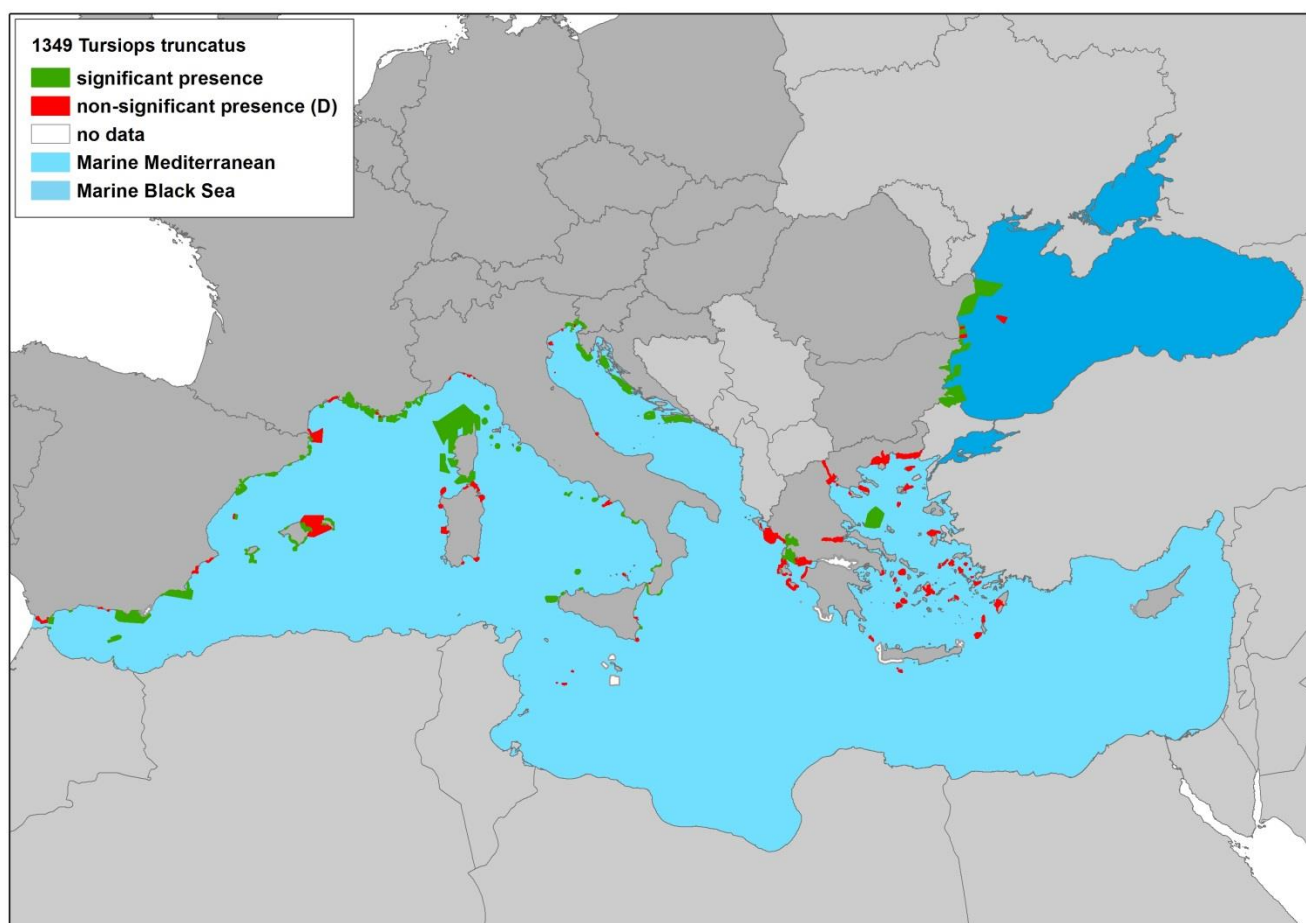
Proportion of pressures reported by MS as 'Highly important'

Pressures - Level 2	MBLS	MMED
D03 - Shipping lanes and ports	16.7%	0%
F01 - Marine and freshwater aquaculture	0%	0%
F02 - Fishing and harvesting aquatic resources	16.7%	40.0%
F03 - Hunting and collection of terrestrial wild animals	16.7%	0%
F05 - Illegal taking of marine fauna	16.7%	0%
G01 - Outdoor sports, leisure and recreational activities	0%	20.0%
G02 - Sport and leisure infrastructures	0%	0%
H01 - Pollution to surface waters	16.7%	0%
H03 - Pollution to marine waters	16.7%	0%
H06 - Excess energy (noise, light, heating, electromagnetic)	0%	20.0%
J03 - Other changes to ecosystems	0%	20.0%

