Gironde Estuary and Sea of Pertuis Marine Natural Park

Vocation

Knowledge and protection of the marine environment; sustainable development of maritime activities

Introduction to the area

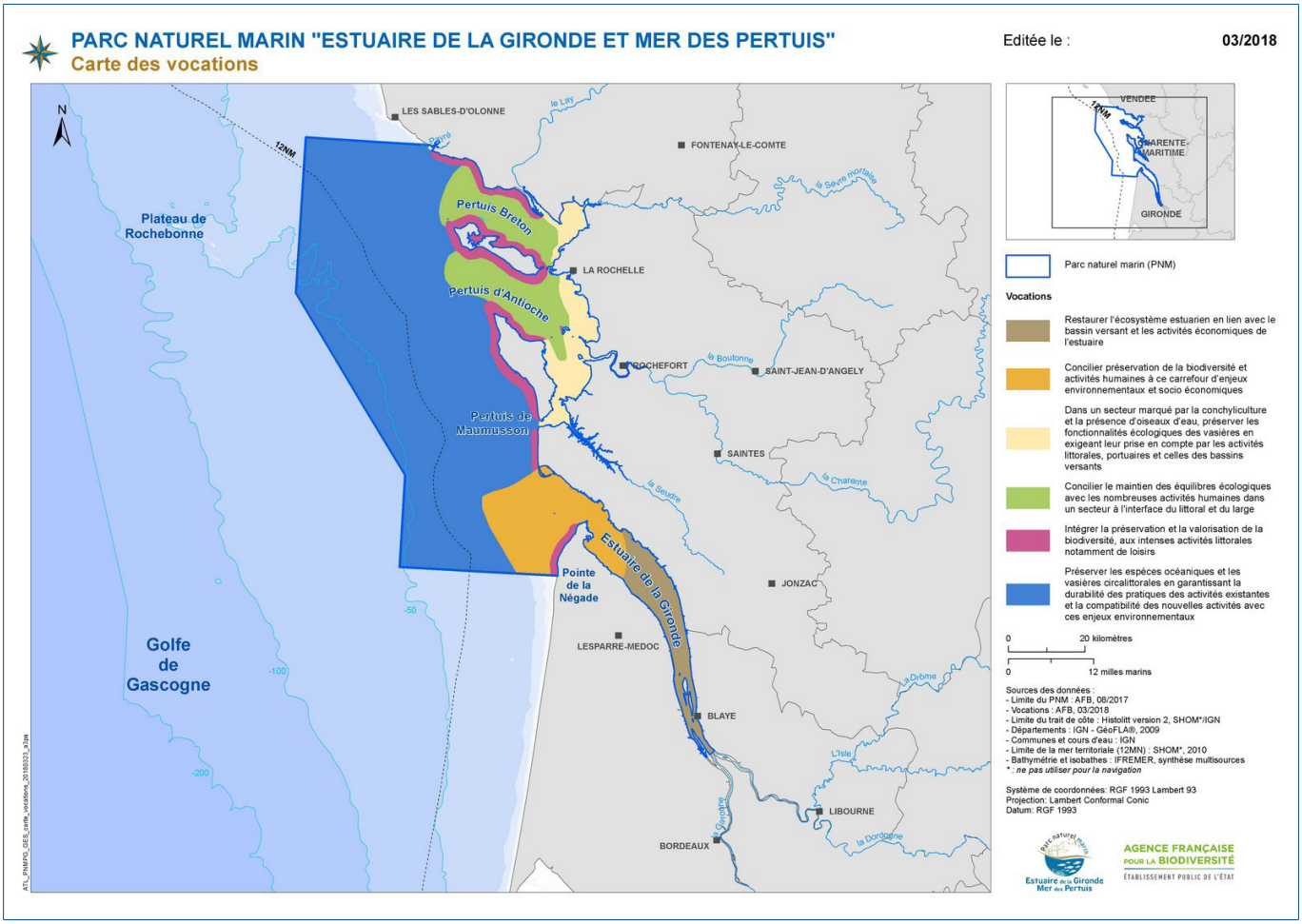
A marine natural park consists of marine protected areas which purpose is to contribute to the knowledge of marine heritage and the protection and sustainable development of the marine environment, as defined by the Environment Code. The Gironde Estuary and Sea of Pertuis Marine Natural Park was created in 2015 and, with a surface area of 6,500 km² is the 7th largest of 9 marine nature parks in France. Its management plan was validated by the Management Board in April 2018 and approved by the Management Board of the French Agency for Biodiversity on 26 June 2018. This document identifies its ambitious objectives for the next 15 years for a large number of issues relating to natural resources, marine activities and raising the awareness of its users.

The act that created the marine nature park sets out 6 management principles:

1. Improve and share scientific and empirical knowledge of marine environments, species and uses.
2. Preserve and restore environments and ecological functions through sustainability balancing biodiversity and socio-economic activities.
3. Reinforce “land and sea” links through partnerships between relevant actors with a view to preserving the quality and quantity of water.
4. Promote and develop (coastal and estuary) commercial fishing activities, aquaculture and shellfish farming, while respecting marine ecosystems.
5. Promote and develop port and industrial and maritime activities alongside leisure activities, while respecting marine ecosystems.
6. Disseminate, as widely as possible, a passion for the sea and involve everyone in preserving the Marine and coastal environment.

Map | Gironde Estuary and Sea of Pertuis Marine Natural Park

The Nature Park's management plan was validated by the Management Board and approved by the Management Board of the French Agency for Biodiversity. This document identifies strategic objectives for the area enabling it to implement management approaches over a 15-year period



Find out more

Gironde Estuary and Sea of Pertuis Marine Natural Park management plan

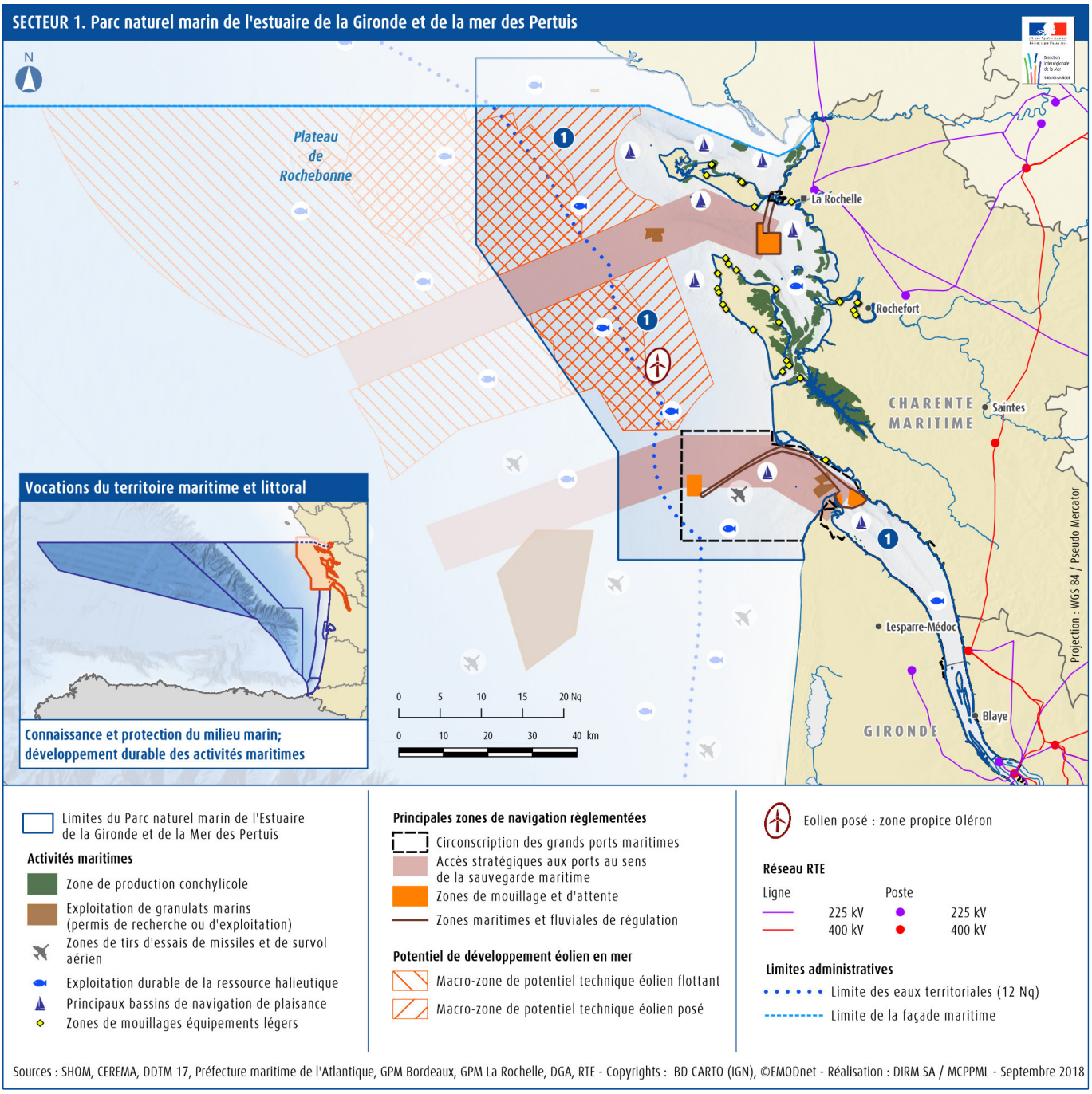
Activities in the area

The area is characterized by the presence of numerous commercial and leisure activities: tourism (predominantly seasonal), aquaculture (Les Pertuis sector identified as the leading area in Europe producing creuse oysters), coastal fisheries, recreation, extraction of gravels, etc. Industry, agriculture, livestock farming and tourism except important environmental pressure through flows from the watersheds of the following rivers: Dordogne, Garonne, Loire, Charente, Sèvre Niortaise, Lay and Seudre.

The area is also characterized by intense marine traffic (commercial, recreational and passenger traffic) between the different departments. The activity of the major sea port of Bordeaux creates heavy maritime traffic requiring continuous dredging of the navigation channel to enable access. The major sea

port of La Rochelle and the commercial port of Rochefort-Tonnay Charente have historically been poles of economic development for commerce and industry. As far as electricity production is concerned, a power plant is located in the estuary and a potential site for wind turbines has been identified off the coast of Oléron.

Map | Human Activity



The area is, nonetheless, very prone to natural hazards such as coastal and other floods. National and regional risk-management plans have been implemented and should be pursued in order to protect the population and coastal activities.

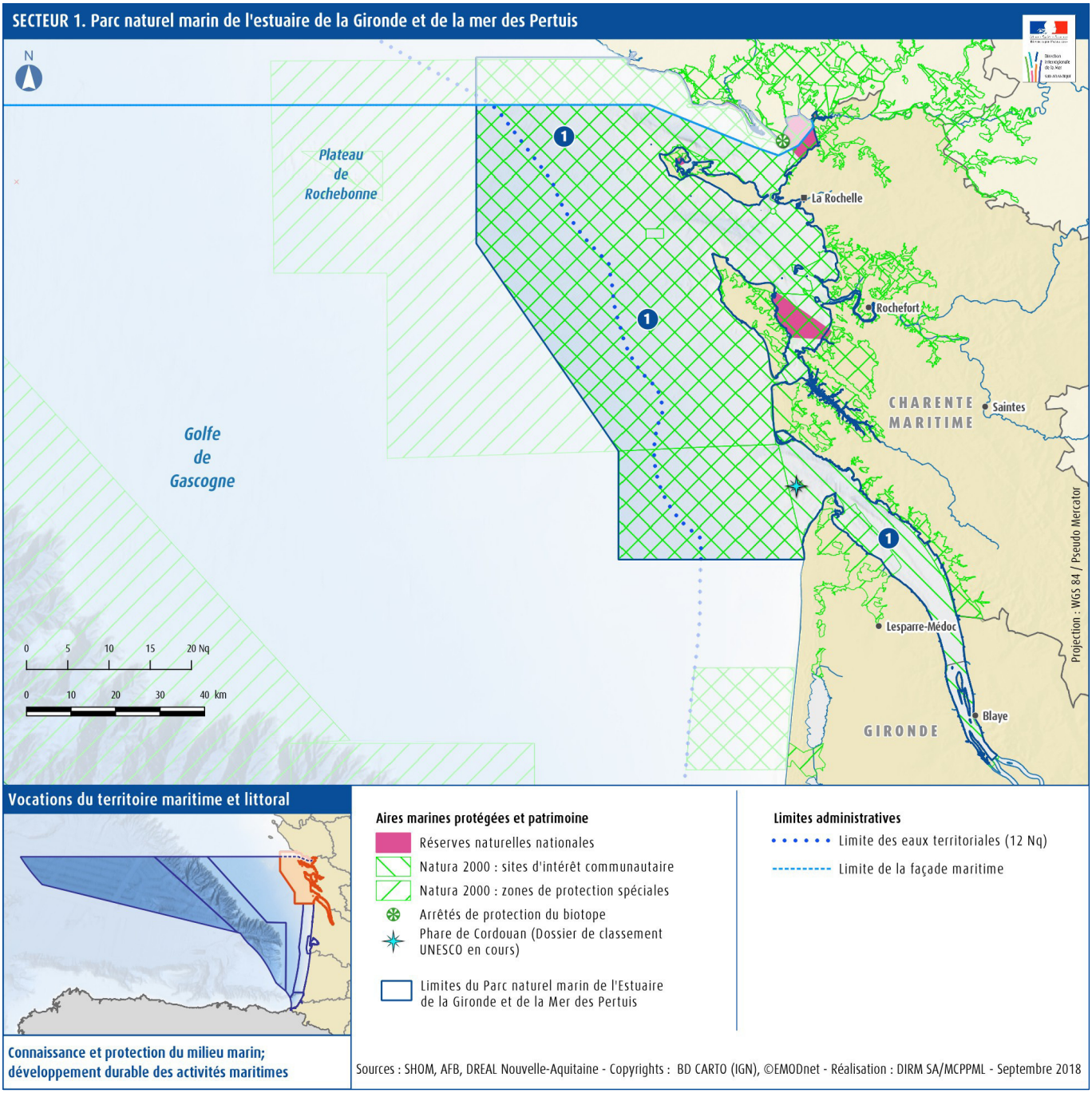
The area boasts a rich cultural heritage as can be seen from its many listed and classified sites. In this connection, given its exceptional value, an advanced proposal to have Cordouan lighthouse listed as a UNESCO World Heritage Site is currently under consideration.

