

Sea Basin Strategy

Southern Atlantic Sea Basin Strategy Document

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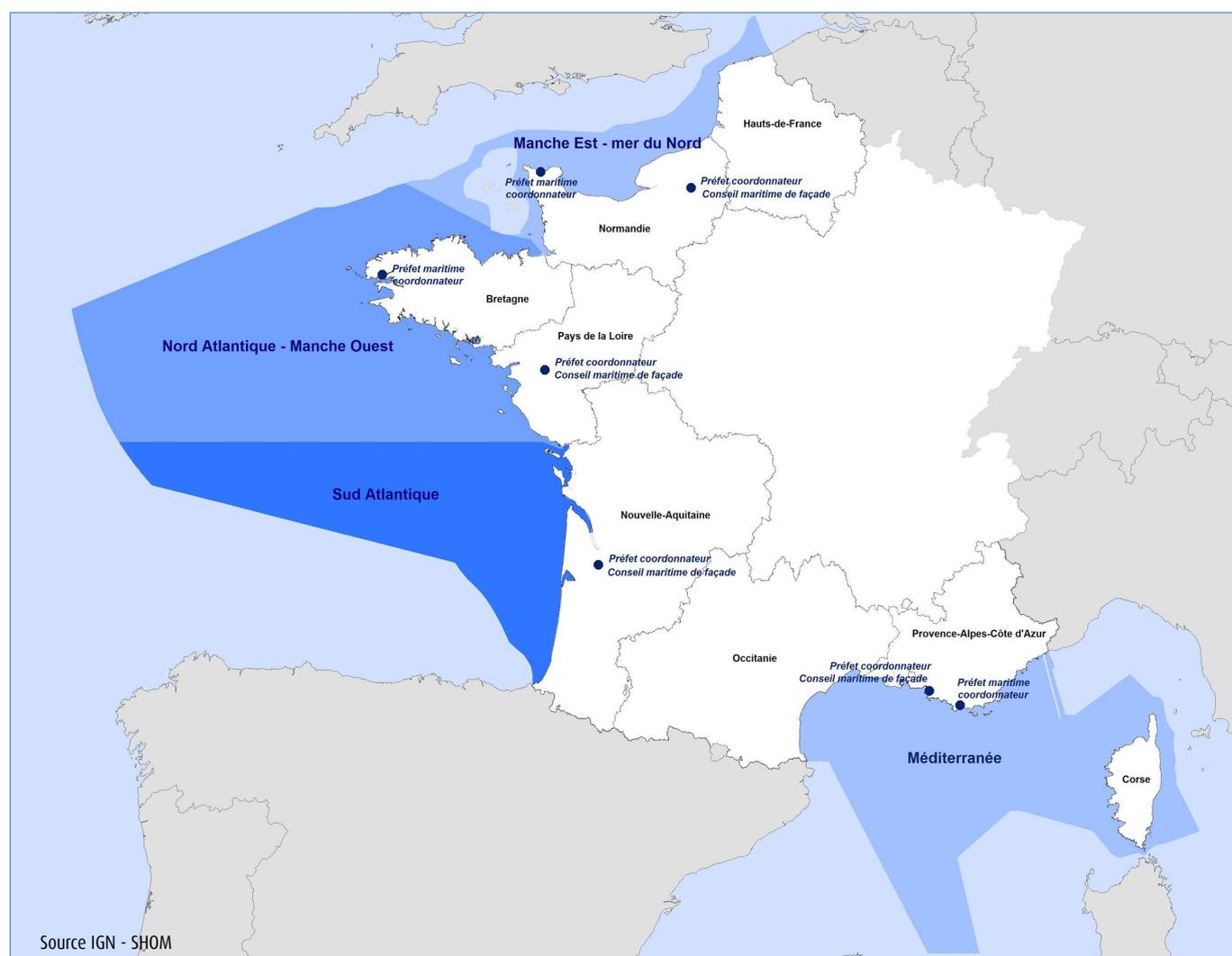
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INTRODUCTION

France's maritime and coastal spaces combine outstanding natural heritage with significant social and economic development potential. France enjoys a worldwide reputation for the excellence of its oceanographic research; it has expertise in industries such as ship-building, goods transport and leisure craft. The French navy operates worldwide, and the French flag is recognised as a sign of the quality, technical capability and professionalism of vessels and crews. France also takes measures to support the transformation and development of traditional and emerging industries. Its expertise in managing protected marine environments is widely acknowledged around the world.