Proportion of conservation measures reported by MS as 'Highly important'

Conservation measures - Level 2	MBLS	MMED
4.1 - Restoring/improving water quality	25.0%	0%
6.1 - Establish protected areas/sites	12.5%	31.3%
6.3 - Legal protection of habitats and species	12.5%	31.3%
7.0 - Other species management measures	0%	6.3%
7.1 - Regulation/ Management of hunting and taking	0%	6.3%
7.2 - Regulation/ Management of fishery in limnic systems	12.5%	0%
7.3 - Regulation/ Management of fishery in marine and brackish systems	12.5%	12.5%
7.4 - Specific single species or species group management measures	0%	6.3%
8.3 - Managing marine traffic	0%	6.3%
9.2 - Regulating/Managing exploitation of natural resources on sea	25.0%	0%

SCI distribution map for this species



Number of SCIs where this species occurs per Member State (Natura 2000 End_2017 database)

MS	TOTAL SCI	SIGNIFICANT SCI	POPULATION SIZE in N2K SITES (Art.17)	SCI AREA (km ²)	SIGNIFICANT SCI AREA (km ²)
BG	14	14		4055,36	4055,36
CY	3	3	30-100 i	215,4	215,4
ES	69	59	710 – 3550 i	12965,22	8249,03
FR	29	25	122 – 200 i	15385,6	15207,63
GR	53	8		17643,8	9607,05
HR	6	6		3688,64	3688,64
IT	58	32		3381,03	2061,37
MT	3	3	5 – 5 i	1385,6	1385,6
RO	8	5	100- 150 i	5998,42	5472,08
UK	1	1	1-10 i	54,87	54,87

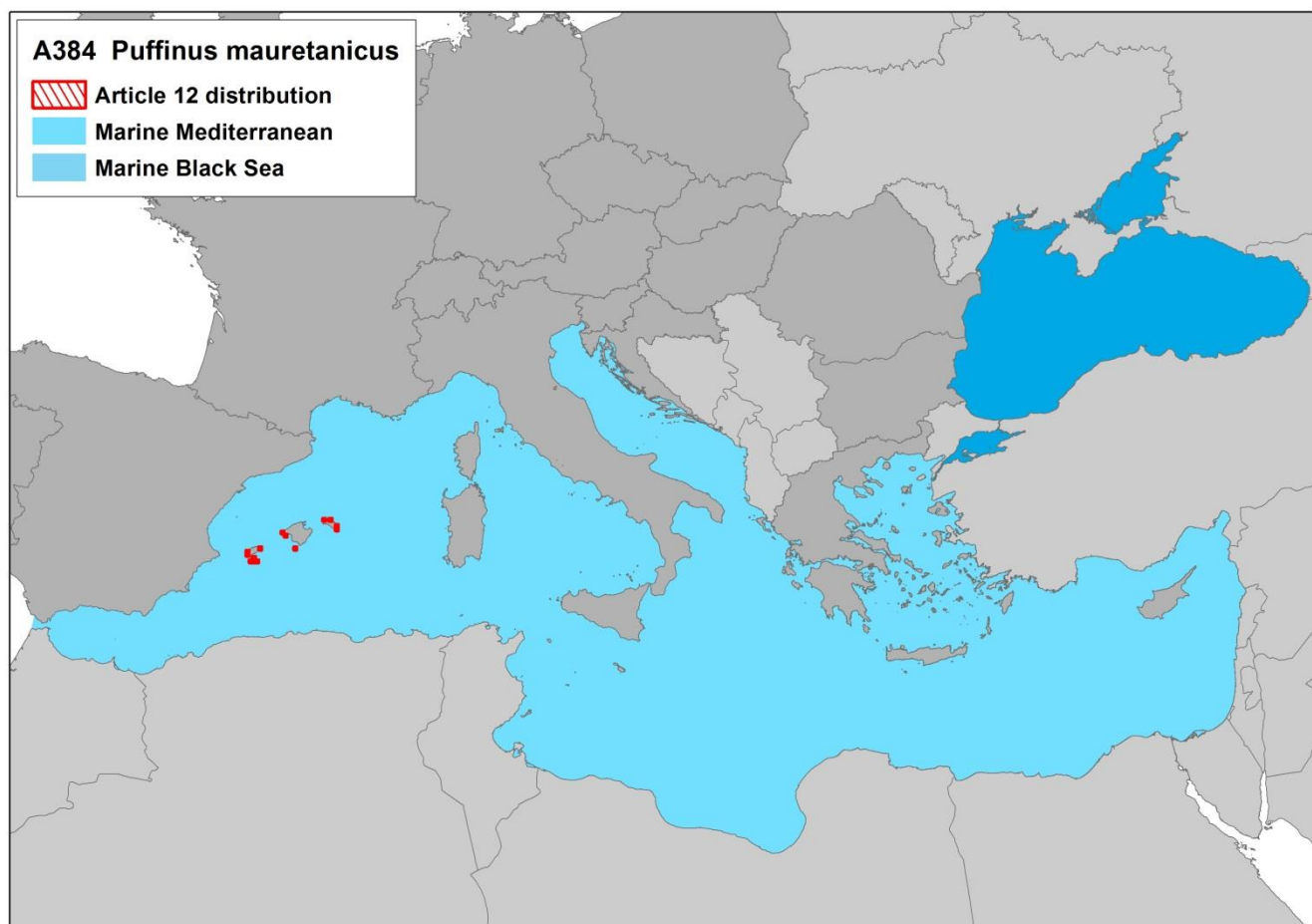
3.2 A384 Balearic shearwater *Puffinus mauretanicus*