Specific ecological features identified

The area is characterized by the influence of the Gironde plume waters and flows of freshwater and nutrients from the estuaries of the rivers Seudre, Charente, Lay and the Sèvre Niortaise. Recent modelling shows that the influence of rivers external to the Pertuis Charentais (Gironde and Loire in particular account for 40% of the freshwater flows to the Pertuis Charentais. The area as a whole is a zone with great abundance and diversity of plankton communities.

Its hydrologic conditions and geomorphology make it particularly important for fishing. At the west of the sector, there is a very productive west Gironde mudflat resulting from the hydrodynamic gradient of the plume waters.

Map | Environment and Heritage



The effects of the swell, tides and wind have led to the formation of different types of dune and channels in the shape of corridors and pathways composed of coarse-grained soft sediment. This diverse seabed is home to remarkable habitats, such as intertidal and subtidal mudflats, sabellaraia reefs, eelgrass communities, rocky foreshores, subtidal reefs, etc.

The estuary area is a major zone for all the diadromous fish (a unique spawning site for the European sturgeon) whose presence indicates the good status of the body of water. It is very sensitive to variations in the physical and chemical properties of the water from marked freshwater deficits on a seasonal basis. It is also important to note the presence of turbidity maximums (Loire and Charente in particular). In the Gironde, the estuary is under the influence of the tide from beyond Bordeaux. Reductions in species density have given rise to a sharp decrease in commercial fishing.

The Gironde estuary is surrounded by dense winegrowing areas. The Pertuis Charentais coastline is made up of marshes, wet grassland (livestock farming) and agricultural plots (vines and cereals).

The coastal areas of the mainland and islands also have large areas of mudflats and salt meadows which are important for birds using the foreshore and the high seas are very good for groups of sea and coastal birds from the Nordic countries in the non-breeding season; Aiguillon Bay, Moëze-Oléron, Ile de Ré and Ile d'Oléron are important on an international scale. This large area constitutes a highly important outstanding functional whole for sea and coastal birds on the Atlantic coastline.

1. Ecological issues present in the sector in question

Ecological issues category			Qualification			
			MAJOR	HIGH	AVERAGE	LOW
Hydrographical conditions, pelagic habitats and food webs	**Land-sea interface:**	Pertuis d'Antioche, Pertuis de Maumusson, Pertuis Breton, Gironde plume waters, particular abundance and diversity of related plankton				
Benthic habitats and geomorphological structures	**Biogenic habitats:**	sabellaraia				
		dwarf eelgrass, flat oysters, Atlantic salt meadows				
		Maerl beds				
	Rocky habitats	Subtidal and intertidal reefs				
	Sedimentary habitats:	Subtidal mud, intertidal mud flats				
		Subtidal fine sands, subtidal medium sands,				
		Subtidal muddy mixed sediments				
		Intertidal sediments				
Functional fishing areas	**Spawning grounds:**	Meagre, cuttlefish, sole, sardine, sprat, jack mackerel, bluntnose sixgill shark, seabass, pouting, anchovy				
	Nurseries:	Wedge sole, seabass, meagre, hake, whiting, sole, gilthead bream, sardine, sprat, red mullet, river herring, eel, crevette grise, bluntnose sixgill shark, plaice, turbot, white seabream, cuttlefish, pouting, horse mackerel, mackerel, anchovy, thinlip mullet				
	Diadromous species:	Sturgeon				
		Alosa agone, eel, Allis shad, lamprey, salmon				
	Elasmobranchs:	Bramble shark (historically important), undulate ray, smalleyed ray, thornback ray				
Functional avifauna areas	**Waders nesting and feeding grounds:**	Black-winged stilt				
		Pied avocet				
		Kentish plover				
	Seabird colonies and feeding grounds	Common tern				
	Wintering grounds for waterfowl:	Pied avocet, bar- and black-tailed godwit, northern shoveller, northern pintail, grey plover, common shelduck, dunlin, red knot, Brent goose, common ringed plover, Eurasian spoonbill, ruddy turnstone, Eurasian curlew				
	Maximum-density and functionally identified zones:	Density all species, Balearic shearwater, common scoter (winter), common loon (winter)				

No classification of the issue yet	**Characteristic hydrological structure**	autumnal warm-water tongue	*Not classified at this stage*
	Localized populations of benthic invertebrates:	Nephrops, scallop	*Not classified at this stage*
	Crosscutting issues:	Delphinidae and porpoises at depths of between 50 and 100 m	*Not classified at this stage*

2. Interactions between activities and the marine environment

The summary table below is taken from data from the activity/pressure matrix carried out by the AFB. Significant contributions by activities to pressure are distinguished from minor contributions by the following codes: significant contribution/minor contribution.

Activities	Pressures
Agriculture	**Physical pressures**: inputs of waste **Chemical pressures**: inputs of nutrients, inputs of hazardous substances, inputs of organic matter
Aquaculture	**Physical pressures:** loss and physical disturbance of the seabed, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures** : introduction or propagation of non-native species, disturbance of species
Mineral extraction	**Physical pressures:** loss and physical disturbance of the seabed, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species, disturbance of species
Industry	**Physical pressures**: inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of nutrients, inputs of organic matter, inputs of hazardous substances
Recreational fishing	Physical pressures: physical disturbance of the seabed, inputs of waste **Biological pressures** :introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species,, disturbance of species
Commercial fishing	**Physical pressures**: physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions **Biological pressures**: species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Electricity production including potential future activity	**Physical pressures**: loss and physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions **Biological pressures:** anthropogenic sound inputs, disturbance of species, introduction or propagation of non-native species, **Chemical pressures:** inputs of hazardous substances
Tourism and leisure	**Physical pressures:** physical disturbance of the seabed,inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, disturbance of species, introduction of microbial pathogens, introduction or propagation of non-native species

Sea transport and ports	**Physical pressures:** loss and physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of nutrients, inputs of hazardous substances, inputs of organic matter **Biological pressures:** anthropogenic sound inputs, species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Maritime works	**Physical pressures:** loss and physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** disturbance of species, anthropogenic sound inputs, introduction or propagation of non-native species

3. Trends and prospects for development

Activities	Trends
Agriculture	Sector reliant on national and international circumstances
Aquaculture	Disputes between boaters, oyster farmers and environmental protection associations over the development of offshore aquaculture Monoculture sector (animal health risks) subject to impacts on the water quality of the watersheds (population increase) and sanitary quality. In the estuary: potential development of aquaculture due to the expected reduction in cadmium load Large availability of space downstream
Electricity production	Future of the Blayais Nuclear Power Plant Potential development of MREs: tidal power potential in the estuary and wind-power potential off the coast of Oleron (potentially an emerging activity)
Mineral extraction	Sector with gravel-extraction potential Activity constrained by the need to respect habitats and endangered species, the future of which depends on the issue of administrative permits
Industry	Changes linked to the development of MREs and the maintenance of port traffic, development of recreational naval construction
Recreational fishing	Diversified sector, whose regulatory and best-practice frameworks are currently changing
Commercial fishing	Professions subject to resource-access conditions (particularly to diadromous species, and restricted access to the maritime space Profession subject to constraints related to the development of MREs
Risks	Addressing flood, coastal flood and erosion risks. Sector subject to impacts on the water quality of the watersheds (population increase and sanitary quality of bathing waters)
Tourism and leisure	Foreseeable increase (Médoc development and project to gain UNESCO listing for Cordouan)
Sea transport and ports	Changes related to the development of MREs subject to developments in port strategies. Development linked to the depth of the channel Development of riverboats Heavy dependence of the Maritime Port of Bordeaux on hydrocarbons

	Heavy dependence of the Maritime Port of La Rochelle on raw materials

The development of the MRE sector requires the establishment of detailed planning and consultation with its different users (particularly fishers and recreational users) in strict observance of environmental issues facing the area with a view to achieving a zoning that takes account of the issues facing each activity.

4. Proposed strategic objectives

Strategic socioeconomic objectives
1.1. Adapt and modernize the production tools of commercial fishing on land as on sea to better add value to products and improve working conditions for mariners
1.2. Strength and management of fishing resources and the environmental dimension to achieve sustainable commercial fishing activity
2.1. Improve water management and put aquaculture activity on a sustainable footing
2.2. Pursue the transition towards environmentally friendly aquaculture
2.3. Promote the activity to maintain the social and economic fabric
3.1. Ensure the competitiveness and complementarity of ports, improve access and promote modal shift
4.1. Put the competitiveness of the naval and nautical industries on a sustainable footing and adapt fleets to the issues raised by the environmental transition
5.1. Support the upswing in the MRE sector by adapted planning
5.2. Support R&D in this area to “host” the deployment of these technologies
6.1. Include sediment extraction in a sustainable development approach addressing the needs of sectors and territories throughout the Bay of Biscay
7.1. Optimize the utilization of space in recreational ports and mooring areas respecting water quality and marine ecosystems
7.2. Maintain the attractiveness of sports sites to enable activities to cohabit harmoniously with their environment
8.1. Boost the tourist potential of an environmentally friendly coastline respectful of its accommodation capacity
9.1. Take account of natural risks and climate change in planning for the most resilient coastline areas
9.2. A quality of coastal water sufficient to guarantee all uses
10.1. Reduce and contain pollution risks
10.2. Guarantee safe navigation conditions
11.1. Protect the heritage and attractive locations
11.2. Promote the heritage and landscape potential of the coastline

Strategic environmental objectives
1. Limit or avoid anthropogenic physical disturbances affecting the good environmental status of coastal benthic habitats, the continental shelf, and deep-sea habitats, particularly characteristic habitats
2. Reduce or avoid pressures causing direct fatalities and disturbance of marine mammals and turtles
3. Reduce or avoid pressures causing direct fatalities, disturbance and loss of functional habitats important for the life-cycle of seabirds and foreshores, in particular for vulnerable and endangered species
4. Limit pressures on vulnerable or endangered species of fish or promote their restoration and limit pressure on major fishing areas
5. Limit the risks from introducing and disseminating non-native species through human activity
6. Promote the exploitation of fish, mollusc and crustacean stocks at maximum sustainable yield
7. Promote preserving in the environment the trophic resources necessary for large predators
8. Reduce excessive nutrient inputs and their transfer in the marine environment
9. Avoid losses and physical disturbance to marine habitats linked to maritime and coastal activities
10. Limit modifications (by any human activity) to hydrographical conditions which adversely affect the smooth

running of the ecosystem

11. Reduce or remove chemical contaminant input to the marine environment, whether from land or sea-based sources, chronic or accidental

12. Reduce microbiological, chemical and phycotoxic contamination which degrades the hygienic quality of seafood, aquaculture and fishing production areas and bathing areas

13. Reduce inputs into and presence of land-based waste in the sea and on the coast

14. Limit sound emissions in the marine environment to levels which do not impact on marine mammals

5. Requirements or recommendations

Knowledge of cumulative effect of activities over space and time should be capitalized and made available to the public, institutions of governance and actors in research and the environment.

- **Non-impact requirements for certain ecosystem components:**
  - The systematic implementation of the sequence avoid – reduce – compensate at sea;
  - Taking account of specific zonings (at the date of approval of this document): cf. "human activities, environment and heritage" map for area 1.
- **Conditions for the sequence of events:**
  - Any activity developed which is subject to environmental assessment must first be subject to a study specifically designed on the basis of the nature of the ecological issues arising in area 1;
  - Its compatibility with national defence activities, other activities and infrastructure (particularly cables) and with the good management of the public natural maritime domain should be demonstrated by the project leader;
  - Observance of the rules of coexistence of users also advocated by the marine nature park management plan and the departmental public natural maritime domain management strategy;
  - Existing maritime planning related to human activities should also be taken into account.

6. Relevant planning documents (as at the date of approval of the maritime coastline strategy)

■ Documents requiring compatibility with the SBSD:

- Marine Nature Park Management Plan
- Regional Marine Aquaculture Development Master Plan

■ Documents requiring compatibility with the SBSD:

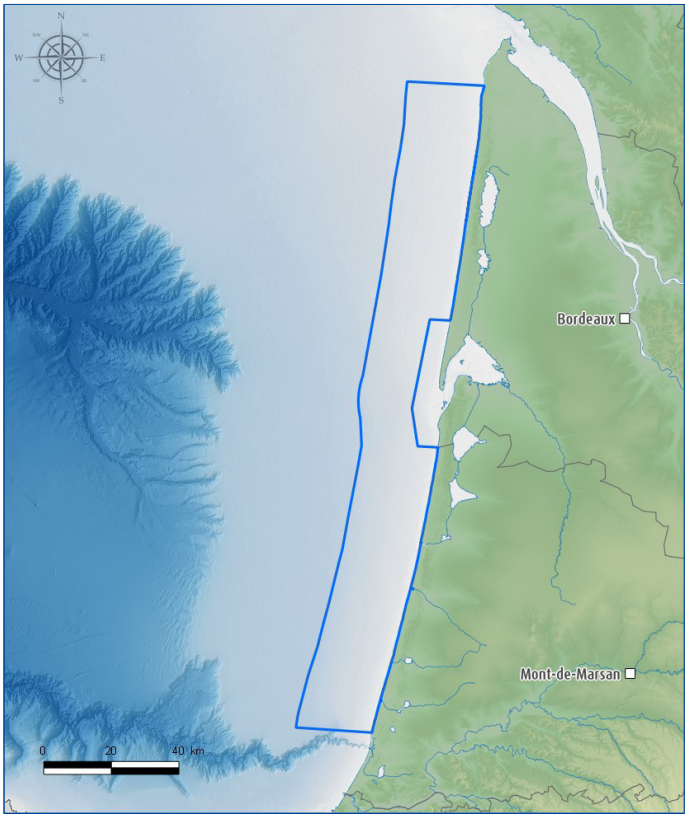
- Coastal Conservatory Management Strategy
- Flood Risk Management Plan
- Maritime Port of La Rochelle Strategic Project
- Maritime Port of Bordeaux Strategic Project
- Regional Economic Development, Innovation and Internationalization Master Plan
- Regional Planning, Sustainable Development and Equality between Territories (draft) Master Plan
- “Gironde Estuary”, “Seudre”, and “Charente” (AG) and SAGEs “Sèvre Niortaise – Marais Poitevin” Planning and Water Management Master Plans
- Proposed UNESCO listing of Cordouan Lighthouse
- Territorial Cohesion Plan (SCoT):
    - Greater La Rochelle SCoT (approved)
    - Pays des Vals de Saintonge SCoT (approved)
    - Pays Rochefortais SCoT (approved)
    - Pays d’Aunis SCoT (approved)
    - Pointe Médoc SCoT (approved)
    - Metropolitan Area of Bordeaux SCoT (approved)
    - Royan Atlantique Agglomeration SCoT (under review)
    - Pays Marennes d’Oléron SCoT (under review)
    - Pays de la Saintonge Romane SCoT (under review)
    - Médoc 2033 SCoT (under development)
    - Haute Gironde SCoT (under development)
    - Haute Saintonge SCoT (PI support for SCoT created)
- National Nature Reserve Management Plan:
    - Aiguillon Bay
    - Lilleau-des-Niges
    - Moëze-Oléron
- Adour-Garonne Water Development and Management Master Plan
- Adour-Garonne Water Development and Management Master Plan

Area 2

Aquitaine sandy coast

Vocation

Cohabiting maritime and coastal uses and activities, subject to reducing combined pressures, achieving good status in the marine environment and allowing for the changing coastline



Introduction to the area

Activities in the area

This area is characterized by seaside tourism concentrated around points of access to coastal beaches. The region is also renowned for its surfing. Commercial fishing is mainly carried out on the very productive coastal strip.