The sea and coast accommodate many different uses. They are also subject to numerous sources of pressure, as a result of urbanisation, concrete sprawl, climate change, land-generated pollution and the impact of activities. To ensure that the sea and coastlines continue to foster exchanges, wealth, sharing, knowledge and culture, France has since the early 2000's pursued a multi-pronged maritime policy that reconciles preservation of the marine environment - the nation's shared national heritage - with economic development of maritime and coastal activities, while promoting integrated management of the land and sea.



Maritime sea basins in metropolitan France

1 The national and European framework

In February 2017, France published a **national strategy for the sea and coast (SNML)**, setting out its long-term goals in this area. This document forms the baseline for environmental protection, optimisation of marine resources and the integrated, consensus-based management of activities relating to the sea and coast. The role of the **National Council for the Sea and Coastal Areas (*conseil national de la mer et des littoraux*)**, made up of elected officials and representatives of civil society, is to develop, enforce, monitor and assess this strategy.

The national strategy for the sea and coast sets out four long-term objectives: deliver the essential **ecological transition**; develop a sustainable **blue economy**; restore **good environmental status** and uphold France's ability to wield **influence** as a seafaring nation.

It establishes a framework for action via four strategic orientations: building on **knowledge and innovation**; developing sustainable, **resilient maritime and coastal spaces**; supporting and promoting **initiatives** and clearing obstacles; promoting a **French vision** within the European Union and in international negotiations and upholding national interests.

For each coastline in metropolitan France, a planning document – the **Sea Basin Strategy Document (*document stratégique de façade - DSF*)** – refines and supplements the general orientations established by the national strategy, reflecting the economic, social and ecological considerations specific to each sea basin.

France has chosen to use sea basin strategy documents to address the requirement to embody **two European framework directives**:

- The **"Marine Strategy" framework directive** (EU Directive 2008/56 of 17 June 2008), which aims to achieve or maintain "good environmental status" for marine environments by 2020.
- The **"Maritime Spatial Planning Directive"** (DCPEM - EU directive 2014/89 of 23 July 2014), which establishes a framework for maritime spatial planning and calls upon member States to coordinate their activities at sea.

2 Southern Atlantic sea basin scale

The sea basin strategy document addresses the **development of activities**, and controlling or **reducing the pressure** exerted by humans on marine and coastal environments. For the first time, a set of maps has been produced that give the general public an overview of the issues and define preferential locations for activities and focus areas for conservation of the marine and coastal environment. The aim is to coordinate activities and **prevent conflicts** resulting from the diversification and densification of uses of the sea and coast. Combined development of human activities must not be allowed to compromise the objective of achieving or maintaining good environmental status.

Due to the **interactions between the land and sea**, solutions do not lie exclusively offshore. Catchment areas and onshore spaces influence maritime and coastal spaces via issues relating to water quality, land use, large-scale urban, tourist and agricultural development, projects for offshore activities, etc. The sea basin strategy document must be coordinated with other documents relating to catchment area and coastal management, such as strategies by local authorities, water development and management masterplan (*schémas directeurs d'aménagement et de gestion des eaux - SDAGE*, embodying the European framework directive), regional development, sustainable development and territorial equality programs (*schémas régionaux de développement durable et d'égalité des territoires - SRADDET*), regional integrated development plans (*schémas de cohérence territoriale - SCOT*) and local (or inter-communal) urban development plans (*plans locaux d'urbanisme - PLUi*).

The **legal basis** for the sea basin strategy document is as follows:

- **At sea**, plans, programmes and projects for works, structures and developments shall be **compatible** (or be rendered compatible) with the objectives and provisions of the sea basin strategy document. Compatibility implies not departing from the basic orientations, in this case the strategic objectives and vacations map, while allowing some flexibility in terms of specifying their application.
- **On land** but with an influence at sea, they shall take the objectives and provisions of the sea basin strategy document into **consideration**; specifically, they are subject to the compatibility requirement, with concessions possible where justified.

When dealing with **conflicts of use**, this document helps stakeholders and authorities to identify conciliatory solutions depending on the area in which are located, but rarely provides a clear verdict in favour of a particular solution, as such choices must also be informed by local analysis. The document provides guidance for growth activities, helping to determine areas in which their development will be appreciated (without granting them any form of exclusivity, however).

