Template for Submission of Scientific Information to Describe Areas Meeting Scientific Criteria for Ecologically or Biologically Significant Marine Areas

Title/Name of the area: Cantabrian Sea (Southern Bay of Biscay)

Abstract (*in less than 150 words)*

The Cantabrian Sea ecosystem includes the continental self and slope and the deep abyssal basin (5000 m water depth) located along the northern border of the Iberian Peninsula (Southern Bay of Biscay), from the Capbreton Canyon head to Estaca de Bares Cape, in the Galician coast. It is structurally a highly complex area, where the narrow continental shelf is deeply affected by the action of the tectonic compression, containing important geomorphological elements such as large submarine canyons and seamounts. The hydrology is also complex due to the interaction between waters formed in the Atlantic with water of Mediterranean origin.

The EBSA proposal includes a diversity of benthic habitat that are considered as hotspots of biodiversity, spawning grounds for several fish species of commercial interest, soft bottoms essential for the biology of commercial benthic species, various habitats for endangered, threatened and declining species and it is also a seasonal migratory pathway for large migratory pelagic species and an important area for cetaceans.

Introduction

(To include: feature type(s) presented, geographic description, depth range, oceanography, general information data reported, availability of models)

The Bay of Biscay, where the Cantabrian Sea is located, is an arm of the Atlantic Ocean, indenting the coast of W Europe from NW France (Offshore of Brittany) to NW Spain (Galicia). The southern Bay of Biscay is a well-differentiated geomorphological unit in the northeast Atlantic. The abyssal basin has a mean depth of 4,800 m. The shelf of the Bay of Biscay is quite narrow in the Cantabrian Sea whereas it is much wider and increasing with latitude on the French coast. In the Cantabrian Sea there are various deep-sea canyons that have generally narrow, steep-sided, linear and sinuous channels. The deep-sea valleys allow continental sediments to be transported to oceanic basins (Lavín et al., 2005).

Most of the water masses occupying the bay have a North Atlantic origin or are the result of interaction between waters formed in the Atlantic with water of Mediterranean origin. The hydrodynamics of the bay are dominated by: a) a weak anticyclonic circulation in the oceanic part, b) a poleward-flowing slope current, c) coastal upwelling, d) the northward flow of Mediterranean water, e) the shelf circulation and f) the cross-shelf transport along the axes of submarine canyons (OSPAR, 2000). Most of these features show a marked seasonality (Koutsikopoulos and Le Cann, 1996). The Bay of Biscay is a region of large tidal amplitudes and strong thermohaline forcing (Piraud et al., 2003). It is well known for its energetic internal tides, caused by the combination of summer stratification, steep shelf-edge topography, and strong (cross-slope) tidal currents, especially at spring tides (Lam et al., 003).

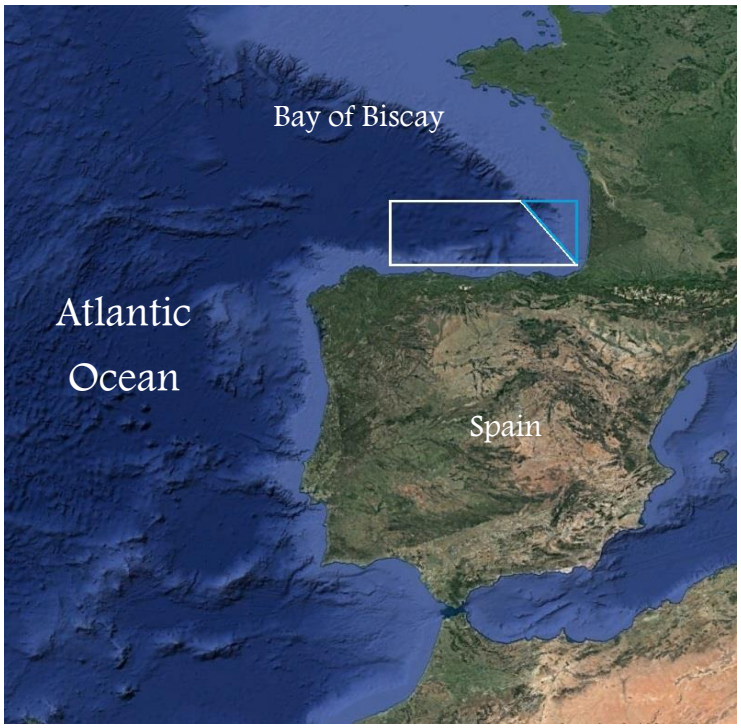
Coastal upwelling events occur mainly on the Spanish continental margin of the Bay of Biscay (Cantabrian Sea). These are produced by NE winds prevailing from late May to September. Upwelling events are highly variable in intensity and frequency from year to year, but in general they are more common and intense to the west of Cape Peñas and act as a mechanism generating spatial variability between the western and eastern parts of the Cantabrian Sea and between the coastal mixed waters and the neighbouring oceanic stratified areas (Lavín et al., 2005). Moreover, the Cantabrian Sea shows a low continental influence

due to the absence of large rivers in the area which affects the physical and chemical characteristics of the water column and sediments. As a result, it shows environmental characteristics significantly different from the large continental shelf of the French Bay of Biscay area.

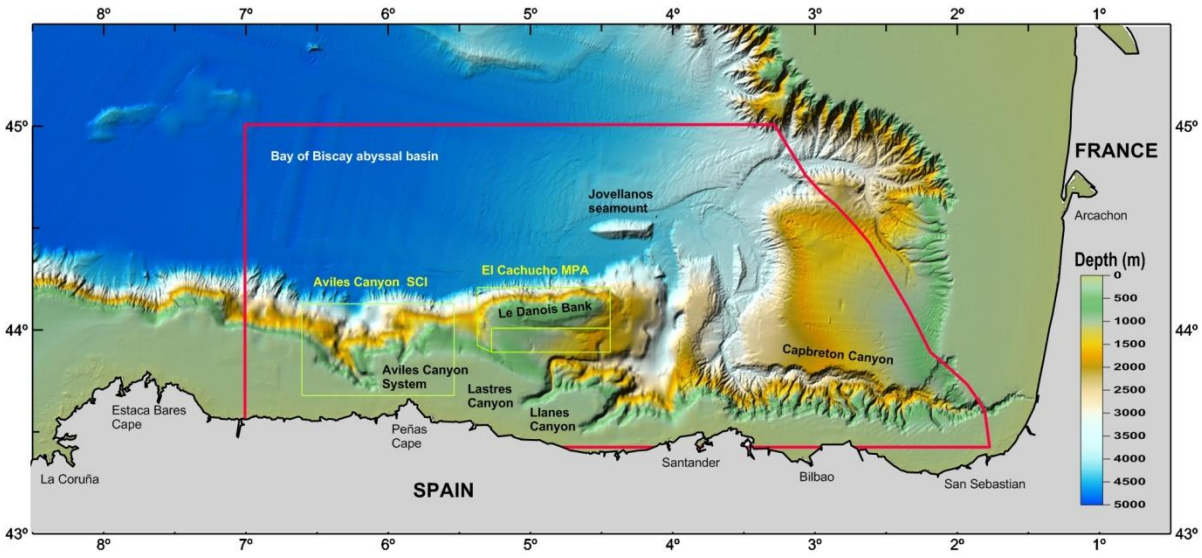
There are many descriptive studies on different aspects of the Bay of Biscay. The main contributions are Quality Status Report from OSPAR (2000) and the work of Valdés and Lavín (2002), which considers the Bay of Biscay as a large marine ecosystem. Díez et al. (2000) reviewed the information on the southern part of the Bay of Biscay (the Cantabrian Sea).