Defence activities are also carried out on the coastline (missile launch testing centre).

This area is also subject to coastal risks including a receding coastline which is very marked in the area near the Gironde river. Changes to the dynamics of the dune system should also be taken into account.

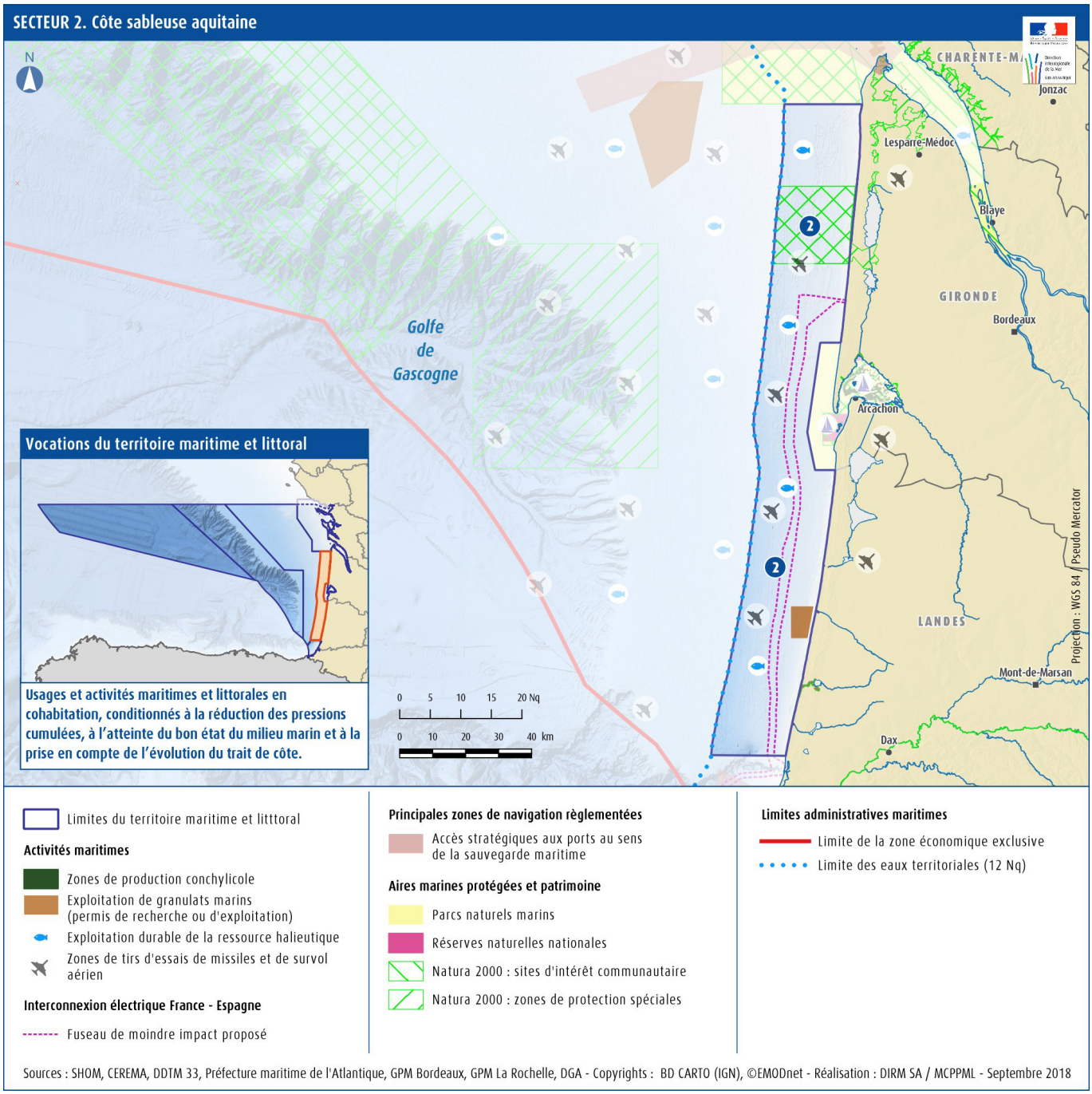
Specific ecological features identified

Coastal upwelling, the “bar-baïne” system and coastal hydro-sedimentary transport (linked to wave climate) towards the Capbreton Canyon are distinctive features of the Landes and Gironde coasts. The plume waters of the Adour and the Gironde promote high phytoplanktonic and zooplanktonic productivity.

The Landes and Gironde coasts play a functional role for a number of commercial (anchovy, sole, bream, etc.) and heritage (sturgeon, shad) species. This area is also a major feeding ground for seabirds and marine mammals.

AREA 2 - Aquitaine sandy coast | 19

Map | Human Activity, Environment and Heritage



1. Ecological issues present in the sector in question

Ecological issues category			Qualification			
			MAJOR	HIGH	AVERAGE	LOW
Hydrographic conditions, pelagic habitats and food webs	Distinctive hydrological structures:	Coastal upwelling				
	Land-sea interface and river plumes	Gironde river plume				
Benthic habitats and geomorphological structures	Sedimentary habitats	Subtidal medium sands				
Functional fishing areas	Spawning grounds:	anchovy, sole, gilthead bream, sardine, bluntnose sixgill shark, horse mackerel, mackerel				
	Nurseries:	seabass, sole, meagre, hake, sardine, common shrimp, sprat, anchovy, horse mackerel, mackerel				
	Diadromous species:	Sea sturgeon				
		alosa agone, Allis shad				
Functional avifauna areas	Areas with maximum density and functional areas identified for seabirds in the non-breeding season	densities all species				
		Balearic shearwater				
No classification of the issue yet	Cross-cutting issues	Delphinidae and porpoises at depths of between 50 and 100 m	*Not classified at this stage*			
	Distinctive hydrological structures	autumnal warm-water tongue	*Not classified at this stage*			

2. Interactions between activities and the marine environment

The summary table below is taken from data from the activity/pressure matrix carried out by the AFB. Significant contributions by activities to pressure are distinguished from minor contributions by the following codes: significant contribution/minor contribution.

Activities	Pressures
Agriculture	**Physical pressures:** inputs of waste **Chemical pressures:** inflows of nutrients, inflows of hazardous substances, inflows of organic matter
Defence	**Physical pressures:** alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species, anthropogenic noise inputs, disturbance of species
Mineral extraction (prior prospecting)	**Physical pressures:** disturbance and physical seabed losses, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Recreational fishing	**Physical pressures:** physical disturbance of the seabed, inputs of waste **Biological pressures**: species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Commercial fishing	**Physical pressures:** physical disturbance of the seabed, alterations to hydrographical conditions, inputs of waste **Biological pressures**: species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Tourism and leisure	**Physical pressures:** physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, disturbance of species, introduction of microbial pathogens, introduction or propagation of non-native species
Maritime works	**Physical pressures:** loss and physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, disturbance of species,

	introduction or propagation of non-native species,

3. Trends and prospects for development

Activities	Trends
Agriculture	Sector reliant on national and international circumstances
Defence	Continued activity at the Missile Launch Testing Centre
Maritime works	Development of the power line between France and Spain (RTE)
Recreational fishing	Diversified sector, whose regulatory and best-practice frameworks are currently changing
Commercial fishing	Profession subject to conditions governing access to the resource
Risk	Addressing flood, coastal flood and erosion risks. Sector subject to impacts on the water quality of the watersheds (population increase and sanitary quality of bathing waters)
Tourism and leisure	High traffic, new practices. Cohabitation between leisure uses

4. Proposed strategic objectives

Strategic socioeconomic objectives
1.1. Adapt and modernize the production tools of commercial fishing on land as on sea to better add value to products and improve working conditions for mariners
1.2. Strength and management of fishing resources and the environmental dimension to achieve sustainable commercial fishing activity
4.1. Put the competitiveness of the naval and nautical industries on a sustainable footing and adapt fleets to the issues raised by the environmental transition
5.1. Support the upswing in the MRE sector by adapted planning
6.1. Include sediment extraction in a sustainable development approach addressing the needs of sectors and territories throughout the Bay of Biscay
7.1. Optimize the utilization of space in recreational ports and mooring areas respecting water quality and marine ecosystems
7.2. Maintain the attractiveness of sports sites to enable activities to cohabit harmoniously with their environment
8.1. Boost the tourist potential of an environmentally friendly coastline respectful of its accommodation capacity
9.1. Take account of natural risks and climate change in planning for the most resilient coastline areas
9.2. A quality of coastal water sufficient to guarantee all uses
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10.2. Guarantee safe navigation conditions
11.1. Protect the heritage and attractive locations
11.2. Promote the heritage and landscape potential of the coastline

Strategic environmental objectives
1. Limit or avoid anthropogenic physical disturbances affecting the good environmental status of coastal benthic habitats, the continental shelf, and deep-sea habitats, particularly characteristic habitats
2. Reduce or avoid pressures causing direct fatalities and disturbance of marine mammals and turtles
3. Reduce or avoid pressures causing direct fatalities, disturbance and loss of functional habitats important for the life-cycle of seabirds and foreshores, in particular for vulnerable and endangered species
4. Limit pressures on vulnerable or endangered species and promote their restoration and limit pressure on major fishing areas
5. Limit the risks from introducing and disseminating non-native species through human activity
6. Promote the exploitation of fish, mollusc and crustacean stocks at maximum sustainable yield
7. Promote preserving in the environment the trophic resources necessary for large predators
8. Reduce excessive nutrient inputs and their transfer in the marine environment
9. Avoid losses and physical disturbance to marine habitats linked to maritime and coastal activities
10. Limit modifications (by any human activity) to hydrographical conditions which adversely affect the smooth running of the ecosystem
11. Reduce or remove chemical contaminant input to the marine environment, whether from land or sea-based sources, chronic or accidental
12. Reduce microbiological, chemical and phycotoxic contamination which degrades the hygienic quality of seafood, aquaculture and fishing production areas and bathing areas
13. Reduce inputs into and presence of land-based waste in the sea and on the coast
14. Limit sound emissions in the marine environment to levels which do not impact on marine mammals

5. Requirements or recommendations

Knowledge of cumulative effect of activities over space and time should be capitalized and made available to the public, institutions of governance and actors in research and the environment.

Non-impact requirements for certain ecosystem components:

- The systematic implementation of the sequence avoid – reduce – compensate at sea;
- Taking account of specific zonings (at the date of approval of this document): cf. "human activities, environment and heritage" map for area 2.

Conditions for the sequence of events:

- Any activity developed which is subject to environmental assessment must first be subject to a study specifically designed on the basis of the nature of the ecological issues arising in area 2;
- Its compatibility with national defence activities, other activities and infrastructure (particularly cables) and with the good management of the public natural maritime domain should be demonstrated by the project leader;
- Observance of the rules of coexistence of users also advocated by the marine nature park management plan and departmental public natural maritime domain management strategies;
- Existing maritime planning related to human activities should also be taken into account.

6. Relevant planning documents (as at the date of approval of the maritime coastline strategy)

Documents requiring compatibility with the SBSD:

- Courant d'Huchet National Nature Reserve Management Plan
- Regional Marine Aquaculture Development Master Plan
- DOCOB (Objectives Document) Aquitaine and Landes Plateau
- DOCOB Portion of the sandy coast of the Aquitaine Coast

Documents requiring compatibility with the SBSD:

- Water Development and Management Master Plan
- Coastal Conservatory Management Strategy
- Flood Risk Management Plan
- Regional Economic Development, Innovation and Internationalization Master Plan
- Regional Planning, Sustainable Development and Equality between Territories (draft) Master Plan
- "Gironde Estuary", "Médoc Lakes",
"Born and Buch coastal lagoons", and downstream Adour" Water Development and Management Master Plans
- Adour-Garonne Water Development and Management Master Plan
- Territorial Cohesion Plan:
    - Pointe Médoc SCoT (approved)
    - Lacs Médocains SCoT (approved)
    - Côte Landes Nature SCoT (approved)
    - Médoc 2033 SCoT (under development)
    - Born SCoT (under development)

Area 3

Bay of Arcachon marine natural park

Vocation

Knowledge and protection of the marine environment; sustainable development of maritime activities


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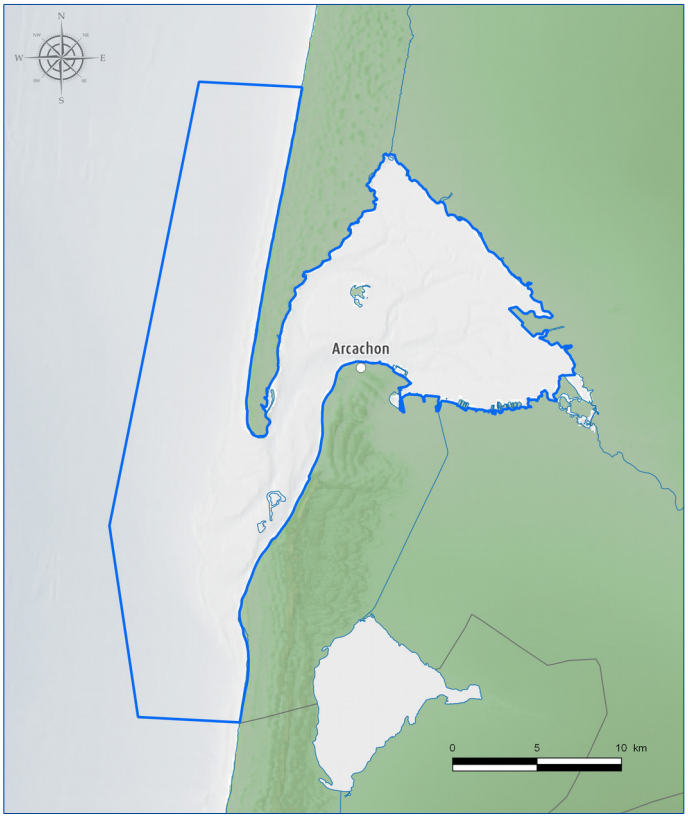


Introduction to the area

A marine natural park consists of marine protected areas which purpose is to contribute to the knowledge of marine heritage and the protection and sustainable development of the marine environment, as defined by the Environment Code. They are created by ministerial decree specifying management direction, area and the composition of the management board.