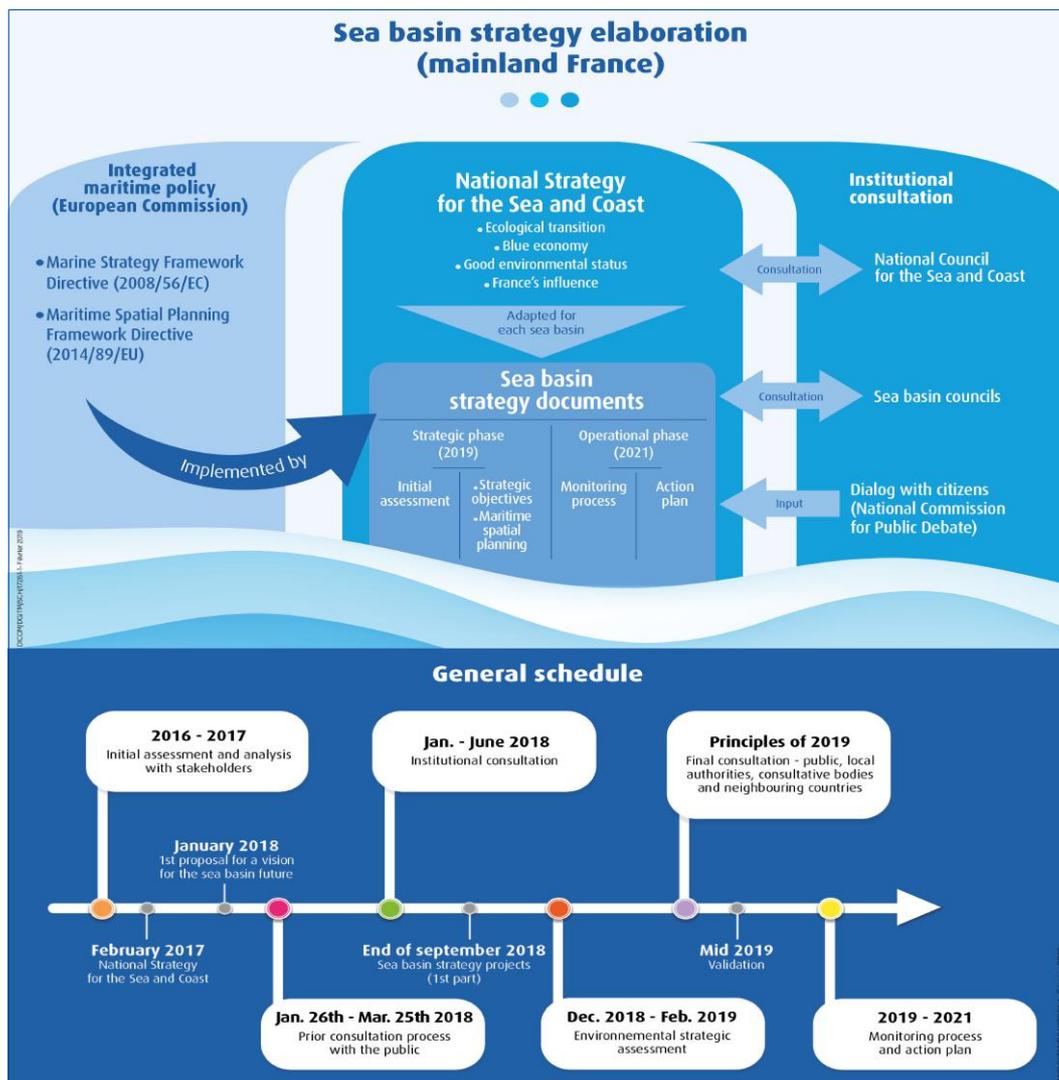
3 Origin of the sea basin strategy document

The sea basin strategy document is produced by the **French State**. At national level, it is overseen by the Ministry for Ecological and Inclusive Transition. Locally, the Atlantic maritime prefect and the prefect of the Nouvelle-Aquitaine region are tasked with its production, in their capacity as coordinating prefects. These two prefects are supported by a unified **consulting body**, the **Sea Basin Council (Conseil Maritime de Façade)**, which is a forum for discussion between stakeholders with interests at sea, along the coast and on land. **The general public** was invited to contribute, via a preliminary consultation exercise supervised by the French National Commission for Public Debate.

The sea basin document is organised in four parts, each intended to be enriched and amended in the light of improvements in available knowledge, and updated in subsequent six-yearly reviews of the document.

- **Initial assessment, challenges and a vision for the coast in 2030** (Part 1)
- **Strategic objectives** defined from an economic, social and environmental perspective, together with related performance indicators. These objectives are accompanied by a "vocations map" that, for each maritime space, defines the areas consistent with the challenges and general objectives assigned to them (Part 2)
- **Evaluation procedure** for assessing implementation of the strategy document (Part 3)
- **Action plan** (Part 4)

This sea basin strategy document contains parts 1 and 2. Parts 3 and 4 are to be produced at a future date, no later than 2020 and 2021, respectively. The sea basin strategy comprises a main document providing an overview, and a series of nine appendices that contain further information relating to the scientific and technical analyses conducted for the initial assessment and to the content of the strategic objectives and planning.