Balearic shearwater, *Puffinus mauretanicus*, is a species of seabird found in unvegetated or sparsely vegetated land, shelf and open ocean ecosystems. It is endemic to the Balearic Islands in Spain and has a breeding population size of 3100- 3200 pairs and a breeding range size of 3100 km² in EU27. The breeding population trend in EU 27 is decreasing in the short term and unknown in the long term.

The EU population status of *Puffinus mauretanicus* was assessed as “threatened”, as the species meets one or more of the IUCN Red List criteria for threatened at the EU27 scale.

The main pressures for this bird are fishing activities and pollution of marine waters.

Article 12 distribution



Species population trends by MS

MS/Ter.	% in EU27	Breeding population size	Breeding population trend		Range area	Breeding range trend		Winter population size	Winter population trend	
			Short term	Long term		Short term	Long term		Short term	Long term
ES	100.0	3193 - 3193 p	-	x	3116	-	x	6000 - 18000 i	x	x
PT										

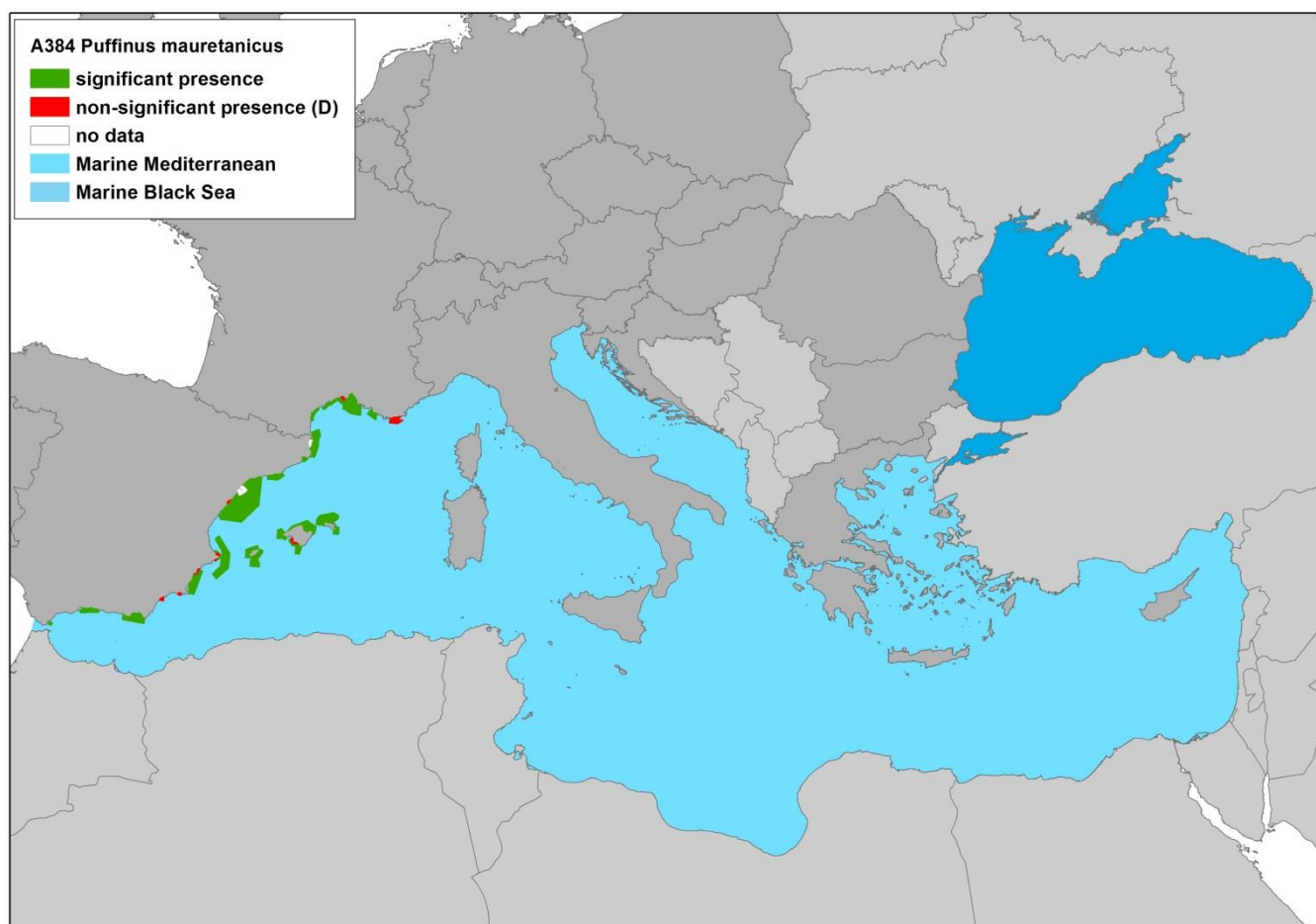
Proportion of pressures reported by MS as 'Highly important' at EU scale