The Bay of Arcachon marine natural park was created in June 2014, with a surface area of 435 km² and is the 6th largest of 9 marine nature parks in France. Its management plan was validated by the Management Board in May 2017 and approved by the Management Board of the French Agency for Biodiversity in September 2017, after work lasting one and a half years with co-construction involving all actors in the area. This document identifies its ambitious objectives for the next 15 years for a large number of issues relating to natural resources, marine activities and raising the awareness of its users.

The act that created the marine nature park sets out 7 management principles:

1. Improve knowledge of the dynamics of the bay and its links with the ocean, particularly hydro-sedimentary transport and exchanges between ecosystems;

2. Preserve and restore the specific features of lagoon biodiversity and the attractiveness of the bay and its accessibility to birds;

3. Guarantee the good ecological functioning of the different environments, particularly the salt marshes, by increased requirements for water quality and consistent management of natural resources and uses;

4. Promote and support different professions, particularly fishing and shellfish farming, to preserve

AREA 3: Bay of Arcachon marine natural park | 25

jobs and promote expertise, always respecting the natural balances;

5. Promote marine environmentally friendly practices in nautical activities by altering behaviours and facilities and

technological innovation;

6. Contribute to promoting natural and cultural heritage and marine landscapes in order to preserve the area's

marine identity and to ensure this is taken into account in development projects;

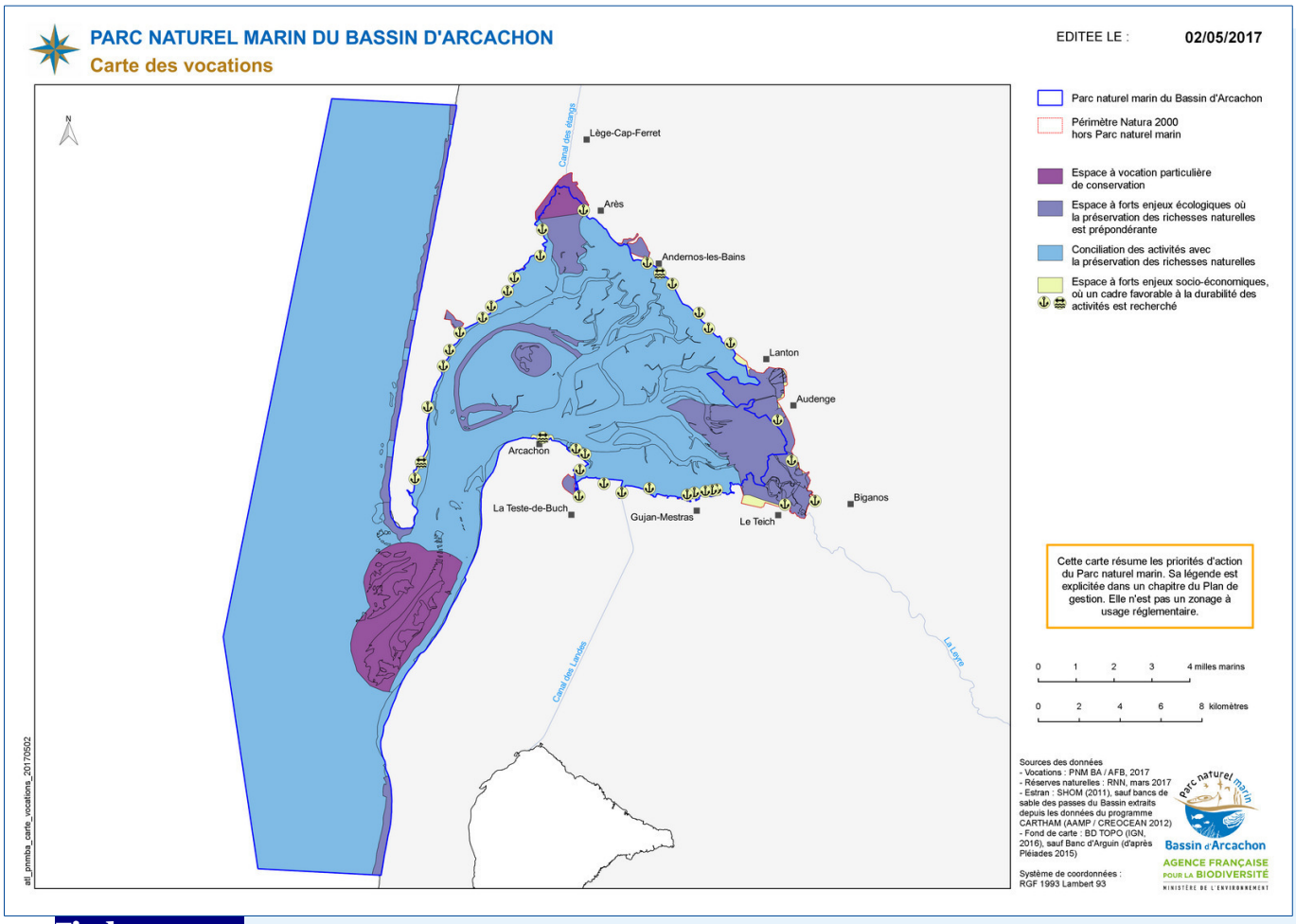
7. Empower the population as a whole by raising awareness of the impacts of uses on the natural marine balances of

the bay and the benefits of these balances for quality of life.

The Bay of Arcachon marine natural park also operates the “Arcachon Bay and Cap Ferret” and “Arcachon Bay and Banc d’Arguin” Natura 2000 sites, of which more than 90% falls within the perimeter of the marine nature park.

Map | Vocations of the Bay of Arcachon marine natural park

The Nature Park’s management plan was validated by the Management Board and approved by the Management Board of the French Agency for Biodiversity. This document identifies strategic objectives for the area enabling it to implement management approaches over a 15-year period



Find out more

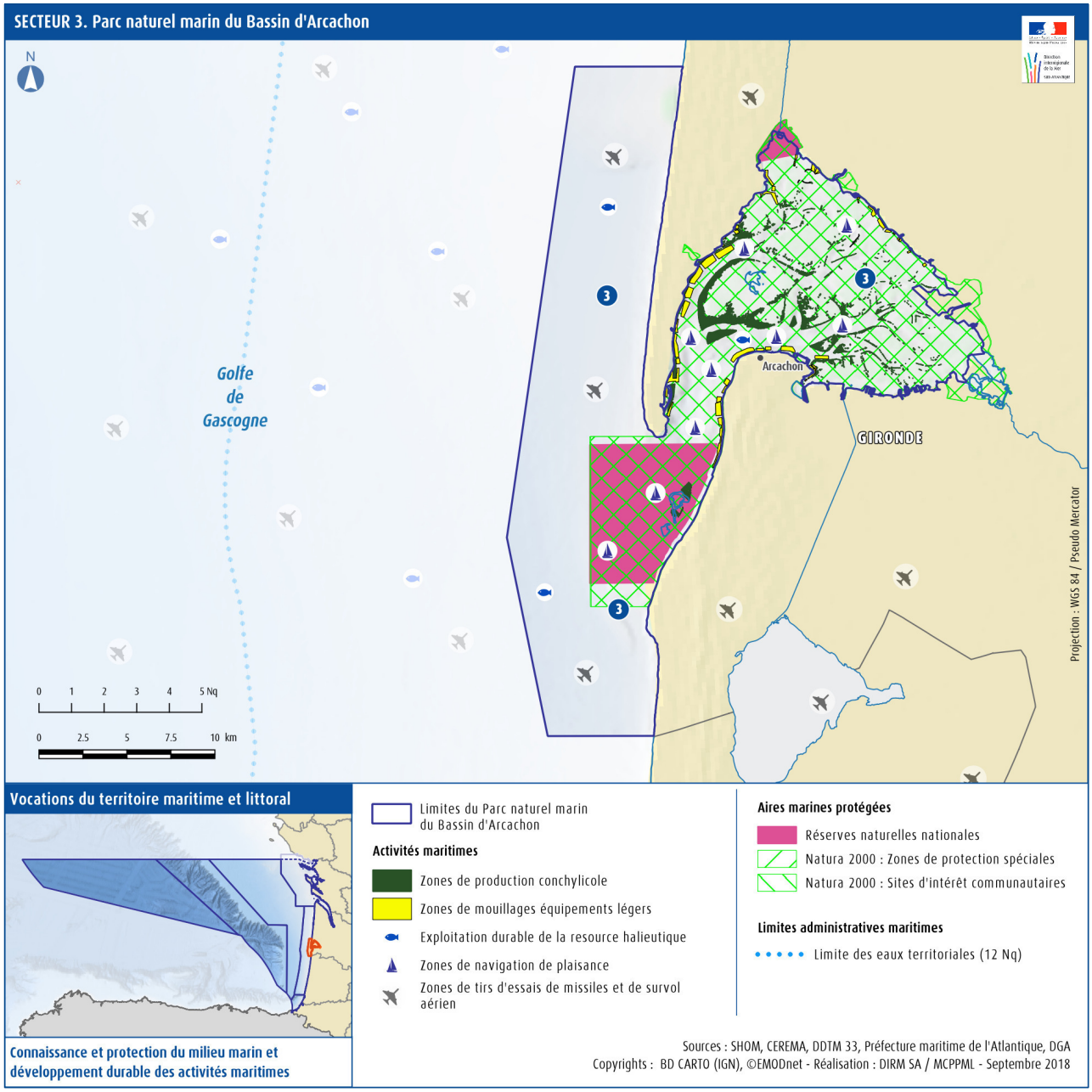
Map | Bay of Arcachon marine natural park Management Plan

Activities in the area

Activity in Arcachon Bay is largely seasonal and based on commercial fishing, oyster farming and water sports. Nautical recreational tourism mainly takes place during the summer, while fishing and oyster farming are carried out all year round and depend on species life cycles.

Due to tourism and a concentration of activity on the coastline, the lagoon and the area beyond, this area is subject to heavy pressure. The area is also prone to natural hazards (particularly coastal floods and marine erosion) which give rise to significant coastal risks.

Map | Human Activity, Environment and Heritage



Specific ecological features identified

Arcachon Bay is an enclave in the rectilinear sandy coastline of Aquitaine. A variety of hydrodynamic conditions which are relatively sheltered within the bay and exposed outside it.

Arcachon Bay is home to marine and dwarf eelgrass, with the largest community of dwarf eelgrass in Europe. Nevertheless, the surface area of these communities has declined greatly over the last 10 years, probably initially due to the heatwaves of 2003 and 2006 and water pollution, and then, later, with increasing turbidity and currents affecting the seabed as a result of this initial decline.

Numerous and varied habitats are home to a diverse range of fauna, (particularly annelids, bivalves, crustaceans). This locally exceptional food web, coupled with a particular geographical location, makes the Bay a very attractive site for migrating and overwintering birds. In the summer, when temperatures increase, the diversity of habitats in the bay attracts a wide range of marine and diadromous fish (eels in particular).

1. Ecological issues present in the sector in question

Ecological issues category			Qualification			
			MAJOR	HIGH	AVERAGE	LOW
Hydrographic conditions, pelagic habitats and food webs	Distinctive hydrological structures	Coastal upwellings in the open ocean				
	Land-sea interface and river plumes:	Arcachon Bay				
Benthic habitats and geomorphological structures	Biogenic habitats:	Dwarf eelgrass beds				
		marine eelgrass communities, sabellaraia				
		Atlantic salt meadows				
	Sedimentary habitats:	Intertidal sediments				
Functional fishing areas	Spawning grounds:	undulate ray, cuttlefish, jack mackerel				
	Nurseries:	red mullet, eel, bluntnose sixgill shark, brill, sprat, undulate ray, white seabream, cuttlefish, horse mackerel, mackerel, seabass, sole, gilthead bream				
	Benthic invertebrates:	clams				
	Diadromous species:	eels				
		lampreys				
	Elasmobranchs:	common stingray and smalleyed ray, other elasmobranchs (historically important)				
Functional avifauna areas	Wader nesting and feeding grounds:	Eurasian oystercatcher				
	Seabird colonies and feeding grounds:	Sandwich tern				
		yellow-legged gull				
	Wintering grounds for waterfowl:	Brent goose, dunlin, ringed plover, Eurasian spoonbill, northern shoveller, black-tailed godwit				
Marine mammals	Harbour porpoise maximal density area:	Harbour porpoise				
No classification of the issue yet	Other cetaceans:	group of common bottlenose dolphins historically present	*Not classified at this stage*			

2. Interactions between activities and the marine environment

The summary table below is taken from data from the activity/pressure matrix carried out by the AFB. Significant contributions by activities to pressure are distinguished from minor contributions by the following codes: significant contribution/minor contribution.