Maritime spatial planning process and sea basin strategic document production schedule

Part 1

Initial Assessment

Chapter 1 : Situational analysis	8
Chapter 2 : Vision for the sea basin	26



Chapter 1 Situational analysis

The following sea basin situational analysis provides an overview of the existing situation (see Appendix 1) and the challenges specific to each theme.

Preliminary remarks on the sea basin

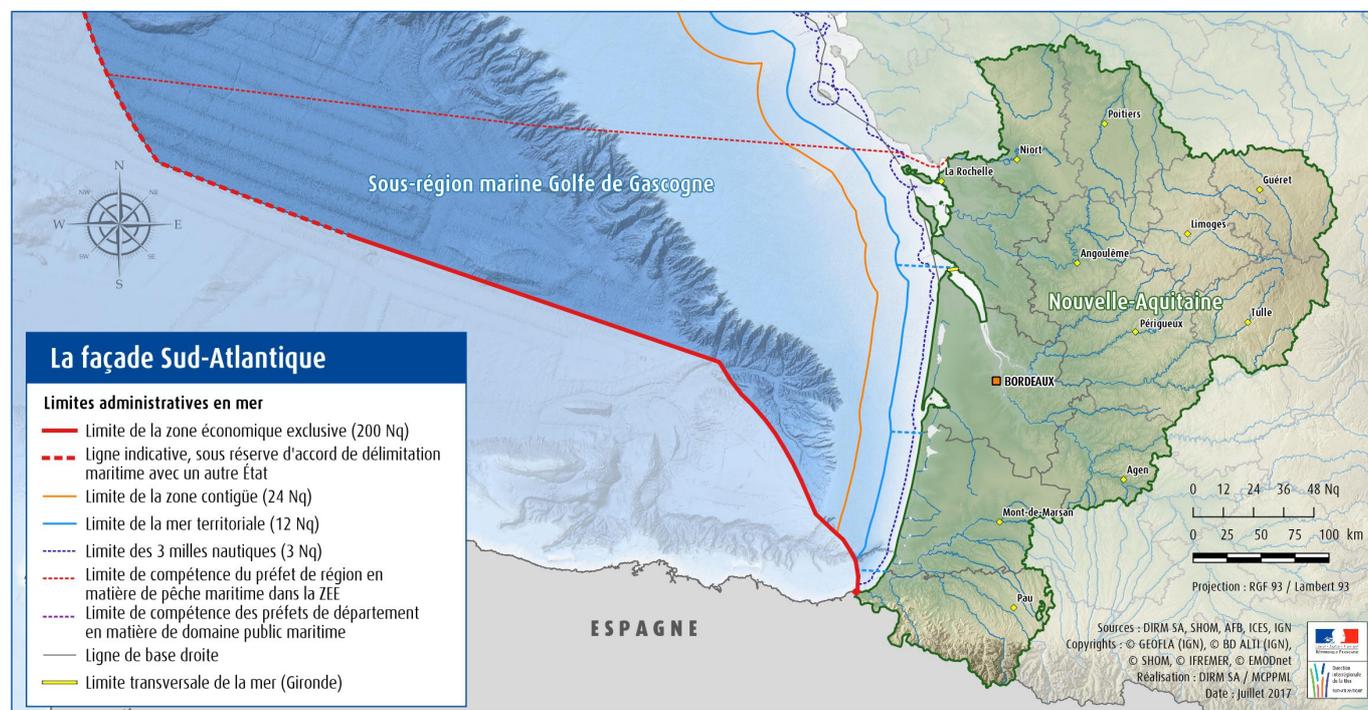
The South-Atlantic coast runs north-to-south and consists of more than 720 km of coastline, representing 14% of Metropolitan France's total coastline.

Its northern end is situated in Aiguillon Bay in the commune of Charron (Charente-Maritime department); its southern extremity is in Hendaye (Pyrénées-Atlantiques). It passes through the Nouvelle-Aquitaine region's four coastal departments, namely Charente-Maritime, Gironde, Landes and Pyrénées-Atlantiques.

The coast is home to 550,000 people, living in 140 coastal municipalities. Of these, 40 border an estuary (rivers Charente, Seudre, Gironde and Adour) or a shoreline lake.

The coast's maritime waters lie in the Bay of Biscay (Golfe de Gascogne) marine sub-region and account for nearly a quarter of all Metropolitan waters, with a combined area of 90,000 km² inside the exclusive economic zone (EEZ). These waters can be divided into four basic categories:

- the continental shelf, characterised by a gentle slope with few irregularities, with the sea floor lying at a depth between 0 and 200 m; the shelf width tapers as the coast extends southward (from a width of >200 km in the north to only 50 km in the south);
- the continental margin, in the form of a steep slope (with frequent submarine canyons) extending down to depths of up to 4000 m in only a few tens of kilometres;
- the abyssal plain beyond the continental shelf, which lies at even greater depths;
- the Gouf de Capbreton canyon, at the southern end of the Bay of Biscay is a long canyon extending into the continental shelf. It originates a few hundred metres from the entrance to the port of Capbreton and runs west for more than 250 km, into Spanish waters.