Location
(Indicate the geographic location of the area/feature. This should include a location map.)

The EBSA proposal (white polygon) is located in the south of Bay of Biscay and is bounded by the parallels (43º 25'N and 45º 00'N) and meridians (2º 10'W and 7º 00'W). It includes waters under Spanish jurisdictions. However, from an ecological point of view, it should be assessed the possibility of extending the geographic limits to include also waters under French jurisdiction.



The proposal includes the continental shelf along the Spanish coast, pronounced submarine canyon's systems such as the systems of Capbreton, Llanes, Lastres and Avilés, seamounts such as Jovellanos and Le Danois Bank as well as numerous mounds, pockmarks and continental rocky outcrops (white polygon). The blue polygon indicates waters under French jurisdiction.



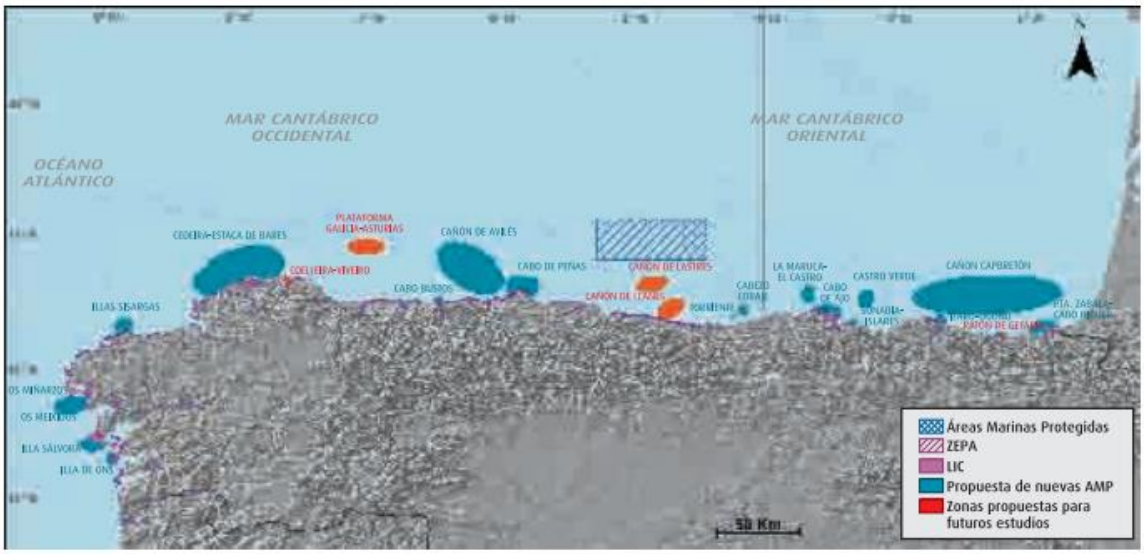
Feature description of the proposed area

(This should include information about the characteristics of the feature to be proposed, e.g. in terms of physical description (water column feature, benthic feature, or both), biological communities, role in ecosystem function, and then refer to the data/information that is available to support the proposal and whether models are available in the absence of data. This needs to be supported where possible with maps, models, reference to analysis, or the level of research in the area)

- *The EBSA proposal includes a diversity of benthic habitat that are considered as hotspots of biodiversity.*

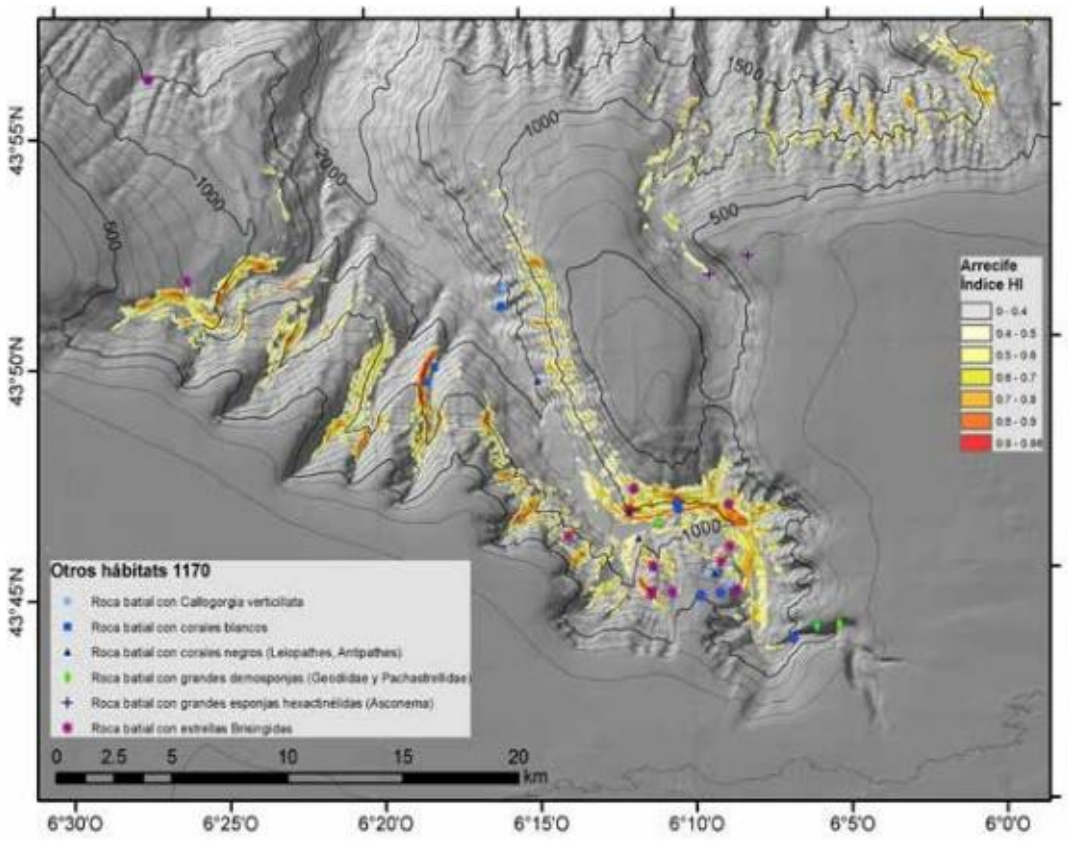
The Bay of Biscay area forms the subtropical/boreal transition zone of the eastern Atlantic, where typical temperate-water species from the south occur together with those of northern origin and, consequently, high biodiversity indices exist in comparison with adjacent areas (Quéro et al., 1989; Sánchez et al., 2002). Additionally, the structurally highly complex area includes a great diversity of geomorphological features (submarine canyons, seamounts, banks and mounds, pockmarks, slope affected by smaller rock outcrops, etc) and hence, a great diversity of benthic niches available. Although in some areas the benthic information is very scarce (in particular, in the deepest zones), the scientific data about some specific areas highlights the existence of important hotspots of biodiversity. The submarine canyons of the Avilés system (Sánchez et al., 2014), the Le Danois Bank (Sánchez et al., 2008) as well as numerous areas of the continental slope (Aguilar et al., 2009) are example of hotspots of benthic biodiversity.