Activities	Pressures
Agriculture	**Physical pressures:** inputs of waste **Chemical pressures:** inputs of nutrients, inputs of hazardous substances, inputs of organic matter
Aquaculture	**Physical pressures:** losses and physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures** : introduction or propagation of non-native species, disturbance of species
Recreational fishing	**Physical pressures:** physical disturbance of the seabed, inputs of waste **Biological pressures**: species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Commercial fishing	**Physical pressures**:physical disturbance of the seabed, alterations to hydrographical conditions, inputs of waste **Biological pressures**: species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Tourism and leisure	**Physical pressures:** physical disturbance of the seabed,inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, disturbance of species, introduction of microbial pathogens, introduction or propagation of non-native species
Sea transport and ports	**Physical pressures:**losses and physical disturbance of the seabed, alterations to hydrographical conditions, inputs of waste **Chemical pressures:** inputs of hazardous substances, inputs of nutrients **Biological pressures:** disturbance of species, anthropogenic noise inputs , introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Maritime works	**Physical pressures:** loss and physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions Chemical pressures: **inputs of hazardous substances** **Biological pressures:** anthropogenic sound inputs, disturbance of species, introduction or propagation of non-native species

3. Trends and prospects for development

Activities	Trends
Agriculture	Sector reliant on national and international circumstances
Aquaculture	Monoculture sector (animal health risks) subject to impacts on the water quality of the watersheds (population increase and sanitary quality)
Recreational fishing	Diversified sector, whose regulatory and best-practice frameworks are currently changing
Commercial fishing	Profession subject to conditions governing access to the resource – conflicts between uses
Risks	Addressing flood, coastal flood and erosion risks Sector subject to impacts on the water quality of the watersheds (population increase and sanitary quality of bathing waters)
Tourism and leisure	Busy summer season which is varied over space and time according to a number of factors (regulations, weather conditions, available time, tides, fuel prices, accessibility, etc.)
Sea transport and ports	High passenger transport activity

4. Proposed strategic objectives

Strategic socioeconomic objectives
1.1. Adapt and modernize the production tools of commercial fishing on land as on sea to better add value to products and improve working conditions for mariners
1.2. Strength and management of fishing resources and the environmental dimension to achieve sustainable commercial fishing activity
2.1. Improve water management and put aquaculture activity on a sustainable footing
2.2. Pursue the transition towards environmentally friendly aquaculture
2.3. Promote the activity to maintain the social and economic fabric
4.1. Put the competitiveness of the naval and nautical industries on a sustainable footing and adapt fleets to the issues raised by the environmental transition
5.1. Support the upswing in the MRE sector by adapted planning
7.1. Optimize the utilization of space in recreational ports and mooring areas respecting water quality and marine ecosystems
7.2. Maintain the attractiveness of sports sites to enable activities to cohabit harmoniously with their environment
8.1. Boost the tourist potential of an environmentally friendly coastline respectful of its accommodation capacity
9.1. Take account of natural risks and climate change in planning for the most resilient coastline areas
9.2. A quality of coastal water sufficient to guarantee all uses
10.1. Reduce and contain pollution risks
10.2. Guarantee safe navigation conditions
11.1. Protect the heritage and attractive locations
11.2. Promote the heritage and landscape potential of the coastline

Strategic environmental objectives
1. Limit or avoid anthropogenic physical disturbances affecting the good environmental status of coastal benthic habitats, the continental shelf, and deep-sea habitats, particularly characteristic habitats
2. Reduce or avoid pressures causing direct fatalities and disturbance of marine mammals and turtles
3. Reduce or avoid pressures causing direct fatalities, disturbance and loss of functional habitats important for the life-cycle of seabirds and foreshores, in particular for vulnerable and endangered species
4. Limit pressures on vulnerable or endangered species of fish or promote their restoration and limit pressure on major fishing areas
5. Limit the risks from introducing and disseminating non-native species through human activity
6. Promote the exploitation of fish, mollusc and crustacean stocks at maximum sustainable yield
7. Promote preserving in the environment the trophic resources necessary for large predators
8. Reduce excessive nutrient inputs and their transfer in the marine environment
9. Avoid losses and physical disturbance to marine habitats linked to maritime and coastal activities
10. Limit modifications (by any human activity) to hydrographical conditions which adversely affect the smooth running of the ecosystem
11. Reduce or remove chemical contaminant input to the marine environment, whether from land or sea-based sources, chronic or accidental
12. Reduce microbiological, chemical and phycotoxic contamination which degrades the hygienic quality of seafood, aquaculture and fishing production areas and bathing areas
13. Reduce inputs into and presence of land-based waste in the sea and on the coast
14. Limit sound emissions in the marine environment to levels which do not impact on marine mammals

5. Requirements or recommendations

Knowledge of cumulative effect of activities over space and time should be capitalized and made available to the public, institutions of governance and actors in research and the environment.

- **Non-impact requirements for certain ecosystem components:**
  - The systematic implementation of the sequence avoid – reduce – compensate at sea;
  - Taking account of specific zonings (at the date of approval of this document): cf. "human activities, environment and heritage" map for area 3.

- **Conditions for the sequence of events:**
  - Any activity developed which is subject to environmental assessment must first be subject to a study specifically designed on the basis of the nature of the ecological issues arising in area 3;
  - Its compatibility with national defence activities, other activities and infrastructure (particularly cables) and with the good management of the public natural maritime domain should be demonstrated by the project leader;
  - Observance of the rules of coexistence of users also advocated by the marine nature park management plan and the departmental public natural maritime domain management strategy;
  - Existing maritime planning related to human activities should also be taken into account.

6. Relevant planning documents (as at the date of approval of the maritime coastline strategy)

■ Documents requiring compatibility with the SBSD:

- Marine Nature Park Management Plan
- Regional Marine Aquaculture Development Master Plan

■ Documents requiring compatibility with the SBSD:

- Coastal Conservatory Management Strategy
- Flood Risk Management Plan
- Regional Economic Development, Innovation and Internationalization Master Plan
- Regional Planning, Sustainable Development and Equality between Territories (draft) Master Plan
- Nature reserves management plan
    - Banc d'Arguin
    - Arès and Lège Cap-Ferret salt meadows
- Arcachon Bay and Val de Leyre SCoT (under development)
- Regional coastal-erosion risk-management plan and its break down into local coastal-strip management strategies
- Adour-Garonne Water Development and Management Master Plan
- "Médoc Lakes", "Leyre", and "Born and Buch coastal lagoons" Water Development and Management Master Plans

Basque rocky coast, Adour Estuary and Gouf de Capbreton canyon

Vocation

Cohabiting maritime and coastal uses and activities subject to reducing combined pressures to achieve good environmental status and allowing for the changing coastline with a focus on iconic traditional activities (fishing, trading ports, tourism, boating and watersports)

Introduction to the area

Activities in the area

In terms of marine use, there is important coastal fishing and a very dynamic water and sliding-sports sector. The presence of a commercial port and two fishing ports generates significant commercial maritime traffic. The Basque coast is under strong demographic pressure, heightened during the summer period by large tourist numbers.

Specific ecological features identified

On the Basque coast, the plumes of rivers Adour, Nivelle and Bidassoa ensure planktonic productivity. The Basque coast is characterized by intertidal and subtidal reefs influenced by its southerly location and a remarkable concentration of underwater grottos. The Basque reefs, through their isolation, southerly location and exposure to the waves, have an original algal and animal composition.

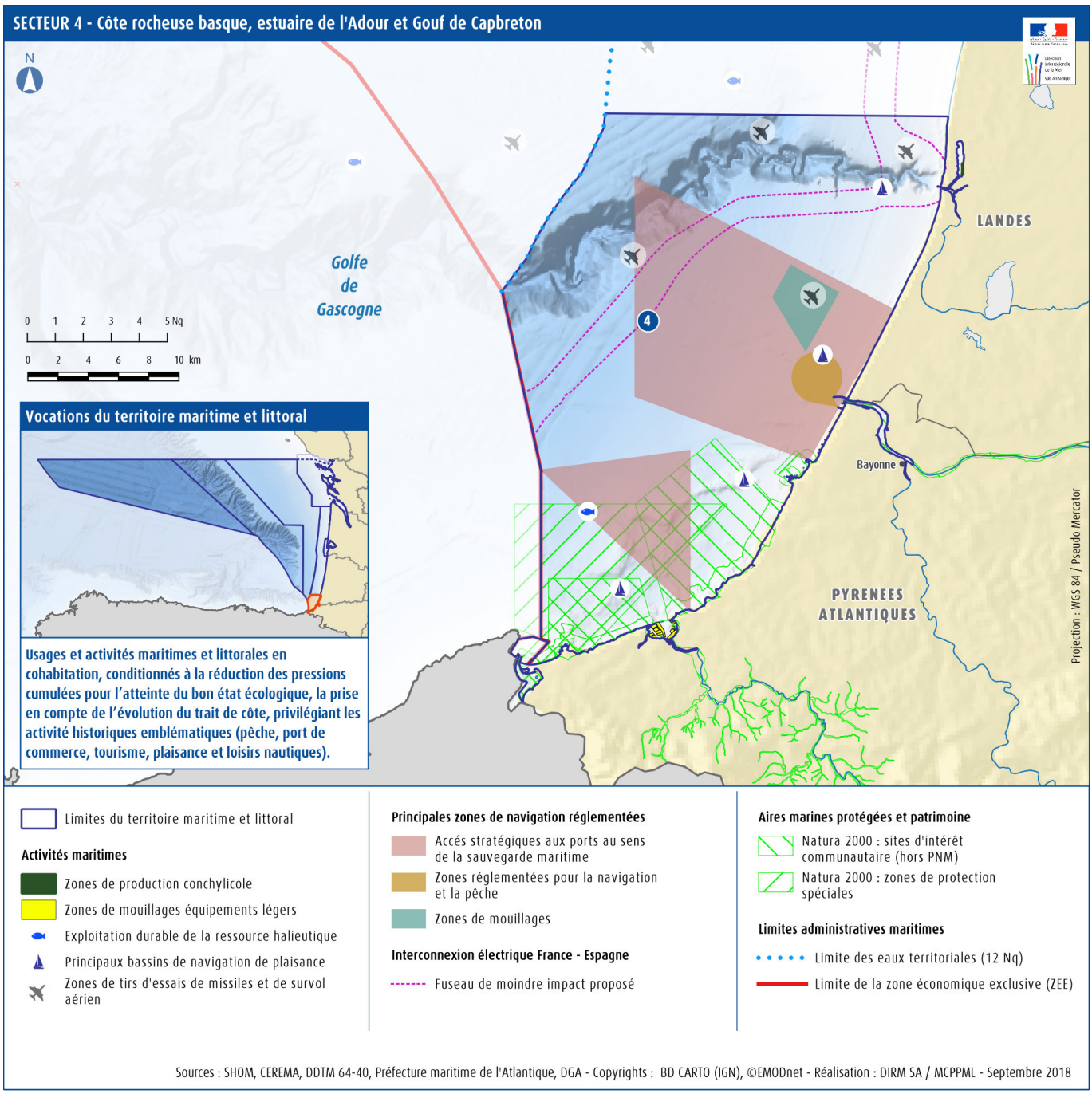
The Basque coast plays a functional role for a number of species of commercial interest including seabass, hake, sole, gilthead bream and anchovy. It is also a major feeding ground for seabirds (including the Balearic shearwater) and marine mammals. Diadromous fish such as salmon, eel and shad are concentrated there.

Beyond the shelf, the continental slope, mostly covered with sediments and notched in places by rocky submarine canyons, extends to the abyssal plain, also covered with fine sediments. The canyons canalise the flows of particles and organic matter from the continental shelf towards the abyssal plain and are centres of sedimentary deposits and carbon sinks. A diversity of ecological units (antipatharids, gorgonians, sponges) can be observed all along the centre and the south of the slope.

At the southernmost extremity, the Gouf de Capbreton canyon is distinctive in world terms due to its proximity to the coast.

Only around 30 “coastal” canyons have been recorded worldwide. The hydrological and sedimentary exchanges with the coast are significant there and enable the development of a very particular fauna. The particular topography of the canyons interacts with the dominant hydrodynamic processes along the margins (currents due to the wind or tidal currents) to create upwelling or downwelling.

Map | Human Activity, Environment and Heritage



1. Ecological issues present in the sector in question

Ecological issues category			Qualification			
			MAJOR	HIGH	AVERAGE	LOW
Hydrographic conditions, pelagic habitats and food webs	**Land-sea interface and river plumes:**	Adour river plume				
Benthic habitats and geomorphological structures	**Distinctive geomorphological structures:**	Gouf de Capbreton canyon				
		rocky Basque seabeds				
	Rocky habitats	grottos				
		Subtidal and intertidal reefs				
	Biogenic habitats	Dwarf eelgrass beds				
	Deep-sea habitats	antipatharids, gorgonians, sponges				
Functional fishing areas	**Spawning grounds:**	hake, mackerel, sardine and anchovy gilthead bream, bluntnose sixgill shark, sole				
	Nurseries:	sprat, horse mackerel, mackerel seabass, sole, meagre, hake, sardine, anchovy				
	Diadromous species:	Alosa agone, eel, Allis shad, salmon				
		lamprey				
	Elasmobranchs:	Porbeagle, bramble shark (historically important)				
Functional avifauna areas	**Areas with maximum density and functional areas identified for seabirds in the non-breeding season:**	densities all species				
		Balearic shearwater				
No classification of the issue yet	**Cross-cutting issues**	Delphinidae and porpoises at depths of between 50 and 100 m	*Not classified at this stage*			

2. Interactions between activities and the marine environment

The summary table below is taken from data from the activity/pressure matrix carried out by the AFB. Significant contributions by activities to pressure are distinguished from minor contributions by the following codes: significant contribution/minor contribution.