The maritime economy in Nouvelle-Aquitaine is a notable feature of the regional economy, generating more than 49,000 jobs, representing 2.1% of all employment in the region (Source: INSEE 2015 – Aquitaine regional directorate).

In the Nouvelle-Aquitaine region, coastal tourism accounts for more than 60% of maritime employment. The seafood sector is the second-largest employer, supporting 9,000 jobs. Ship-building and repairs is also well represented, supporting 3,900 jobs. Maritime and river transport accounts for less than 5% of regional maritime employment, a level equivalent to that of public-sector activities, which represent a total of 2,300 jobs, many of which in defence-related activities.

From a demographic perspective, the Atlantic coast has a population density of 198 inhabitants per square kilometre, below the average for coastal municipalities in Metropolitan France (285 people per km²). The figure is nevertheless one and a half times higher than the French national average (118 people per km²). This population density has increased significantly over a sustained period. Population density is not uniformly distributed throughout the coast; in particular, there are a high proportion of older people, with an age index of 1.26, compared with the average of 0.99 for Metropolitan France.

Key figures for the Southern Atlantic maritime economy

49,000 jobs in the maritime economy
(60% of which in tourism)

4,592 (working) professional French seafarers

€ 296 million in income from shellfish farming

€ 85 million in income from fish auction
markets

€ 800 million in income from the recreational
boating industry

20 million tonnes of goods processed by the
region's ports annually



Port de pêche de la Cotinière, Charente-Maritime ©Laurent Mignaux / Terra

1.1. Maritime and coastal activities

1.1.1. Exploitation of living resources

■ Fishing

The region's commercial fishing industry has two specificities. The ports in the Basque country are home to France's largest industrial fishing industry, revolving around 50 offshore fishing vessels. The remainder of the regional fleet, mainly consisting of inshore fishing boats, work the southern part of the Bay of Biscay, landing a high proportion of high value-added species. This industry has changed radically in recent years, with the introduction of numerous environmental measures. Renewing obsolete ships and scaling up sustainable fish stock management are the two major challenges on the path to sustainable fishing. Safe, energy-efficient vessels offering better working conditions are helping to increase the appeal of the fishing industry and related professions, and enhancing the value of their catch.

Appendix 9 maps

 [01. Socioeconomic overview of sea fishing](#)

■ Aquaculture and shellfish farming

Nouvelle-Aquitaine is Europe's largest shellfish producing region; it includes the Marennes-Oléron and Bay of Arcachon oyster growing areas, which together generate nearly €300 million in sales. There is also a smaller mussel growing industry in Charente-Maritime. Although far less well-developed than the previous activities, the region also accommodates some marine fish farming.

Aquaculture is dependent on water quality, which can be impacted both by anthropogenic pollution and by climate change. Restoring or maintaining water bodies in "good status" - in terms of both quantity and quality - is a crucial challenge. For the past several years, oyster and mussel growers have experienced unusually high mortality rates. Research programmes and monitoring networks have been set up to understand and mitigate this problem.



©Laurent Mignaux / Terra

Aquaculture can itself have environmental repercussions. Waste management (recycling and recovery), energy efficiency, maintaining the maritime public domain and restoring it after use are also major sustainable development challenges.

Successfully mastering these challenges will enhance the profession's attractiveness and more generally, improve public perception of the sector.

Appendix 9 maps

 [02. Aquaculture](#)

■ Seafood processing and sale

Seafood processing and sale businesses operate with multiple sources of supply, and the organisation of the downstream component of the seafood chain varies considerably.

The Southern Atlantic coast hosts five fish auction markets, handling more than 20,000 tonnes of produce with a value in excess of €85 million. Average sale prices are above the national average, due to the large proportion of high value-added species, indicative that catches are adequately valued.

Continuing the certification and labelling policy for fish products is a focus area for business development.

1.1.2. Exploitation of no-living resources

■ Material extraction

Deposits and the principal flows of marine aggregate are managed at the scale of the Bay of Biscay rather than the Southern Atlantic coast. Most marine aggregate found along the coast is sand, used primarily in the construction industry. Two concessions (Platin de Grave and Chassiron) are currently being operated, and an exclusive exploration permit has been granted offshore of the mouth of the river Gironde. The siliceous aggregate concessions have a surface area of 18 sq. km and a licensed volume of 4.7 million cubic metres.