Habitats on both, soft and rocky bottoms, host a high diversity of species resulting in shelf and slope ecosystems that are rich in species and in ecological interactions. Circalittoral rocky bottoms with *Phakellia ventilabrum* and *Dendrophyllia cornigera*, coral reefs with *Madrepora oculata* and *Lophelia pertusa*, bathyal rocky bottoms with gorgonians (*Callogorgia verticillata*, *Acanthogorgia* spp.), big sponges grounds (*Asconema setubalense*, Geodiidae, Pachastrellidae) and black corals (*Leiopathes* sp., *Antipathes* sp., *Bathypathes* sp.). Other species that are frequently found over hard substrates are crinoids (*Leptometra celtica*) and sea stars (*Brisinga endecacnemos* and *Novodina pandina*). However, over soft bottoms, different communities have been found such as, soft bottoms with pennatulids (*Pennatula rubra*, *Pennatula phosphorea*, *Funiculina quadrangularis*), tube-dwelling anemones (*Cerianthus* sp.) and detritic sand bottoms with sea anemones (*Phelliactis hertwigi*). Some carnivorous sponges (*Lypocodina*, *Chondrocladia* and *Cladrihiza*) have also been recorded (see Sánchez et al., 2008; 2014; Aguilar et al., 2009).

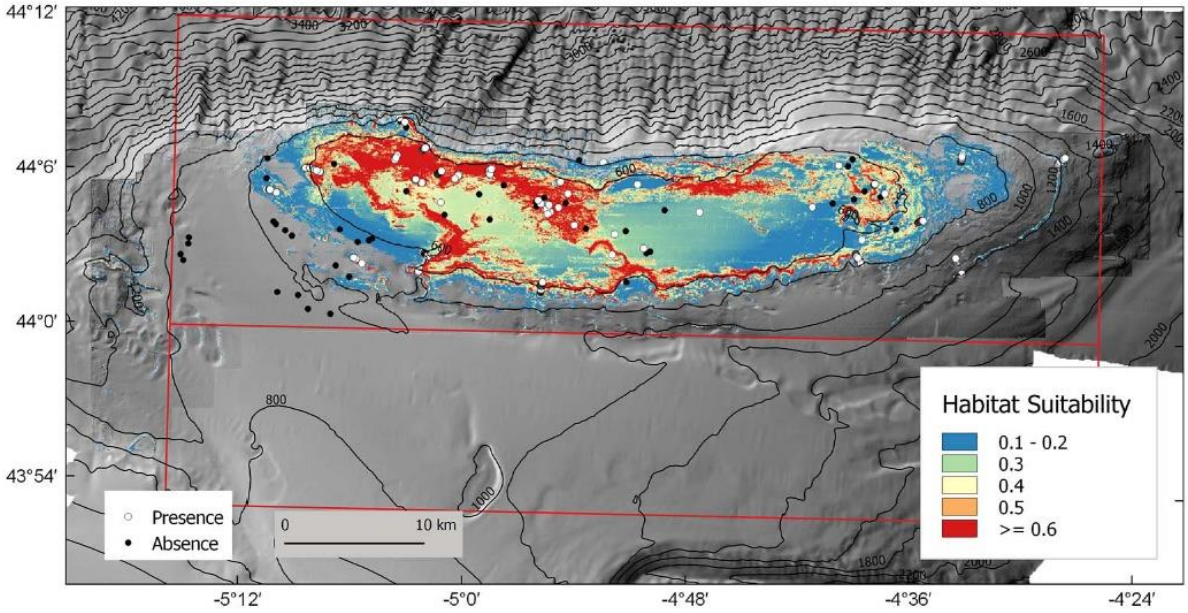


Areas of Ecological Importance from the Cantabrian Sea (Aguilar et al., 2009).

Together with those deep zones, some coastal areas are also ecologically or biologically significant due to the presence of gorgonian forest and sponge grounds (e.g. Somos Llungo- Peñas Cape) or due to their geomorphology and the presence of typical Mediterranean species in the Cantabrian Sea (e.g. Jaizkibel). Levels of biodiversity indexes in both sites area high.



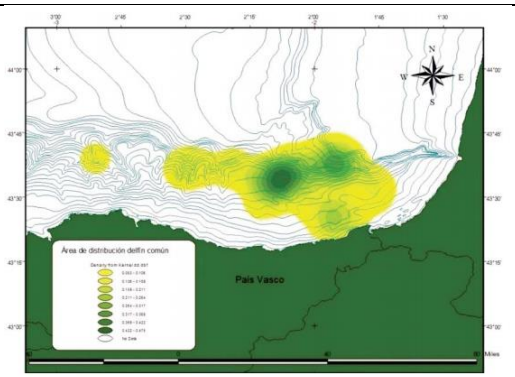
Spatial distribution of habitat 1170 Reefs in the Avilés Canyon. The HI index represents the probability of finding coral reefs. The other habitats considered as 1170 are shown with symbols of presence (Sánchez et al. 2014).