Activities	Pressures
Agriculture	**Physical pressures:** inputs of waste **Chemical pressures:** inputs of nutrients, inputs of hazardous substances, inputs of organic matter
Defence	**Physical pressures:** alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species, anthropogenic noise inputs, disturbance of species
Industry	**Physical pressures:** alterations to hydrographical conditions, inputs of waste, **Chemical pressures:** inputs of nutrients, inputs of organic matter, inputs of hazardous substances
Recreational fishing	**Physical pressures:** physical disturbance of the seabed, inputs of waste **Biological pressures** :introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species,, disturbance of species
Commercial fishing	**Physical pressures:** physical disturbance of the seabed, inputs of waste, , alterations to hydrographical conditions **Biological pressures** :introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species,, disturbance of species
Electricity production including potential future activity	**Physical pressures:** loss and physical disturbance of the seabed, inflows of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, disturbance of species, introduction or propagation of non-native species
Tourism and leisure	**Physical pressures:** physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** introduction of microbial pathogens, introduction or propagation of non-native species, anthropogenic sound inputs, disturbance of species
Sea transport and ports	**Physical pressures:** loss and physical disturbance of the seabed, inflows of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of nutrients, inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Maritime works	**Physical pressures:** loss and physical disturbance of the seabed, inputs of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, disturbance of species, introduction or propagation of non-native species

3. Trends and prospects for development

Activities	Trends
Agriculture	Sector reliant on national and international circumstances
Defence	Continued activity at the Missile Launch Testing Centre
Maritime works	Development of the power line between France and Spain (RTE)
Electricity production (potential future activity)	Zone for potential development of wave energy
Industries	Leading destination for surfing
Recreational fishing	Diversified sector, whose regulatory and best-practice frameworks are currently changing
Commercial fishing	Profession subject to conditions governing access to the resource
Risks	Addressing flood, coastal flood and erosion risks. Sector subject to impacts on the water quality of the watersheds (population increase and sanitary quality of bathing waters)
Tourism and leisure	Large tourist numbers Development of eco-mobility
Sea transport and ports	Changes linked to the development of Bayonne port: stabilization of traffic despite the fact that certain historical activities have ceased

4. Proposed strategic objectives

Strategic socioeconomic objectives
1.1. Adapt and modernize the production tools of commercial fishing on land as on sea to better add value to products and improve working conditions for mariners
1.2. Strength and management of fishing resources and the environmental dimension to achieve sustainable commercial fishing activity
3.1. Ensure the competitiveness and complementarity of ports, improve access and promote modal shift
4.1. Put the competitiveness of the naval and nautical industries on a sustainable footing and adapt fleets to the issues raised by the environmental transition
5.1. Support the upswing in the MRE sector by adapted planning
5.2. Support R&D in the sector to deploy these technologies
7.1. Optimize the utilization of space in recreational ports and mooring areas respecting water quality and marine ecosystems
7.2. Maintain the attractiveness of sports sites to enable activities to cohabit harmoniously with their environment
8.1. Boost the tourist potential of an environmentally friendly coastline respectful of its accommodation capacity
9.1. Take account of natural risks and climate change in planning for the most resilient coastline areas
9.2. A quality of coastal water sufficient to guarantee all uses
10.1. Reduce and contain pollution risks
10.2. Guarantee safe navigation conditions
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11.2. Promote the heritage and landscape potential of the coastline

Strategic environmental objectives
1. Limit or avoid anthropogenic physical disturbances affecting the good environmental status of coastal benthic habitats, the continental shelf, and deep-sea habitats, particularly characteristic habitats
2. Reduce or avoid pressures causing direct fatalities and disturbance of marine mammals and turtles
3. Reduce or avoid pressures causing direct fatalities, disturbance and loss of functional habitats important for the life-cycle of seabirds and foreshores, in particular for vulnerable and endangered species
4. Limit pressures on vulnerable or endangered species of fish or promote their restoration and limit pressure on major fishing areas
5. Limit the risks from introducing and disseminating non-native species through human activity
6. Promote the exploitation of fish, mollusc and crustacean stocks at maximum sustainable yield
7. Promote preserving in the environment the trophic resources necessary for large predators
8. Reduce excessive nutrient inputs and their transfer in the marine environment
9. Avoid losses and physical disturbance to marine habitats linked to maritime and coastal activities
10. Limit modifications (by any human activity) to hydrographical conditions which adversely affect the smooth running of the ecosystem
11. Reduce or remove chemical contaminant input to the marine environment, whether from land or sea-based sources, chronic or accidental
12. Reduce microbiological, chemical and phycotoxic contamination which degrades the hygienic quality of seafood, aquaculture and fishing production areas and bathing areas
13. Reduce inputs into and presence of land-based waste in the sea and on the coast
14. Limit sound emissions in the marine environment to levels which do not impact on marine mammals

5. Requirements or recommendations

Knowledge of cumulative effect of activities over space and time should be capitalized and made available to the public, institutions of governance and actors in research and the environment.

- **Non-impact requirements for certain ecosystem components:**
  - The systematic implementation of the sequence avoid – reduce – compensate at sea;
  - Taking account of specific zonings (at the date of approval of this document): cf. "human activities, environment and heritage" map for sector 4.

- **Conditions for the sequence of events:**
  - Arising environmental assessment must first be subject to a study specifically designed on the basis of the nature of the ecological issues arising in area 4;
  - Its compatibility with national defence activities, other activities and infrastructure (particularly cables) and with the good management of the public natural maritime domain should be demonstrated by the project leader;
  - Observance of the rules of coexistence of users also advocated by the marine nature park management plan and the departmental public natural maritime domain management strategy;
  - Existing maritime planning related to human activities should also be taken into account.

6. Relevant planning documents (as at the date of approval of the maritime coastline strategy)

Documents requiring compatibility with the SBSD:

- Regional Marine Aquaculture Development Plan
- DOCOB Rocky Basque coast and offshore extension
- DOCOB Bidossoa Estuary and Fontarabie Bay

Documents requiring compatibility with the SBSD:

- Water Development and Management Master Plan
- Coastal Conservatory Management Strategy
- Flood Risk Management Plan
- Regional Economic Development, Innovation and Internationalization Master Plan
- Regional Planning, Sustainable Development and Equality between Territories (draft) Master Plan
- Bayonne Port Water Development and Management Master Plan
- Territorial Cohesion Plan: 2 SCoTs one north (pending validation) and one south (under review).
    - Maremne Adour south coast SCoT (approved)
    - Bayonne agglomeration and Landes South SCoT (approved)
    - Southern Basque Country SCoT (under review)

Note: Merger within the next 6 years following the creation of a Basque EPCI (Public Inter-Municipal Cooperation Establishment)

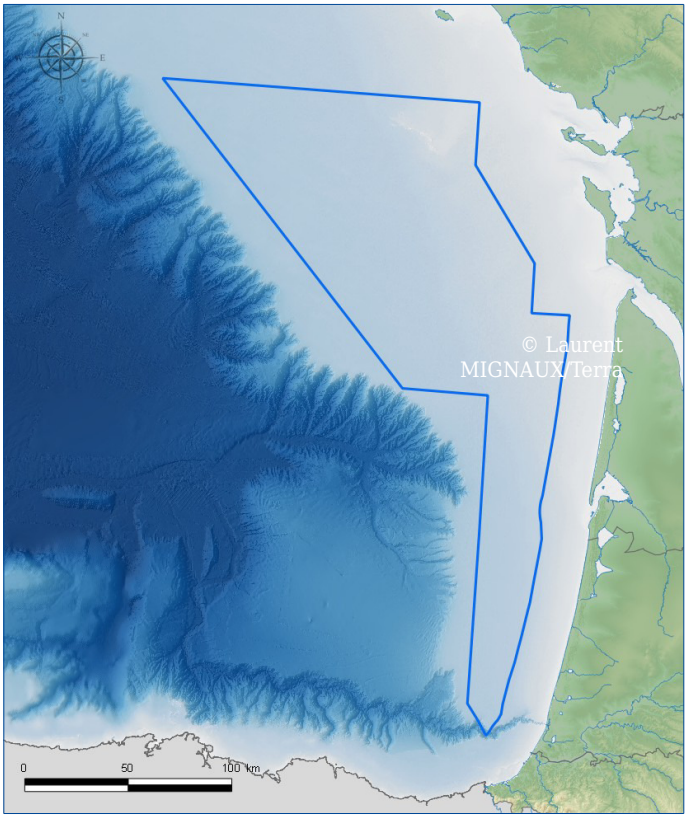
- Adour-Garonne Water Development and Management Master Plan: “Downstream Adour” and “Coastal Basque” SAGEs

Area 5

Continental shelf

Vocation

Priority to sustainable commercial fishing cohabitating with shipping ; potential development of new renewable energies and marine aggregate extraction of marine projects



Introduction to the area

Activities in the area

Activities on the continental shelf are mainly confined to commercial shipping and commercial fishing.

Part of the area is affected by the activities of the Landes testing centre where activities other than those of defence are strictly regulated.

Potential for establishing MREs has been identified in the sector.

Specific ecological features identified

The Bay of Biscay continental shelf is mainly occupied by sandy fractions crossed by deep muddy veins. Large rocky shelves occupy the centre. This biogeographic transition zone creates a gradient in the benthic and pelagic communities and testifies to the effects of climate change on the whole trophic network as well as on hydrographic conditions.

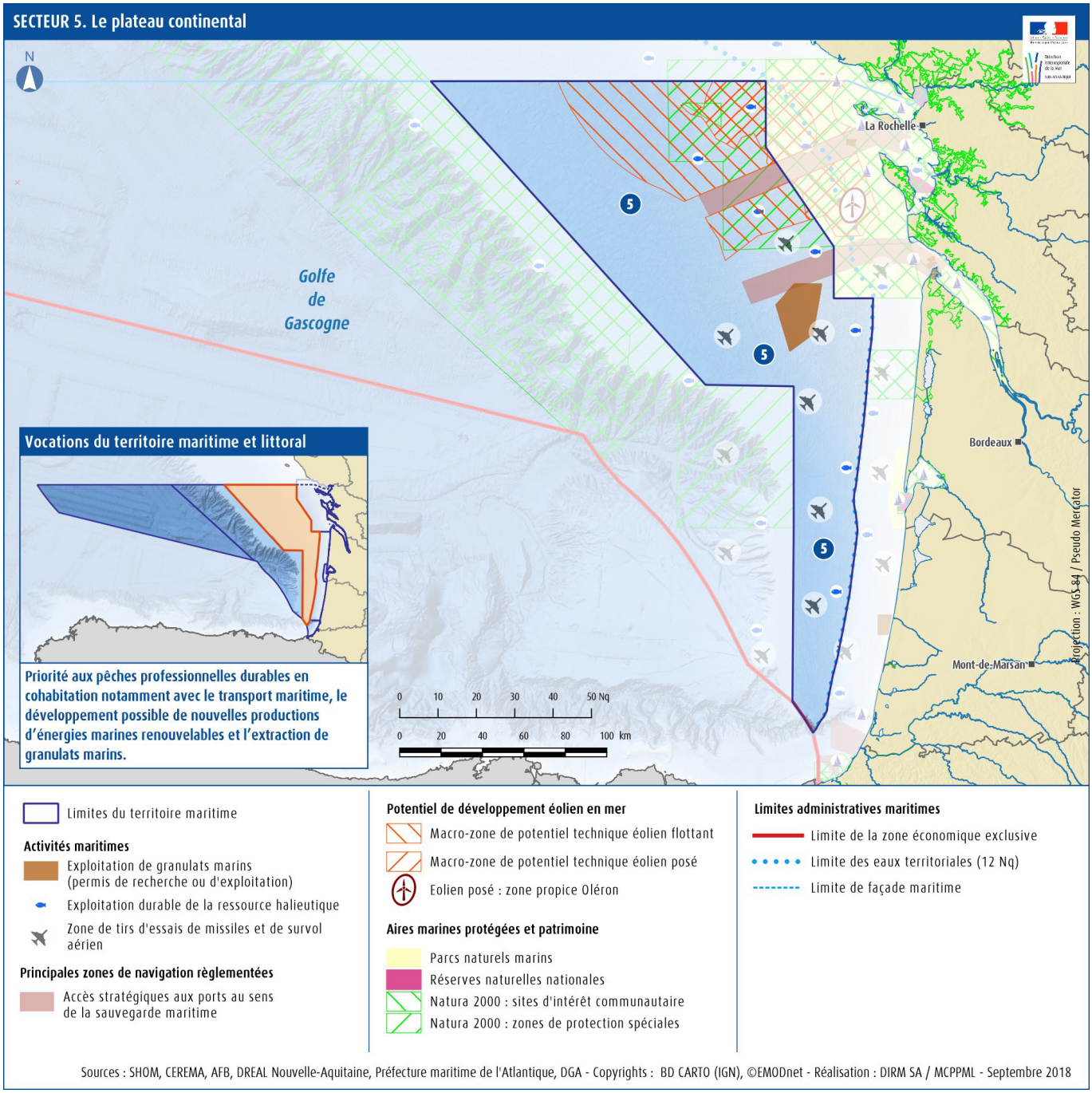
Sandy-muddy habitats offer areas for nurseries or spawning grounds for numerous species including hake, mackerel, sardine, and nephrops. A significant biodiversity is observed in the Bay of Biscay since it marks the southern limit of the distribution range of many northern species and the northern limit of many southern species.

To the south, rocky carbonate structures formed by emissions of cold methane on the Armoricain and Aquitain shelves at the edge of the slope offer the only French example of this type of habitat.

The functions of this area remain generally unknown.

In the northern part, the Rochebonne shelf is a remarkable area due to the quality of its marine environment and high biological productivity. This area is a breeding ground (cuttlefish, meagre, sardine, etc.), a feeding ground (seabass, sole, etc.) and an important transit area (particularly for diadromous fish). It is consequently a feeding ground for top predators (porpoises and delphinidae).

Map | Human Activity, Environment and Heritage



1. Ecological issues present in the sector in question

Ecological issues category			Qualification			
			MAJOR	HIGH	AVERAGE	LOW
Hydrographic conditions, pelagic habitats and food webs	Primary and secondary producers and forage species:	Forage species				
	Distinctive hydrological structures	Cold-water mass (upwelling and related cyclonic eddies)				
Benthic habitats and geomorphological structures	Distinctive geomorphological structures:	Rochebonne shelf				
		Structures formed by gas emissions				
	Biogenic habitats:	Circalittoral mud with sea pens				
		Laminaria				
	Rocky habitats:	Circalittoral reefs				
	Sedimentary habitats:	Subtidal medium sands, heterogeneous subtidal sediments, subtidal mud				
		Subtidal coarse sediment				
Functional avifauna fishing	Spawning grounds:	jack mackerel, hake, anchovy, sole, whiting, sardine, seabass				
	Nurseries:	Sprat, horse mackerel, mackerel, hake, sardine, anchovy				
	Elasmobranchs:	Bramble shark (historically important)				
	Benthic invertebrates:	Nephrops				
	Areas with maximum density and functional areas identified for seabirds in the non-breeding season:	Densities all species				
No classification of the issue yet	Other cetaceans:	Cross-cutting issue delphinidae and porpoises at depths of between 50 and 100 m	*Not classified at this stage*			
	Biogenic habitats:	sabellaraia	*Not classified at this stage*			
	Elasmobranchs:	Common Skate	*Not classified at this stage*			

2. Interactions between activities and the marine environment

The summary table below is taken from data from the activity/pressure matrix carried out by the AFB. Significant contributions by activities to pressure are distinguished from minor contributions by the following codes: significant contribution/minor contribution.