Although the deposits offer considerable potential (3,000 million cu. m of siliceous sand and gravel off the coast from the Gironde and Adour) and demand is strong, the principal challenge is to reconcile the needs of extraction activities with environmental protection and the impact of such activities on the coastline.

The issue of sediments also concerns dredging operations carried out for port operation purposes. These operations are regulated and the related industrial process accurately

accounts for their environmental impacts.

Appendix 9 maps

04. Marine aggregate extraction on the Atlantic coast

■ Power generation

The Southern Atlantic coast offers significant wind, wave and marine current, estuarine and river hydropower potential. In view of this potential, the French government has committed to environmental studies and a public debate relating to the project for a 500 MW wind farm off the coast of Oléron, and has opened the SEENEOH experimental tidal power test facility near Bordeaux.

The Southern Atlantic coast's contribution to the objective set out in the Energy Transition Law relating to the development of marine renewable energy (i.e. 6000 MW in France by 2023) is a major issue in terms of both power generation and the fight against climate change.

Reconciling the development of marine renewable energy with existing and future activities is a challenge for the coast.

■ Oil and gas-related activities

Sizeable oilfields lie below the beds of certain coastal lakes in the Aquitaine region, such as the Etang Cazaux et de Sanguinet and the Etang de Parentis. The latter is France's largest oilfield, with a total output approaching 30 million tonnes in the mid-2000's.

There are also oil wells in the Bay of Arcachon, pumping more than 150,000 tonnes per year from a number of deposits.

1.1.3. Maritime transport and ports

The Southern Atlantic coast includes two large ports that provide a gateway for major international flows: Bordeaux and La Rochelle. Together with the Grand Port Maritime de Nantes, these ports set up an organisation for cooperation between Atlantic ports in order to serve western Europe. The coast also hosts also two decentralised port clusters: the port of Bayonne and the Rochefort Tonnay-Charente port complex. These four entities together handled 20 million tonnes of goods in 2016.

La Rochelle is France's sixth-largest sea port by goods tonnage.

Traffic is generated primarily by the grain and oilseed (45%) and petroleum products industries (28%). The port of Bordeaux handles between 8.5 and 9 million tonnes of goods annually. Hydrocarbon transit is the port's number one activity, followed by grain and oilseed handling.



Port activities sustain large numbers of direct and indirect jobs across a broad range of industrial activities and service businesses relating to ships and goods. More than 87% of goods are distributed by road, despite the negative consequences in terms of pollution, infrastructure wear, accidents, etc. The development of these ports' hinterlands remains dependent on the development of other land transport infrastructures (particularly rail freight infrastructure).

The main challenges facing these ports - which will probably require changes in governance - relate to improving links with their hinterlands and enhancing the competitiveness of and fit between port areas and activities.

Appendix 9 maps

03. Shipping

1.1.4. Maritime works

■ Maritime public works

Maritime public works include:

- works in the water (or sea), salt water dredging and submarine works,
- flood protection works,
- construction and renovation, in ports, of structures in contact with water: quays, breakwaters, dry docks, etc.

The purpose of such works is, firstly, to engineer the coastline to protect the population and coastal facilities of all kinds against storm surges, and secondly, to address the needs of the maritime transportation, fishing and recreational boating industries.

On the Southern Atlantic coast, this sector is heavily influenced by dredging activities at the ports (especially GPMB) on the Gironde estuary and by port investment projects, which are its main source of orders.

■ Submarine cables

Many submarine cables run through the Bay of Biscay marine sub-region, concentrated primarily along the Northern Atlantic-Western Channel coast.

An electrical interconnection project with a European strategic dimension is to be implemented between France and Spain by 2025, with the twin aims of improving security of supply and reducing carbon dioxide emissions. This 400 km link, of which 280 km via submarine cables, will increase interconnection capacity to 5 GW.

1.1.5. Ship-building

The boat- and ship-building industries are very diverse along the Southern Atlantic coast. They are mainly concentrated in two areas: the Charentes coast (and La Rochelle in particular); and the Bay of Arcachon and Bordeaux region.

All segments are represented, including the construction and repair of commercial civilian ships (for fishing, trade and passenger transportation), military vessels and recreational craft (including luxury yachts, sailboats, surfboards and canoes).

The sector mainly consists of very small businesses and SMEs, generating significant added-value for the Southern Atlantic coast. As exports account for a very large share of orders, this economic sector is sensitive to the international business climate.

Adapting the fleet to address the issues associated with the ecological transition is a challenge for the industry.