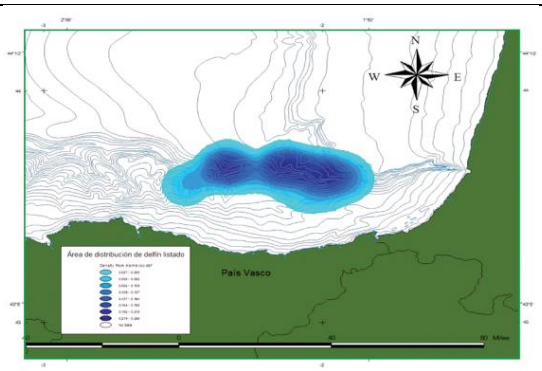
Predicted habitat suitability for all the 1170 Reefs habitat types based on six structuring species on the Le Danois Bank. The dots of species presence-absence correspond with those of all previous surveys conducted in the area (F. Sánchez et al., 2017)

- *The EBSA proposal is an important area for cetaceans.*

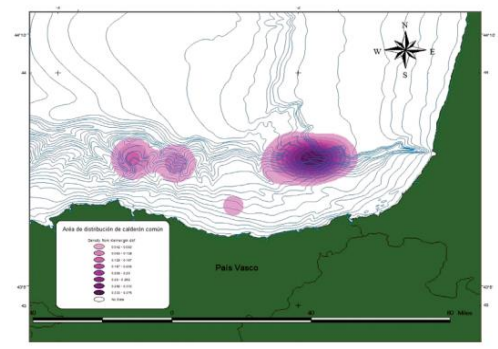
Continued (not temporary) presence of 5 cetaceans: the bottlenose dolphin *Tursiops truncatus* (Montagu, 1821), the common dolphin *Delphinus delphis* (Linnaeus, 1758), the long-finned pilot whale *Globicephala melas* (Traill, 1809), the striped dolphin *Stenella coeruleoalba* (Meyen, 1833) and the Cuvier's Beaked Whale *Ziphius cavirostris* (Cuvier, 1823) (Marcos-Ipiña et al., 2014). Additionally, these authors have recorded other seven species of cetaceans in the area.



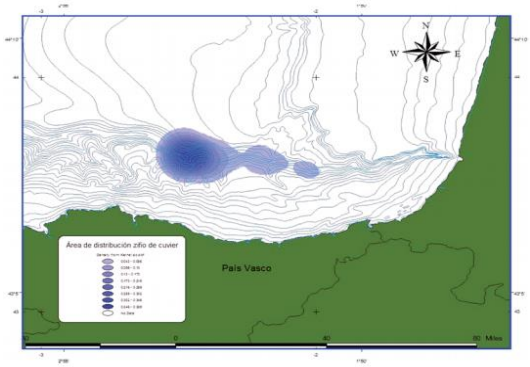
Delphinus delphis



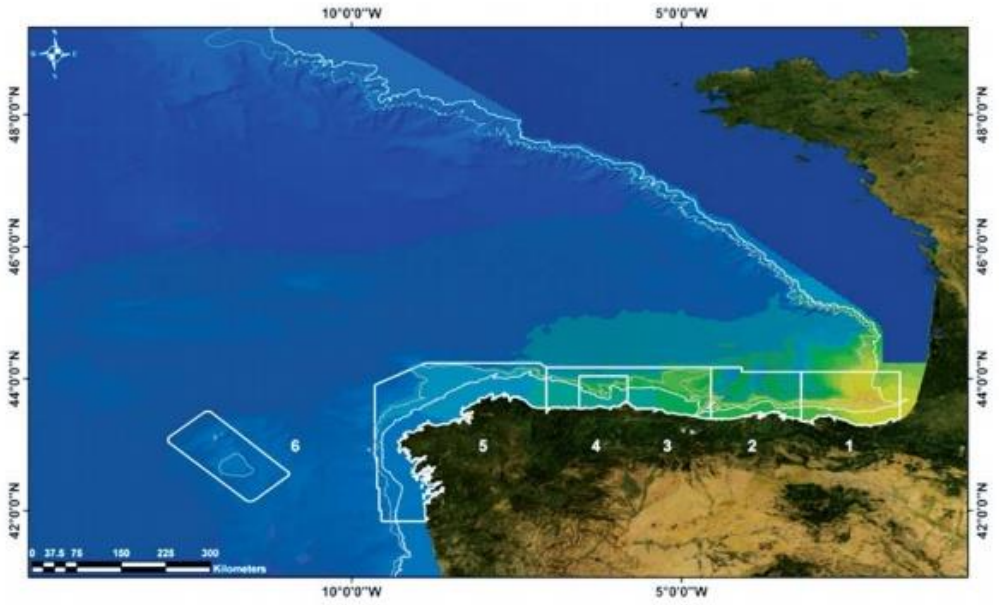
Stenella coeruleoalba



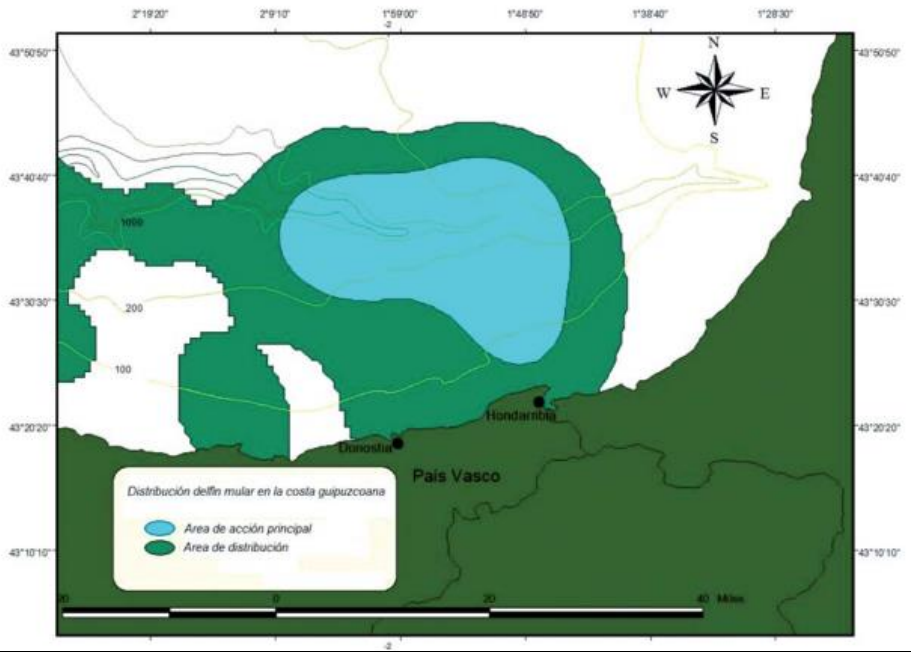
Globicephala melas



Ziphius cavirostris



Tursiops truncatus 2003-2011 (CEMMA, 2012)



Tursiops truncatus

- *The EBSA proposal includes habitats for endangered, threatened and declining species.*

Many species recorded in the area have been considered as endangered, threatened and/or declining species, according to the IUCN, OSPAR, ICES, HABITAT DIRECTIVE, etc.