Code	Activity	Frequency
F02	Fishing and harvesting aquatic resources	31
H03	Pollution to marine waters	23
C03	Production of renewable energy (abiotic)	15
I01	Invasive alien species	8
K03	Interspecific faunal relations	8
M02	Biotic changes (climate change)	8
XO	Threats and pressures from outside the Member State	8

Proportion of conservation measures reported by MS as 'Highly important' at EU scale

Code	Measure	Frequency
6.1	Establish protected areas/sites	30
6.3	Legal protection of habitats and species	30
7.4	Specific single species or species group management measures	20
9.2	Regulating/Managing exploitation of natural resources on sea	20

SPA distribution map for species



Number of SPAs where this species occurs per Member State (Natura 2000 End_2017 database)

MS	TOTAL SCI	SIGNIFICANT SCI	POPULATION SIZE in N2K SITES (Art. 12)*	SCI AREA (km ²)	SIGNIFICANT SCI AREA (km ²)
ES	48	41	P 21001i / B 1304- 1572 p	23337,71	22863,38
FR	6	4	P 5000- 10000 i	4343,27	3706,32
UK	1	1	P 1001-10000 i	54,86	54,86

*Note: population size refers to the MS, not to biogeographical region. B= breeding, W= wintering, P= passage.

3.3 A464 Yelkouan shearwater *Puffinus yelkouan*

Yelkouan shearwater, *Puffinus yelkouan*, is a species of seabird found in unvegetated or sparsely vegetated land ecosystems. It has a breeding population size of 19000- 29900 pairs and a breeding range size of 3800 km² in the EU27. The breeding population trend in EU27 is increasing in both, the short and long term.

The EU population status of *Puffinus yelkouan* was assessed as secure because the species does not meet any of the IUCN Red List criteria for “threatened” or “near threatened”: the EU27 population or range has not declined by 20% or more since 1980.

Article 12 distribution



Species population trends by MS

MS/Ter.	% in EU27	Breeding population size	Breeding population trend		Range area	Breeding range trend		Winter population size	Winter population trend	
			Short term	Long term		Short term	Long term		Short term	Long term
FR	14.0	628 - 1053 p	x	0	600	0	0			
GR										
IT	67.4	12791 - 19774 p	+	+	3200	-	+			
MT	18.6	1660 - 1980 p	+	0	33	0	0			