Appendix 9 maps

 [10. Businesses operating in the boat- and ship-building sector](#)

1.1.6. State action at sea

Government agencies are tasked with 45 offshore missions, mainly relating to maritime safety and security. Maritime safety centres on protecting people and the environment. It covers lifesaving, assistance to vessels in distress, search and rescue, maritime signalling and offshore civil defence activities via the ORSEC emergency response and POLMAR anti-pollution plans.

Maritime security includes action to prevent and combat unlawful acts targeting vessels, people or port facilities.

In light of these missions, optimising maritime monitoring resources is a key issue for the coast.

Appendix 9 maps

 [08. Operational resources for State action at sea](#)

1.1.7. Defence

Defence activities are carried out against a backdrop of threats facing the sea and coasts. In particular, such threats include:

- threats to sovereignty and the national interests of coastal States;
- threats to the safety of populations at sea and onshore.

The armed forces are tasked with addressing such threats by monitoring (from offshore to onshore) the maritime and air spaces bordering the approaches to metropolitan France. This mission contributes to the national maritime spaces security strategy adopted by the Interministerial Committee for the Sea on 22 October 2015. This strategy establishes guidelines for responding to threats and unlawful activities at sea.

Offshore defence activities on the Southern Atlantic Sea Basin typically consist of operations and trials conducted in designated areas. Most trials are carried out by the French Defence Procurement Agency (DGA), in onshore facilities and at sea in designated areas off the coast of Gironde and the Landes.

1.1.8. Recreational activities

■ Recreational fishing

Recreational sea fishing is a long-established activity on the Southern Atlantic coast, and practitioner numbers have increased significantly in recent decades, reflecting the growth in seaside tourism. This activity takes many different forms, including rockpooling, shore angling, boat fishing and spear-fishing. There are a few local specificities, such as rockpooling nets and stone-wall fish traps.

These can be considered large-scale activities in certain areas of the coast, impacting fish stocks as well as nontargeted species and habitats (honeycomb reef worms, seahorses, zostera, etc.).

Generally poorly understood, such activities have in recent years been the focus of a variety of initiatives to increase public awareness and knowledge, and to reduce impacts as part of the effort to address the environmental issues associated with them.

■ Leisure boating and water sports

Leisure boating and water sports account for a significant share of the Southern Atlantic coast's economic and tourist activity directly relating to the sea. The Minimes marina in La Rochelle is the region's largest marina, and indeed the largest in Metropolitan France, with 5,100 berths. The Bay of Arcachon lagoon is another centre for boating and sailing, with 2,700 mooring rings in the port of Arcachon alone.

Boating is this sector's main growth driver, hampered by a shortage of harbour mooring rings and marina berths.

As well as boating, numerous other activities (canoeing, stand-up paddleboarding, kitesurfing, dinghy sailing, catamaran sailing, surfboarding, surfing, diving, etc.) are available along the coast. Enabling these varied uses to cohabit successfully requires stakeholders to be informed about safer, more socially responsible practices.

As well as developing marina capacities, marina operators must give greater consideration to environmental issues when planning development projects, factoring in new and expanding uses.



Appendix 9 maps

05. Marinas

1.1.9. Coastal and maritime tourism

The Nouvelle-Aquitaine coast is a major tourist destination, due to the picturesque landscapes of its natural expanses, the presence of internationally renowned sites and its seaside resort heritage.

Tourism is a major economic resource for the Southern Atlantic coast, sustaining more than half of all jobs relating to the region's maritime economy. The strait and islands of the Pertuis of Charentes, the mouth of the river Gironde, the Bay of Arcachon and the Basque coast are among the most popular destinations along the Southern Atlantic coastline.

However, due to the severe pressures exerted on the coastline, a sustainable development strategy is necessary in order to reconcile the conservation of natural spaces and resources with tourist traffic and infrastructure capacity. The aim is to durably preserve the region's tourist appeal and related economic growth, while addressing coastline protection challenges. Solving this equation is essential in order to maintain tourism and adapt the tourist offering to changing demand, against a backdrop of international competition in the coastal tourism sector.

Appendix 9 maps

14. Tourist accommodation capacities in coastal municipalities

1.1.10. Marine environment management and monitoring

In recent years, there has been an increase in marine environmental protection policies, including the designation and subsequent management of marine protected areas. With effect from 2015, the Directorate for Water and Biodiversity oversees the national policy for monitoring and supervision of marine environmental protection activities, to ensure that conservation objectives are achieved. A monitoring plan for the Southern Atlantic coast sets monitoring priorities and coordinates the activities of the various entities tasked with monitoring State action at sea.