Listed below are some examples of species registered in the area that need special attention:

The IUCN Red List of threatened species (CR: Critically Endangered, EN: Endangered and VU Vulnerable):

Balaenoptera musculus	*Balaenoptera physalus*	*Anguilla anguilla*
Balaenoptera borealis	*Caretta caretta*	*Sphyrna mokarran*
Physeter macrocephalus	*Dermochelys coriacea*	*Sphyrna zygaena*
Balaenoptera musculus	*Dipturus batis*	*Isurus paucus*
Balaenoptera borealis	*Squatina squatina*	*Isurus oxyrinchus*

Cetorhinus maximus
Oxynotus centrina
Galeorhinus galeus
Squalus acanthias
Mustelus mustelus
Centrophorus lusitanicus
Dalatias licha
Carcharhinus plumbeus
Carcharhinus longimanus
Odontaspis ferox
Raja undulata
Rostroraja alba
Leucoraja circularis
Leucoraja fullonica
Amblyraja radiata
Dipturus batis
Mobula mobular
Thunnus thynnus
Coryphaenoides rupestris
Hippoglossus hippoglossus
Palinurus elephas
Epinephelus marginatus
Mola mola
Labrus viridis
Balistes capriscus
Pomatomus saltatrix
Thunnus thynnus
Trachurus trachurus
Sardinella maderensis
Makaira nigricans
Dentex dentex
Opisthoteuthis calyso
Opisthoteuthis massyae

OSPAR Species

Arctica islandica
Ostrea edulis
Patella aspera
Puffinus mauretanicus
Rissa tridactyla
Uria aalge
Sterna dougallii
Centroscymnus coelolepis
Centrophorus granulosus
Centrophorus squamosus
Cetorhinus maximus
Dipturus batis
Raja montagui
Raja clavata
Rostroraja alba
Lamna nasus
Squalus acanthias
Squatina squatina
Acipenser sturio
Alosa alosa
Anguilla anguilla
Hippocampus guttulatus
Hippocampus hippocampus
Hoplostethus atlanticus
Petromyzon marinus
Salmo salar
Thunnus thynnus
Caretta caretta
Dermochelys coriacea
Balaenoptera musculus
Eubalaena glacialis
Phocoena phocoena

OSPAR Habitats

Coral gardens
Deep-se sponge aggregations
Seamounts
Sea-Pen & Burrowing Megafauna Communities

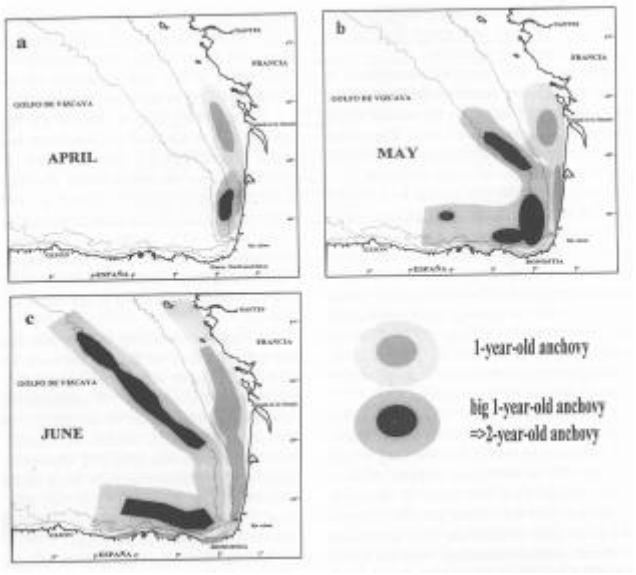
Habitat Directive Habitats

1170 Reefs
1180 Submarine structures made by leaking gases

- *The EBSA proposal comprises spawning grounds for several fish species of commercial interest*

Spawning ground of small-sized pelagics sucha as the anchovy (*Engraulis encrasicolus*) and demersal species such as the hake (*Merluccius merluccius*) are examples of species that spawn in the area:

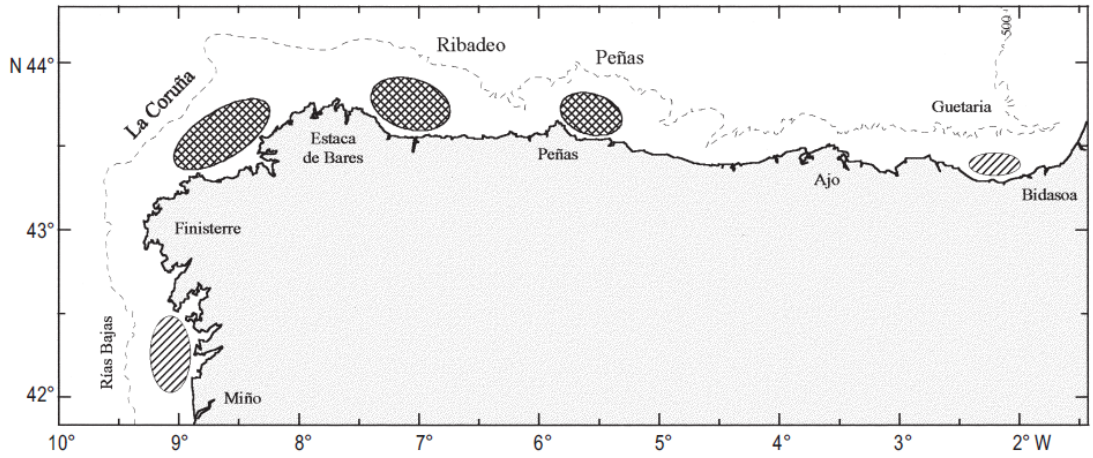
Anchovy in the Bay of Biscay may grow to >20 cm and rarely lives beyond three years of age. It forms large schools located at between 5 and 15 metres above the bottom during the day (Massé, 1996). It is a serial spawner (several spawns per year) and reproduces in spring. The spawning area stretches to the south of 47ºN latitude and to the east of 5ºW longitude. Most spawning takes place over the continental shelf in areas under the influence of the river plumes of the Gironde, Adour and Cantabrian rivers (Motos et al., 1996). As spring and summer progress the anchovy migrates from the interior of the Bay of Biscay towards the north along the French coast and towards the east through the Cantabrian Sea. It spends the autumn in these areas and in winter migrates in the opposite direction towards the southeast of the Bay of Biscay (Prouzet et al., 1994).