Activities	Pressures
Defence	**Physical pressures:** alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Commercial fishing	**Physical pressures:** physical disturbance of the seabed, alterations to hydrographical conditions, inputs of waste **Biological pressures:** species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Electricity production including potential future activity	**Physical pressures**: loss and physical disturbance of the seabed, inflows of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, disturbance of species, introduction or propagation of non-native species
Maritime transport	**Physical pressures**: loss and physical disturbance of the seabed, inflows of waste, alterations to hydrographical conditions **Chemical pressures:** inputs of nutrients, inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Mineral extraction (exclusive prospecting permit)	**Physical pressures:** loss and physical disturbance of the seabed, alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species

3. Trends and prospects for development

Conflicts between boaters and oyster farmers over the development of offshore aquaculture

Activities	Trends
Defence	Continued activity at the Missile Launch Testing Centre
Electricity production (potentially an emerging activity)	Potential development of MREs
Commercial fishing	Profession subject to conditions governing access to the resource Profession subject to constraints related to the development of MREs
Sea transport	Developments linked to the development of MREs

4. Proposed strategic objectives

Strategic socioeconomic objectives
1.1. Adapt and modernize the production tools of commercial fishing on land as on sea to better add value to products and improve working conditions for mariners
1.2. Strength and management of fishing resources and the environmental dimension to achieve sustainable commercial fishing activity
5.1. Support the upswing in the MRE sector by adapted planning
10.1. Reduce and contain pollution risks
10.2. Guarantee safe navigation conditions

Strategic environmental objectives
1. Limit or avoid anthropogenic physical disturbances affecting the good environmental status of coastal benthic habitats, the continental shelf, and deep-sea habitats, particularly characteristic habitats
2. Reduce or avoid pressures causing direct fatalities and disturbance of marine mammals and turtles
3. Reduce or avoid pressures causing direct fatalities, disturbance and loss of functional habitats important for the life-cycle of seabirds and foreshores, in particular for vulnerable and endangered species
4. Limit pressures on vulnerable or endangered species of fish or promote their restoration and limit pressure on major fishing areas
5. Limit the risks from introducing and disseminating non-native species through human activity
6. Promote the exploitation of fish, mollusc and crustacean stocks at maximum sustainable yield
7. Promote preserving in the environment the trophic resources necessary for large predators
9. Avoid losses and physical disturbance to marine habitats linked to maritime and coastal activities
10. Limit modifications (by any human activity) to hydrographical conditions which adversely affect the smooth running of the ecosystem
11. Reduce or remove chemical contaminant input to the marine environment, whether from land or sea-based sources, chronic or accidental
12. Reduce microbiological, chemical and phycotoxic contamination which degrades the hygienic quality of seafood, aquaculture and fishing production areas and bathing areas
13. Reduce inputs into and presence of land-based waste in the sea and on the coast
14. Limit sound emissions in the marine environment to levels which do not impact on marine mammals

5. Requirements or recommendations

Knowledge of cumulative effect of activities over space and time should be capitalized and made available to the public, institutions of governance and actors in research and the environment.

- **Non-impact requirements for certain ecosystem components:**
  - The systematic implementation of the sequence avoid – reduce – compensate at sea;
  - Taking account of specific zonings (at the date of approval of this document): cf. "human activities, environment and heritage" map for area 5.
- **Conditions for the sequence of events:**
  - Any activity developed which is subject to environmental assessment must first be subject to a study specifically designed on the basis of the nature of the ecological issues arising in area 5;
  - Its compatibility with national defence activities, other activities and infrastructure (particularly cables) and with the good management of the public natural maritime domain should be demonstrated by the project leader;
  - Existing maritime planning related to human activities should also be taken into account.

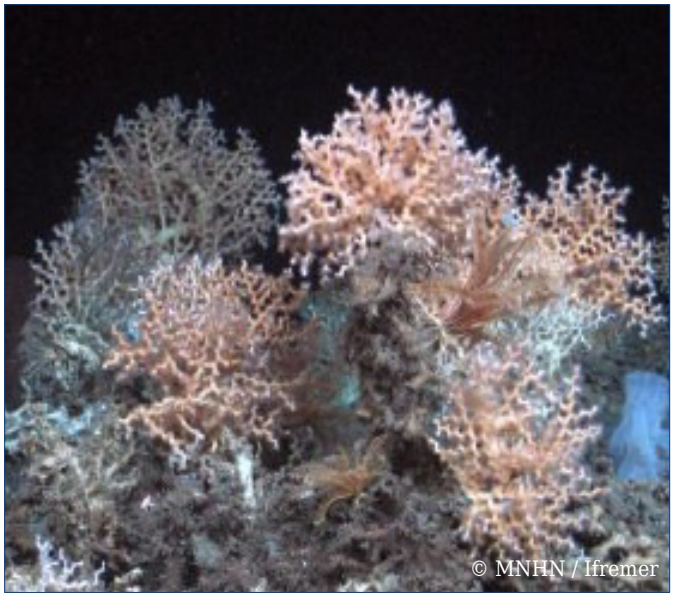
6. Relevant planning documents (as at the date of approval of the maritime coastline strategy)

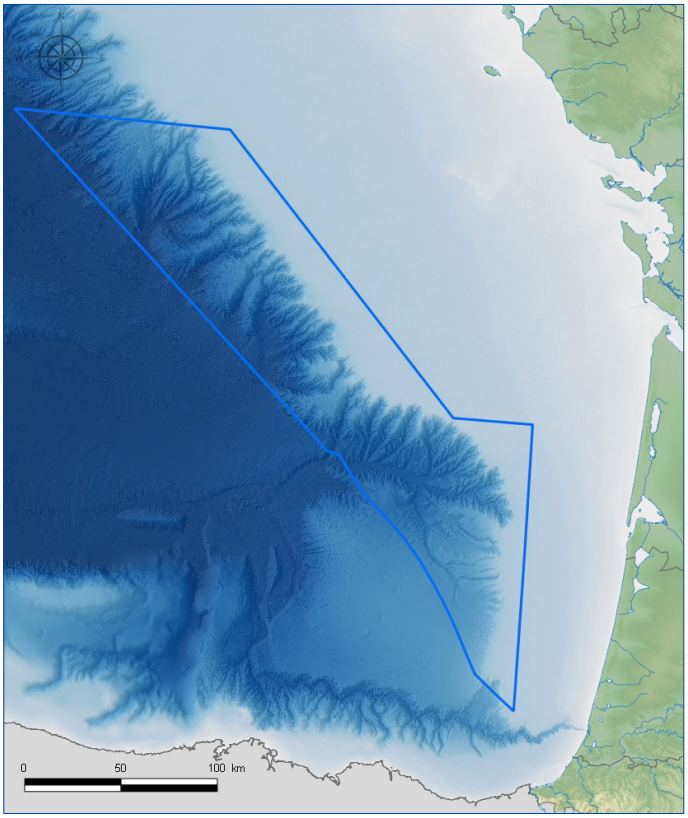
compatibility: DOCOB

Continental slope

Vocation

Sustainable use of marine resources without jeopardising habitats or species of concern.





Introduction to the area

Activities in the area

Activities present in this area relate to offshore fisheries, navigation and defence. The area is mainly exploited by Spanish fishing vessels.

Specific ecological features identified

The geological, geochemical and physical conditions of the seabed and of the water column define diverse habitats hosting specific biological communities. Beyond the shelf, the continental slope, mostly covered with sediments and notched in places by rocky submarine canyons, extends to the abyssal plain, also covered with fine sediments.

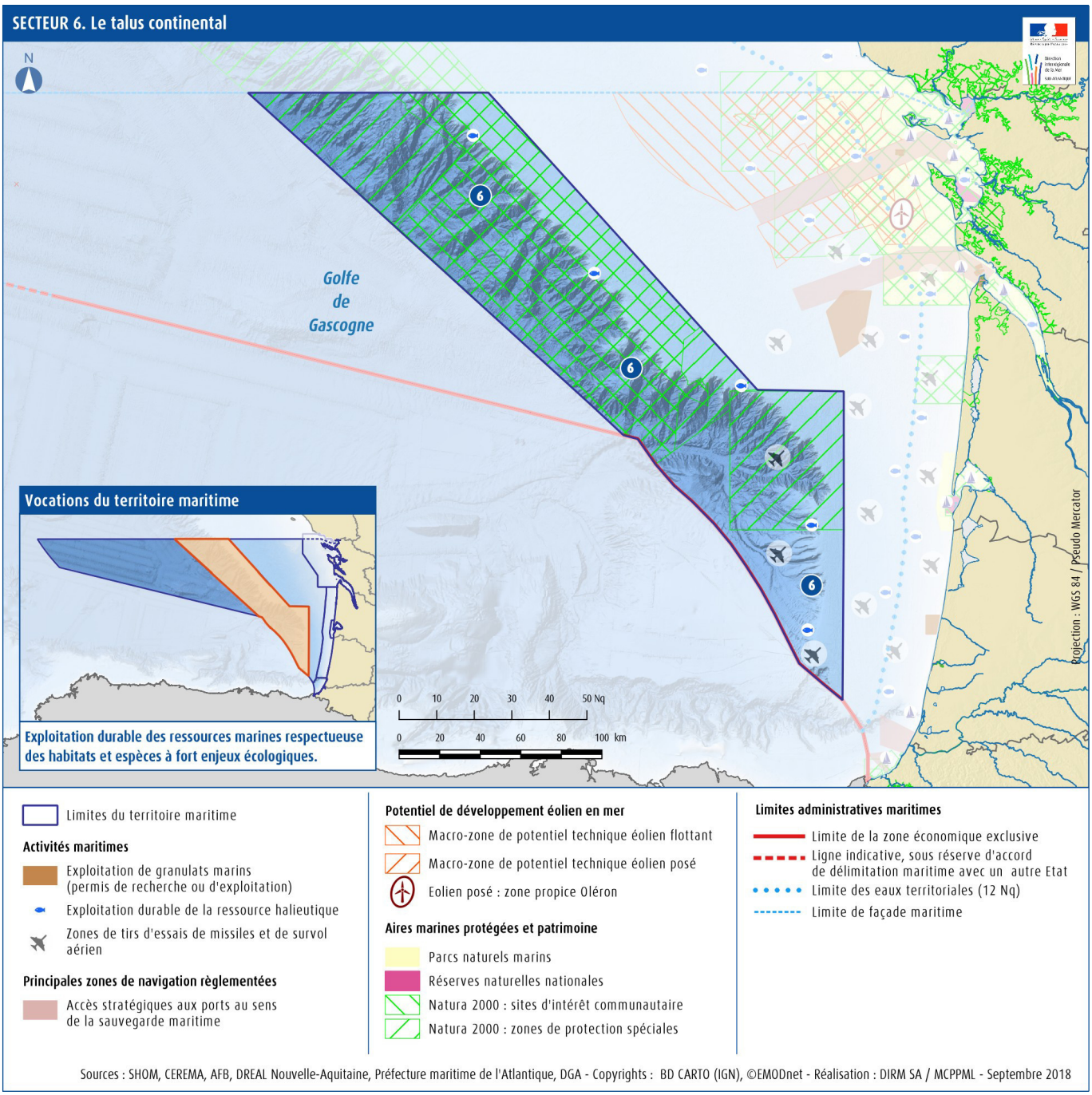
A diversity of ecological units (antipatharids *(1)*, gorgonians, sponges) was observed all along the centre and the south of the slope; their richness varies depending on the canyons. The particular topography of the canyons interacts with the dominant hydrodynamic processes along the margins, whether they are the currents due to the wind or tidal currents, to create upwelling or downwelling *(2)*.

(1) Cnidarian hexacorallia colonies on the deep seabed

(2) Upwelling involves deep water coming to the surface. Downwelling refers to the reverse phenomenon

The rugged topography of the canyons provides a refuge for certain species of fish, including elasmobranchs (porbeagle, bramble shark) and the concentration of organic matter offers privileged nursery areas for sardines and anchovies. These functionalities are reflected in the presence of seabirds (European storm petrel), marine mammals such as the pilot whale, and also the bottlenose dolphin and the deep divers further south.

Map | Human Activity, Environment and Heritage



1. Ecological issues present in the sector in question

Ecological issues category			Qualification			
			MAJOR	HIGH	AVERAGE	LOW
Hydrographic conditions, pelagic habitats and food webs	**Distinctive hydrological structures**	front of the slope, important biomass and related planktonic diversity eddies				
Benthic habitats and geomorphological structures	**Distinctive geomorphological structures:**	slopes and canyons with high levels of biodiversity Landes high plateau: bathyal mud and structures formed by gas emissions				
	Deep-sea habitats:	antipatharids, gorgonians, sponges (centre and south of the slope) and other solitary scleractinians or in colonies (central canyons) bathyal mud with sea pens (canyon in the southern area)				
		solitary scleractinians or in colonies				
Functional fishing areas	**Spawning grounds:**	hake, mackerel, horse mackerel and sardine anchovy				
	Nurseries:	sprat, horse mackerel, mackerel, sardine, anchovy, hake				
	Elasmobranchs:	porbeagle, bramble shark (historically important)				
Functional avifauna areas	**Areas with maximum density and functional areas identified for seabirds in the non-breeding season:**	densities all species				
Crosscutting issues	**Marine mammals**	Most species of cetaceans (maximum diversity), delphinidae, pilot whale, deep divers, bottlenose dolphin				
		short-beaked common dolphin				
No classification of the issue yet	**Primary and secondary producers and forage species:**	forage species (micronekton)	*Not classified at this stage*			
	Deep-sea habitats:	white coral reefs, soft-bottom coral gardens, bathyal mud with sea pens soft-bottom coral gardens	*Not classified at this stage*			

2. Interactions between activities and the marine environment

The summary table below is taken from data from the activity/pressure matrix carried out by the AFB. Significant contributions by activities to pressure are distinguished from minor contributions by the following codes: significant contribution/minor contribution.