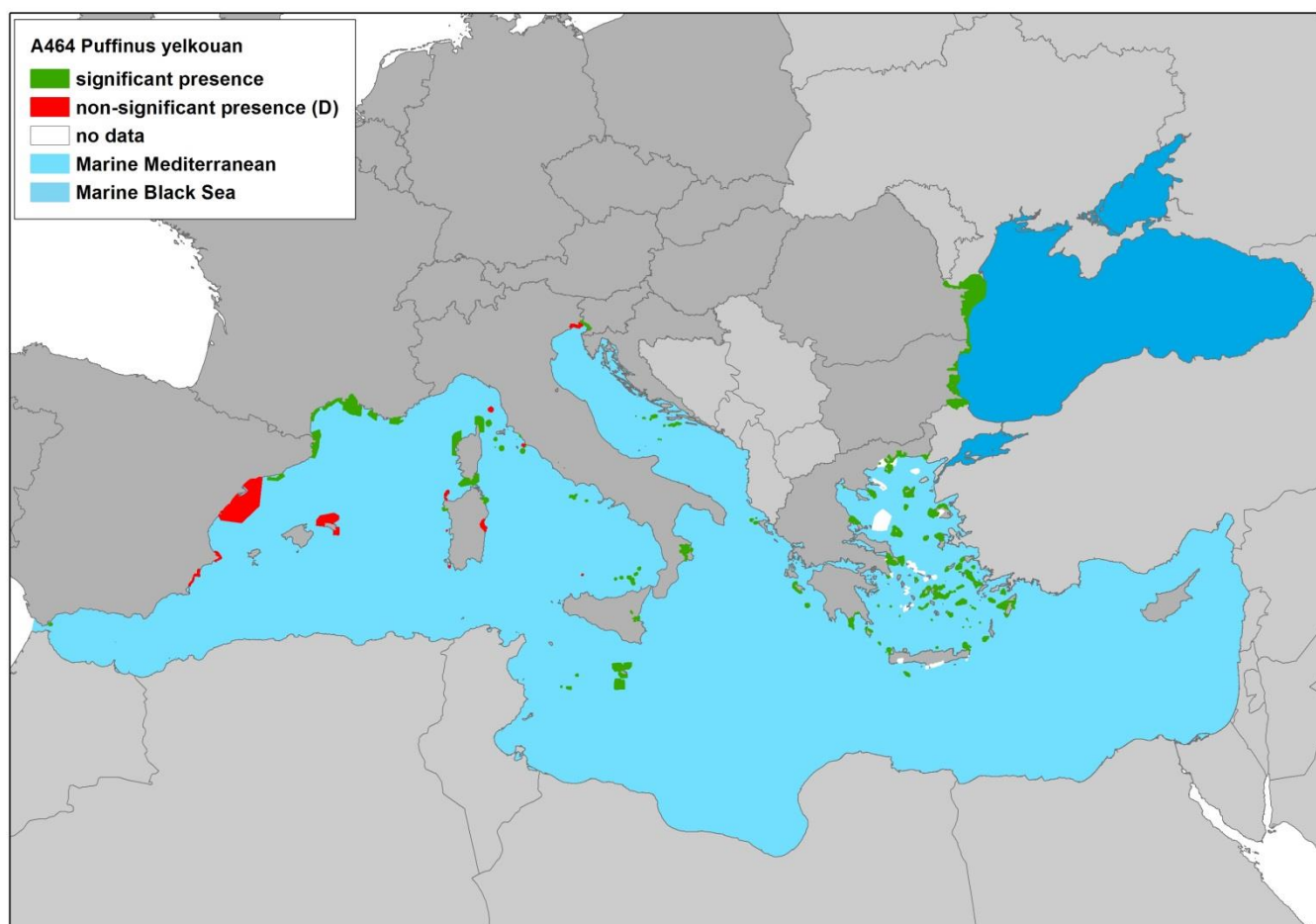
Proportion of pressures reported by MS as 'Highly important' at EU scale

Code	Activity	Frequency
I01	Invasive alien species	50
F02	Fishing and harvesting aquatic resources	25
H06	Excess energy (noise, light, heating, electromagnetic)	25

Proportion of conservation measures reported by MS as 'Highly important' at EU scale

Code	Measure	Frequency
6.1	Establish protected areas/sites	25
6.3	Legal protection of habitats and species	25
7.4	Specific single species or species group management measures	19
7.1	Regulation/ Management of hunting and taking	13
4.3	Managing water abstraction	6
7.3	Regulation/ Management of fishery in marine and brackish systems	6
9.2	Regulating/Managing exploitation of natural resources on sea	6

SPA distribution map for species



Number of SPAs where this species occurs per Member State (Natura 2000 End_2017 database)

MS	TOTAL SCI	SIGNIFICANT SCI	POPULATION SIZE	SCI AREA (km ²)	SIGNIFICANT SCI AREA (km ²)
BG	11	11	P 5000- 20000 i	2729,25	2729,25
ES	13	2		12517,5	1241,05
FR	8	8	B 628- 1053 p	7025,54	7025,54
GR	76	76		14276,63	14276,63
HR	2	2		322,5	322,5
IT	26	14	B 12000 -19000 p	3149,95	2321,08
MT	14	14	B 1560 1820 p	2012,83	2012,83
RO	2	2	P 8000 – 10000 i	6574,46	6574,46
UK	1	1	P 11- 50 i	54,86	54,86

*Note: population size refers to the MS, not to biogeographical region. B= breeding, W= wintering, P= passage.