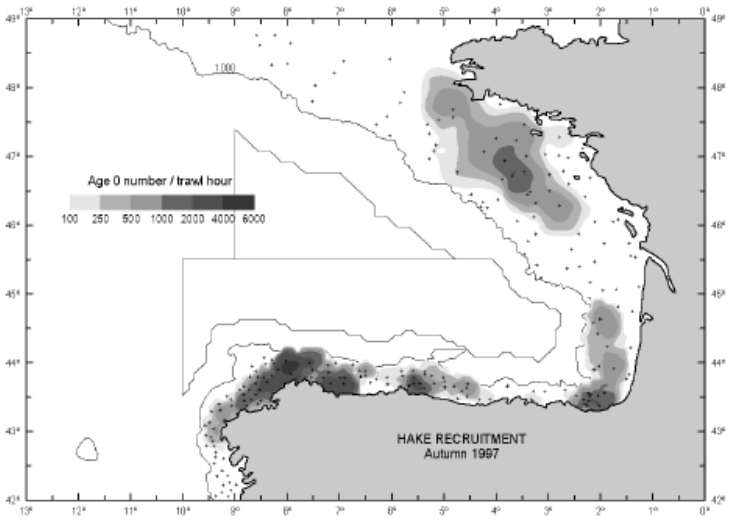
Spawning grounds of anchovy in the Bay of Biscay (from Motos et al., 1996).

European hake (*Merluccius merluccius*) is both commercially and ecologically one of the most important species in the Bay of Biscay. Hake spawns in winter, with the adults concentrating in canyons and rocky grounds of the shelf break area. Areas of high concentration of hake recruits have been located between 80 to 200 m depth and over predominantly muddy bottoms. The area includes one permanent nursery area of hake in Peñas Cape and another area that only appears in some years closed to the Capbreton Canyon. Important hake recruitment processes lead to well-defined patches of juveniles, found in localized areas of the continental shelf. These concentrations that remain generally stable in spatial location, are determinant by hydrographic mesoscale structures and Poleward Current (Sánchez and Gil, 2000).

F. Sánchez and J. Gil



Main nursery areas of hake in the last decade (based in Sánchez, 1995). Shaded in a diagonal cross for the main areas appearing all years and shaded in a forward slash for the concentrations which only appear in some years (Sánchez and Gil, 2000).



Main nurseries of European hake in the Bay of Biscay in autumn 1997. Data from standardized bottom trawl surveys carried out during the SESITS international project (SESITS, 2000) (FROM Lavín et al., 2004).

- *The EBSA proposal is also a seasonal migratory pathway for large migratory pelagic species*

These are large in size and strong swimmers, which enables them to perform long migrations. Some families of the sub-order Scombroidae (tuna-like fishes) and sharks from the Carchariniforms and Lamniforms typically belong to this group. Tuna like fishes are serial spawners whose spawning area is usually located in tropical and subtropical waters. In tropical areas food is relatively scarce and so tuna fishes have to actively search for food patches. This means that their life is nomadic, based on continuous long displacements (Helfman et al., 1997). In the Bay of Biscay the most characteristic species are albacore (*Thunnus alalunga*) and bluefin tuna (*Thunnus thynnus*). Other tuna and tuna-like fishes such as bigeye (*Thunnus obesus*), Atlantic bonito (*Sarda sarda*), skipjack tuna (*Euthynnus pelamis*) and swordfish (*Xiphias gladius*) may also be present (Lavín et al., 2004).

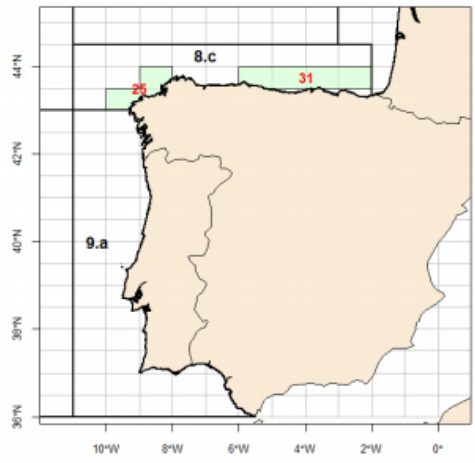
The presence of bluefin tuna and albacore in the Bay of Biscay is seasonal. They normally appear at the beginning of summer and disappear at the beginning of autumn, following a trophic mnigration in search of food. Large predatory sharks have internal fertilization and females etiher lay eggs or nourissh embryos internally for several months befores gicing birth (Helfman et al., 1997). Their populations are very vulnerable to fishing pressure. In the Bay of Biscay the common epipelagic sharks are blue shark (*Priona glauca*), shortfin mako (*Isurus oxyrrinchus*), and porbeagle (*Lamna nasus*). They predate on a wide range of pelagic and demersal fishes. The largest shark in the Bay of Biscay is the basking shark (*Cetorhinus maximuis*), with a length of more than 9 m.

- *The EBSA proposal includes soft bottoms essential for the biology of commercial benthic species.*

This is the case, for example, of the Norway lobster (*Nephrops norvegicus*). This species is distributed from Iceland to Portugal and the Mediterranean and are limited to areas of muddy habitat at depths of 15-800 m. The spatial extent of suitable sediment defines the species distribution and the stock boundaries. *Nephrops* are sedentary and rather common on muddy grounds, in which they dig their burrows where they spend most of their time. In the Bay of Biscay, three populations are distinguished, one on the French shelf and two in the Cantabrian Sea. Females spawn from April to August and carry eggs under their tails (“berried” females) until they hatch about 7 months later. The larvae develop in the plankton for one month before settling to the seabed. When berried, females

rarely come out of the burrow, and are therefore naturally protected from trawlers. Nephrops are mainly nocturnal and feed on detritus, crustaceans and worms.