Activities	Pressures
Defence	**Physical pressures:** alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Commercial fishing	**Physical pressures:**physical disturbance of the seabed, alterations to hydrographical conditions, inputs of waste **Biological pressures:** species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species
Maritime transport	**Physical pressures:**inputs of waste, **Chemical pressures:** inputs of nutrients, inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species

3. Trends and prospects for development

Activities	Trends
Defence	Continued activity at the Missile Launch Testing Centre
Commercial fishing	Profession subject to conditions governing access to the resource

4. Proposed strategic objectives

Strategic socioeconomic objectives
1.1. Adapt and modernize the production tools of commercial fishing on land as on sea to better add value to products and improve working conditions for mariners
1.2. Strength and management of fishing resources and the environmental dimension to achieve sustainable commercial fishing activity
10.1. Reduce and contain pollution risks
10.2. Guarantee safe navigation conditions

Strategic environmental objectives
1. Limit or avoid anthropogenic physical disturbances affecting the good environmental status of coastal benthic habitats, the continental shelf, and deep-sea habitats, particularly characteristic habitats
2. Reduce or avoid pressures causing direct fatalities and disturbance of marine mammals and turtles
3. Reduce or avoid pressures causing direct fatalities, disturbance and loss of functional habitats important for the life-cycle of seabirds and foreshores, in particular for vulnerable and endangered species
4. Limit pressures on vulnerable or endangered species of fish or promote their restoration and limit pressure on major fishing areas
5. Limit the risks from introducing and disseminating non-native species through human activity
6. Promote the exploitation of fish, mollusc and crustacean stocks at maximum sustainable yield
7. Promote preserving in the environment the trophic resources necessary for large predators
9. Avoid losses and physical disturbance to marine habitats linked to maritime and coastal activities
10. Limit modifications (by any human activity) to hydrographical conditions which adversely affect the smooth running of the ecosystem
11. Reduce or remove chemical contaminant input to the marine environment, whether from land or sea-based sources, chronic or accidental
12. Reduce microbiological, chemical and phycotoxic contamination which degrades the hygienic quality of seafood, aquaculture and fishing production areas and bathing areas
13. Reduce inputs into and presence of land-based waste in the sea and on the coast
14. Limit sound emissions in the marine environment to levels which do not impact on marine mammals

5. Requirements or recommendations

Need for in-depth knowledge of the area in terms of exploitable resources and environmental issues, in particular those of ecosystem functioning.

It is recommended that the complementary skills acquired are capitalized and made available to the public, governance bodies and specialists, including those working in research.

- **Non-impact requirements for certain ecosystem components:**
  - The systematic implementation of the sequence avoid – reduce – compensate at sea;
  - Taking account of specific zonings (at the date of approval of this document): cf. "human activities, environment and heritage" map for area 6.
- **Conditions for the sequence of events:**
  - Compliance with existing maritime planning related to human activities
  - Any activity developed which is subject to environmental assessment must first be subject to a study specifically designed on the basis of the nature of the ecological issues arising in area 6;
  - Its compatibility with national defence activities, other activities and, where necessary with other activities or infrastructure (particularly cables) should be demonstrated by the project leader;

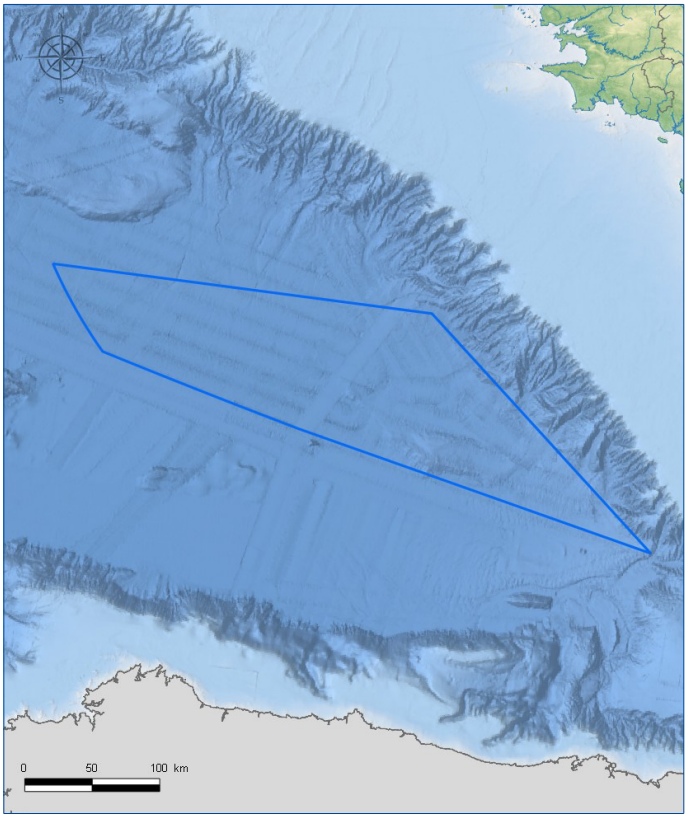
6. Relevant planning documents (as at the date of approval of the maritime coastline strategy)

- DOCOB Bay of Biscay slope
- Document relating to defence areas

Abyssal Plain

Vocation

Use and possible exploitation of the marine environment and resources, subject to gaining a clearer understanding of the area.



Introduction to the area

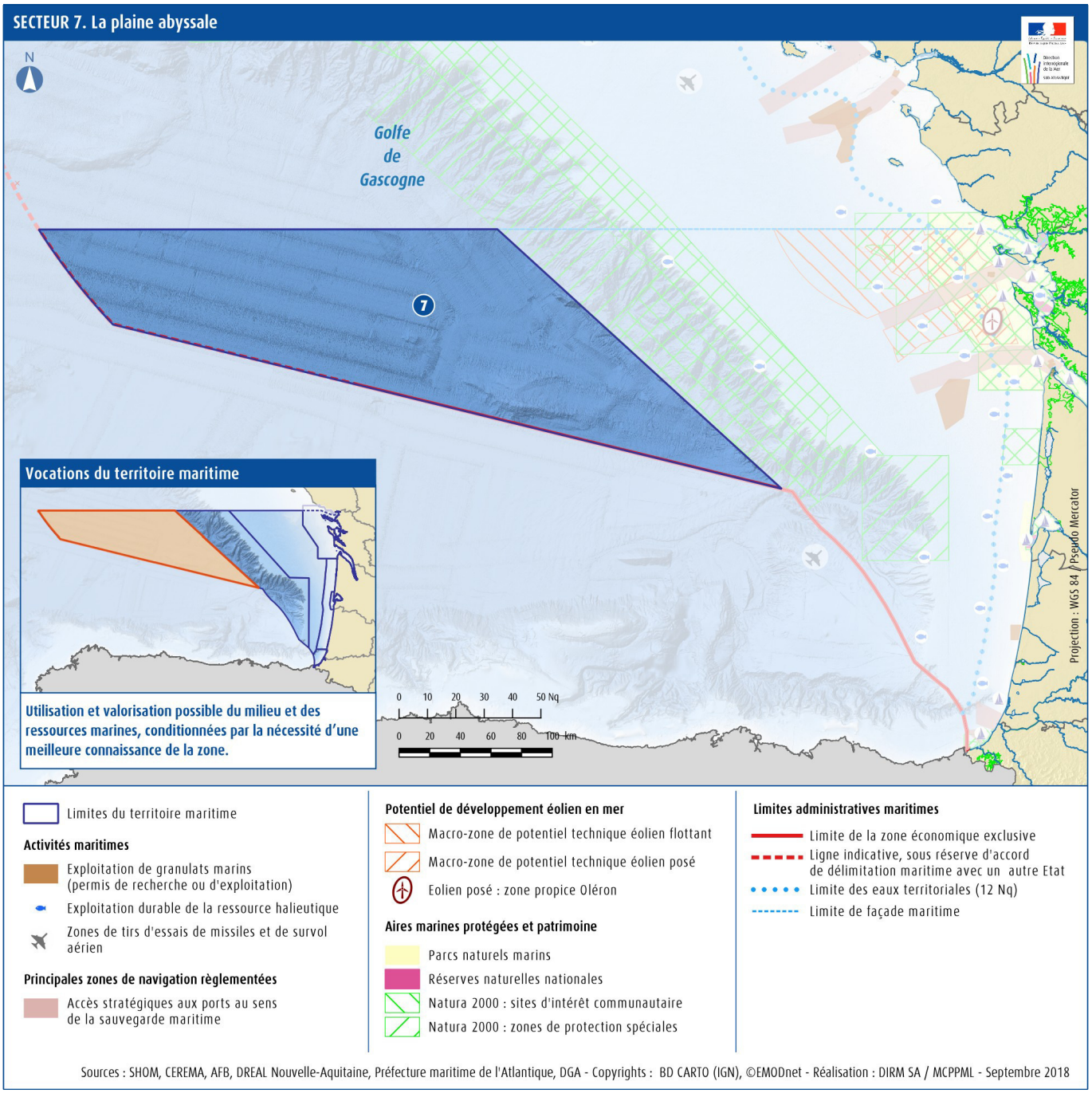
Activities in the area

This area is characterized by the presence of great maritime flows.

Specific ecological features identified

Knowledge of the benthic compartment is limited. The abyssal plain is dominated overall by fine sediments (mud and sand). The associated ecosystems are relatively unknown but the seabed species associated with them have very slow biological cycles which make them vulnerable to variations in pressure. In the south of the area, the dome of Biscay is a seamount with a depth of 4,000 metres, i.e. nearly 500 metres less than the surrounding areas. The ecosystems associated with this seamount are unknown.

The oceanic zone is characterized by pelagic habitats which are relatively nutrient-poor on the surface (compared to the other areas) and by a deep layer which is richer in zooplankton, called a “deep dispersion layer”. This layer, which is particularly rich in krill, is the privileged feeding zone of the fin whale, whose density there is the highest in Europe. Large diving cetaceans also frequent it (sperm whale, beaked whale, pilot whale and Risso's dolphin) as well as small surface delphinidae (short-beaked common dolphin, striped dolphin, bottlenose dolphin), pelagic birds particularly large species of puffin and the leatherback sea turtle in the summer.


SECTEUR 7. La plaine abyssale
N
Golfe de Gascogne
7
Vocations du territoire maritime
Utilisation et valorisation possible du milieu et des ressources marines, conditionnées par la nécessité d'une meilleure connaissance de la zone.
0 10 20 30 40 50 Nq
0 20 40 60 80 100 km
Projection : WGS 84 / Pseudo Mercator
Limites du territoire maritime
Activités maritimes
Exploitation de granulats marins (permis de recherche ou d'exploitation)
Exploitation durable de la ressource halieutique
Zones de tirs d'essais de missiles et de survol aérien
Principales zones de navigation règlementées
Accès stratégiques aux ports au sens de la sauvegarde maritime
Potentiel de développement éolien en mer
Macro-zone de potentiel technique éolien flottant
Macro-zone de potentiel technique éolien posé
Eolien posé : zone propice Oléron
Aires marines protégées et patrimoine
Parcs naturels marins
Réserves naturelles nationales
Natura 2000 : sites d'intérêt communautaire
Natura 2000 : zones de protection spéciales
Limites administratives maritimes
Limite de la zone économique exclusive
Ligne indicative, sous réserve d'accord de délimitation maritime avec un autre Etat
Limite des eaux territoriales (12 Nq)
Limite de façade maritime
Sources : SHOM, CEREMA, AFB, DREAL Nouvelle-Aquitaine, Préfecture maritime de l'Atlantique, DGA - Copyrights : BD CARTO (IGN), ©EMODnet - Réalisation : DIRM SA / MCPPML - Septembre 2018

1. Ecological issues present in the sector in question

Ecological issues category			Qualification			
			MAJOR	HIGH	AVERAGE	LOW
Hydrographic conditions, pelagic habitats and food webs	**Distinctive hydrological structures**	deep dispersion layer, important related zooplanktonic biomass				
Benthic habitats and geomorphological structures	**Distinctive geomorphological structures:**	Biscay seamount				
	Primary and secondary producers and forage species:	Forage species (krill)				
Crosscutting issues		Fin whale (maximum European density)				
		Delphinidae (summer), most species of cetaceans (low density)				
		Sea turtles: area of concentration of leatherback turtles (summer)				

2. Interactions between activities and the marine environment

The summary table below is taken from data from the activity/pressure matrix carried out by the AFB. Significant contributions by activities to pressure are distinguished from minor contributions by the following codes: significant contribution/minor contribution.

Activities	Pressures
Defence	**Physical pressures:** alterations to hydrographical conditions **Chemical pressures:** inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species, disturbance of species
Maritime transport	**Physical pressures:** inputs of waste **Chemical pressures:** inputs of nutrients, inputs of hazardous substances **Biological pressures:** anthropogenic sound inputs, species disturbance, introduction or propagation of non-native species, removal of wild species or death/injury inflicted on these species

3. Trends and prospects for development

Activities	Trends
Defence	Continued activity at the Missile Launch Testing Centre

4. Proposed strategic objectives

Strategic socioeconomic objectives
10.1. Reduce and contain pollution risks
10.2. Guarantee safe navigation conditions

Strategic environmental objectives
1. Limit or avoid anthropogenic physical disturbances affecting the good environmental status of coastal benthic habitats, the continental shelf, and deep-sea habitats, particularly characteristic habitats
2. Reduce or avoid pressures causing direct fatalities and disturbance of marine mammals and turtles
3. Reduce or avoid pressures causing direct fatalities, disturbance and loss of functional habitats important for the life-cycle of seabirds and foreshores, in particular for vulnerable and endangered species
8. Reduce excessive nutrient inputs and their transfer in the marine environment
9. Avoid losses and physical disturbance to marine habitats linked to maritime and coastal activities
10. Limit modifications (by any human activity) to hydrographical conditions which adversely affect the smooth running of the ecosystem
11. Reduce or remove chemical contaminant input to the marine environment, whether from land or sea-based sources, chronic or accidental
12. Reduce microbiological, chemical and phycotoxic contamination which degrades the hygienic quality of seafood, aquaculture and fishing production areas and bathing areas
13. Reduce inputs into and presence of land-based waste in the sea and on the coast
14. Limit sound emissions in the marine environment to levels which do not impact on marine mammals

5. Requirements or recommendations

Need for in-depth knowledge of the area in terms of exploitable resources and environmental issues, in particular those of ecosystem functioning.

It is recommended that the complementary skills acquired are capitalized and made available to the public, governance bodies and specialists, including those working in research.

Non-impact requirements for certain ecosystem components:

- Not applicable given the current state of knowledge and existing maritime planning (as at the date of approval of this document)

Conditions for the sequence of events:

- Any activity developed which is subject to environmental assessment must first be subject to a study specifically designed on the basis of the nature of the ecological issues arising in area 7;
- Its compatibility with national defence activities, other activities and, where necessary with other activities or infrastructure (particularly cables) should be demonstrated by the project leader;
- This zone is not subject to specific zoning or rules governing coexistence between particular activities.

6. Relevant planning documents (as at the date of approval of the maritime coastline strategy)

N/A

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