ICES provides catch advice for *Nephrops* stocks on the basis of functional units (FUs) of which there are one within the EBSA proposal FU 31: Cantabrian Sea. Demersal otter trawlers from Spain and France target *Nephrops*. Landings of *Nephrops* have gradually declined in this division since the late-1980s and the stock size indicator has decreased since the mid-1970s to a record low in 2013. Management of this stock is by total allowable catch (TAC) for the area.



Functional Units (FUs) of Neprhos norvegicus in the Cantabrian Sea (ICES)

Feature condition and future outlook of the proposed area
(Description of the current condition of the area – is this static, declining, improving, what are the particular vulnerabilities? Any planned research/programmes/investigations?)

The main main human activities that cause environmental degradation in the Bay of Biscay are:

- Fishing activities: the main fishing gears used in the area are bottoms trawling, fishing lines and gill nets. Trawlers operate on the muddy bottoms of the shelf and produce serious negative impacts over certain habitat types. Long-liners also operate operate mainly at the bottom but of the shelf-break whereas gill nets are used on rocky grounds near the coast and shelf-break. Additionally to resources overexploitation, fishing activities have an impact on a great diversity of species such as sea-turtles, cetaceans and seabirds (longline bycatch).

Bay of Biscay fisheries have had a strong impact on the bottom communities and have induced changes in their structure (Sánchez and Olaso, 2004; Serrano et al., 2006). This impact has been mainly direct (fishing mortality on target species and bycatch) and indirect by means of modifications to the habitat through erosion of the sediment and damage to the benthos by different elements of the gears.

- Water pollution: the main sources of pollution are ships and cities located in the coast (mostly in summer when the intensity of tourism in some coastal increase)

- Global warming: this phenomenon seems to have led to an increase in the presence of temperate water fish species in the Bay of Biscay (e.g., among pelagic fishes *Megalops atlanticus*, *Seriola rivoliana*) over the last twenty years (Quéro et al., 1998; Stebbing et al., 2002).

These changes related to global warming tend to operate slowly but have severe long-term consequences for the ecology of the ecosystem. They can affect: i) the behavior of species (e.g. changes in migratory routes), ii) their recruitment (due to changes in the environmental conditions in

the spawning and/or recruitment areas) and iii) the spatial distribution of species (since more meridional species can expand their area of distribution). In fact, this increase in temperature is likely to be responsible for the appearance of tropical fish species in the southeast shelf of the Bay of Biscay.

- Shipping and oil transport: The Bay of Biscay is located on the main route of supertankers transporting oil from the Middle East and Africa to EU harbors. More than 70% of the total oil consumed in the EU is moved by shipping through the Finisterre pass directly towards the English Channel and then to the final destination in different European harbors. In recent years several oil spills have occurred in the Bay of Biscay, for example 5 supertankers carrying more than 50 000 t have been wrecked since 1976, and the last 3 in an interval of just a decade (1992, Aegean Sea; 1999, Erika; 2002, Prestige), which has made this region the most severely affected by this kind of accident in the world (Lavín et al., 2004).

Conversely, some actions to protect the area and to ensure the conservation of its biodiversity are being carried out, and two specific areas within this EBSA proposal have been protected in accordance with international and Spanish regulations and conventions:

(1) The El Cachucho- Le Danois Bank: this off-shore Marine Protected Area (MPA) covers an extensive offshore bank and seamount with surrounding slopes and a complex system of channels and canyons that covers 234 000 ha. Depths within the area vary from 500 – 4000 m – an amazing diverse biological hotspot. The high biodiversity found in the area (Sánchez et al., 2008; Cristobo et al., 2009; Altuna, 2013), but moreover, the presence in the area of "1170 Reef" habitats that are included in Annex I of the Habitats Directive of the European Union (Council Directive 92/43/EEC), were the main reason for the declaration of the area as a MPA (Sánchez et al., 2017; Rodríguez-Basalo et al., 2019).

El Cachucho MPA has been subject in recent years of numerous studies and surveys to evaluate the condition of the habitats (García-Alegre et al., 2014; Sánchez et al., 2017). A remarkably large number of species has been recently discovered there as new to science, and more are in the process of description (Guerra-García et al., 2008; Frutos and Sorbe, 2010; Frutos et al., 2011).

Bottom trawling and fishing with static gear, including bottom set gillnets and bottom set longlines are prohibited.

(2) The Avilés' submarine system of canyons: this Site of Community Importance (Natura 2000 network) comprises three great submarine canyons (Avilés, El Corbiro and La Gaviera), a marginal platform (Canto Nuevo) and a tall structural rocky mass (Agudo de Fuera). The Avilés Canyon begins at a depth of 128 m and is approximately 75 km in length, with a V-shapes profile and a primarily sedimentary bottom. The Corbiro Canyon is 23 km in length and also has a V-shaped profile and a sedimentary bottom, while the La Gaviera Canyon has u-shaped profile with one sedimentary and one rocky flank, with features of a hanging canyon. Along its axis there are several rocky escarpments (Gomez-Ballesteros et al., 2014).

The submarine canyons of the Avilés system act as a collector of terrigenous material deposited by the rivers and play an important role as a transport mechanism for the sediment and organic matter from the continental shelf to the deep areas of the Bay of Biscay abyssal basin. Therefore this area is considered as a highly productive biological system. Biodiversity in the area is very high and more than 1300 species have been catalogued to date on the seabed (excluding the pelagic organisms that occupy the water column). Some of these species such as corals, sponges and sharks are particularly vulnerable, and are included in various protection regulations.

The management plan of the area is being development in the framework of the INTEMARES project.

A third area in currently under consideration and therefore, being studied (under the coverage of the INTEMARES project): The Capbretón Canyon. This submarine valley located on the continental shelf

and slope of the Bay of Biscay is divided in two zones, the northern Aquitanian continental shelf and the southern Cantabrian shelf.

A future proposal of protection will be develop to cover, at least, the Spanish waters.

Apart from conservation projects, every autumn the Instituto Español de Oceanografía (IEO) carry out a bottom trawling survey on the Northern Spanish Shelf named DEMERSALES. This survey aims to provide data for the assessment of commercial fish species and benthic ecosystems on the Galician and Cantabrian shelf (ICES, 2010). This survey is part of an international effort to monitor marine ecosystems and is coordinated by the International Bottom Trawling Surveys (IBTS) working group of the International Council for the Exploration of the Sea (ICES).

Assessment of the area against CBD EBSA Criteria

(Discuss the area in relation to each of the CBD criteria and relate the best available science. Note that a proposed area for EBSA description may qualify on the basis of one or more of the criteria, and that the polygons of the EBSA need not be defined with exact precision. And modeling may be used to estimate the presence of EBSA attributes. Please note where there are significant information gaps)

CBD EBSA Criteria (Annex I to decision IX/20)	**Description** (Annex I to decision IX/20)	**Ranking of criterion relevance** (please mark one column with an X)			
		No information	**Low**	**Medium**	**High**
Uniqueness or rarity	Area contains either (i) unique ("the only one of its kind"), rare (occurs only in few locations) or endemic species, populations or communities, and/or (ii) unique, rare or distinct, habitats or ecosystems; and/or (iii) unique or unusual geomorphological or oceanographic features.				X
Explanation for ranking (must be accompanied by relevant sources of scientific articles, reports or documents) The current information on this criteria is still low. More scientific research is need to cover the different systems and habitats present in the area (e.g. communities associated with the deepest habitats, communities associated with pockmark in the western zone, etc.) and improve the knowledge of species. In fact, many samples processing and species' identification from some seamounts and canyons are still pending and probably new species to science will be found, since this features support large pools of undiscovered species. However, the Bay of Biscay is a border area between different biogeographic regions where water masses of different origin (Atlantic and Mediterranean) confluence. Additionally, canyons and submarine seamounts are present along the area. These features (border areas, canyons and features) are increasingly recognized as being high in endemic species.					
Special importance for life-history stages of species	Areas that are required for a population to survive and thrive.				X
Explanation for ranking (must be accompanied by relevant sources of scientific articles, reports or documents) The EBSA proposal is an important area for cetaceans, a seasonal migratory pathway for large migratory pelagic species (e.g tuna species) and it includes spawning grounds for several species of commercial interest (e.g. anchovy, hake, Norway lobster). Additionally, habitat-forming species that characterized benthic habitats and offer substrate and refuge to other species spend their entire life cycle within the area. See the section "Feature description of the proposed area" for further explanation.					
Importance for threatened, endangered or declining species and/or habitats	Area containing habitat for the survival and recovery of endangered, threatened, declining species or area with significant assemblages of such species.				X
Explanation for ranking (must be accompanied by relevant sources of scientific articles, reports or documents) Habitats and species considered as 'threatened, endangered or declining' based on different regulations and conventions are present in the EBSA proposed. See the section "Feature description of the proposed area" for further explanation.					
Vulnerability, fragility, sensitivity, or slow recovery	Areas that contain a relatively high proportion of sensitive habitats, biotopes or species that are functionally fragile (highly susceptible to degradation or depletion by human activity or by natural events) or with slow recovery.				X
Explanation for ranking (must be accompanied by relevant sources of scientific articles, reports or documents)					

Changes in the biodiversity of soft bottoms in this area have been associated with trawling. Trawling disturbance reduced relative biomass of sensitive species by 31% across the study area (González-Irusta et al., 2018). Thus authors have classified benthic species according to their sensitivity to trawling across a trawling disturbance gradient (swept area) and have modeled the impact of trawling disturbance on sensitive species in the Cantabrian shelf. According to that, the relative biomass of sensitive species has declined as a consequence of trawling impacts in most of the soft bottoms of the northern Spanish Shelf, from 100m (below which trawling is forbidden) to 700 m, with a mean value of a 32% reduction in the relative biomass of sensitive species.

On rocky substrates, the number of sensitive species is probably much higher, since many of the habitat-forming species are sessile and have big sizes and long life cycles (coral reefs, gorgonian forest, sponge grounds, etc.). In the same way, other species with a reproduction characterized by limited offspring such as sharks or cetaceans, makes their populations very vulnerable to anthropogenic impacts.

Biological productivity	Area containing species, populations or communities with comparatively higher natural biological productivity.				X

Explanation for ranking (must be accompanied by relevant sources of scientific articles, reports or documents)

The complex hydrology due to the interaction between waters formed in the Atlantic with water of Mediterranean origin and the role of geomorphological canyons and seamounts as a mechanism to transport organic matter and sediment form the continental shelf to the deep areas of the Bay of Biscay abyssal basin, turn this zone into a highly productive biological system.

Coastal upwelling events occur mainly on the Spanish continental margin. These are produced by NE winds prevailing from late May to September. Upwelling events are highly variable in intensity and frequency from year to year, but in general they are more common and intense to the west of Cape Peñas and act as a mechanism generating spatial variability between the western and eastern parts of the Cantabrian Sea and between the coastal mixed waters and the neighboring oceanic stratified areas (Lavín et al., 2004).

Biological diversity	Area contains comparatively higher diversity of ecosystems, habitats, communities, or species, or has higher genetic diversity.				X

Explanation for ranking (must be accompanied by relevant sources of scientific articles, reports or documents)

Overall, high biodiversity indices in the Bay of Biscay exist in comparison with adjacent areas (Quéro et al., 1989; Sánchez et al., 2002), since a complex hydrodynamism characterize the area due to the fact that typical temperate-water species from the south occur together with those of northern origin.

Additionally, the structurally highly complex area includes a great diversity of geomorphological features (submarine canyons, seamounts, banks and mounds, pockmarks, slope affected by smaller rock outcrops, etc) and hence, a great diversity of benthic niches available.

See the section "Feature description of the proposed area" for further explanation.

Naturalness	Area with a comparatively higher degree of naturalness as a result of the lack of or low level of human-induced disturbance or degradation.		X		

Explanation for ranking (must be accompanied by relevant sources of scientific articles, reports or documents)

Fisheries, changes related to global warming and several oil spills that have occurred in the Bay of Biscay, have had a strong impact on the bottom communities and have induced changes in their structure. Among these impacts are:

- Fishing mortality on target species and bycatch
- Habitat's modifications through erosion of the sediment and damage to the benthos by different elements of the gears.
- Appearance of tropical fish species (since more meridional species can expand their area of distribution)
- Changes in migratory routes

See the section " Feature condition and future outlook of the proposed area " for further explanation.

Sharing experiences and information applying other criteria (Optional)

Other Criteria	Description	Ranking of criterion relevance (please mark one column with an X)			
		Don't Know	Low	Medium	High
Add relevant criteria					
Explanation for ranking (must be accompanied by relevant sources of scientific articles, reports or documents)					

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(e.g. relevant documents and publications, including URL where available; relevant data sets, including where these are located; information pertaining to other relevant material, models, etc.)

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Maps and Figures

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