1.1.11. Primary land-based coastal activities

■ Coastal agriculture and forestry

Producing a wide range of crops (including field crops, wine and livestock) and working the Landes de Gascogne forest, the Southern Atlantic coast's agricultural and wood pulp industries help to drive the local economy and enrich coastal communities.

Farms in coastal towns and villages tend to be small and support large numbers of jobs. Furthermore, coastal agriculture plays a role in structuring and maintaining landscapes, preserving a specific biodiversity and preventing wildfires. It also contributes to the region's cultural heritage.

Access to land is a key issue for coastal agriculture, as this activity faces competition from alternative uses.

Most woodland areas located along the coast but the wood industry is having to cope with foreign competition and the effects of repeated storm damage in recent years. Preserving wooded dunes is another major challenge, in the light of this type of land's specificities in terms of biodiversity, hinterland protection and public access. Regulatory measures to combat the loss of natural woodland along the Southern Atlantic coast have been introduced, alongside initiatives promoting the recovery and diversification of forestry products and commercial outlets.

■ Industry

The industrial sectors in the departments located on the Southern Atlantic coast tend to be less well-developed than on the other coasts, and are diversified in five main activity sectors: agribusiness; metalworking; pharmaceuticals and chemistry; wood and paper; and electrical and electronic equipment manufacturing. In coastal municipalities, the

industrial sector employed 19,728 people (representing 8.8% of total employment) in 2013, led by metalworking and the manufacture of metal products (21.8%).

Industrial activities are potential sources of pollution, particularly in the wood, paper, printing, agribusiness, metalworking and metal product manufacturing sectors. For the marine environment, it is crucial that the industrial sector adequately addresses environmental issues, particularly waste and emissions management.

■ Urbanisation of the coastal fringe

Due to its attractiveness and resulting concentration of populations and activities, the Southern Atlantic coast is subject to severe pressures, and hence, extensive urban sprawl to the detriment of farm land and the natural and forest environments. This phenomenon is particularly pronounced in the coastal communities of the Pyrénées-Atlantiques and Charente-Maritime departments.

Managing urbanisation with appropriate consideration for the accommodation capacity of coastal areas is a challenge for the coast.

1.2. Marine and coastal ecosystems

■ Sea basin description

The Southern Atlantic sea basin features a wealth of marine and coastal habitats.

The Bay of Biscay is particularly representative of the sedimentary habitats that account for more than 95% of all marine habitats. A distinction can be drawn between the Gironde and Landes coasts, which together with the continental shelf are influenced by the ocean, and more sheltered areas (such as straits, bays and estuaries) with silty environments offering a wide variety of habitats conducive to the development of aquatic life. Examples include France's largest *zostera* meadows (the Bay of Arcachon is home to 48% of France's dwarf *zostera* beds, covering more than 1,300 ha of the Sea of Pertuis), honeycomb reefworm reefs, salt marshes (3,300 ha in the Sea of Pertuis and the Gironde plume, and 800 ha in the Bay of Arcachon) and other, smaller habitats such as maërl and flat oyster beds. The steep cliffs rising out of the ocean along the Basque coast also contrast sharply with the sandy shores of the Landes and Gironde. This area is home to numerous reefs as well as the Gouf de Capbreton, a submarine canyon very close to the shore. There are only 30 known coastal canyons in the world.



These coastal habitats are enriched by river plumes, including that of the Gironde, which forms Europe's largest estuary. These land-sea interface areas are preferred spawning grounds and nurseries for many fish species.

Further offshore, several geomorphological features are worthy of note:

- The Rochebonne shoal, consisting of rocky peaks on the continental shelf offering exceptionally diverse habitats;
- Offshore carbonated rock structures formed by releases of cold methane (the only such structures found in France);

- The canyons of the Southern Atlantic coast located on the continental slope, an area of remarkable biodiversity, are particularly rich in gorgonian corals, crinoids, sponges and oysters.

The diversity and wealth of these environments foster the development of functional areas for marine species. The Southern Atlantic coast has a responsibility at European level for conservation of seven species of migratory fish that live alternately in freshwater and salt water: salmon, lamprey, allis shad and twait shad, European sea sturgeon, sea trout and eel. The area supports very large populations of these fish. More specifically, the Sea of Pertuis and the Gironde estuary are home to the last remaining wild European sea sturgeon.

The Southern Atlantic coast also plays a key role in maintaining sea bird populations throughout the year. Five wintering sites located in the Sea of Pertuis and the Bay of Arcachon are listed as accommodating internationally significant populations. For example, 25% of the global population of dark-bellied brent geese overwinter in the Bay of Arcachon. During the nesting season, France's largest colony of Sandwich tern congregates on the Arguin Sandbank (representing more than 20% of the total population), while 10% of the national population of pied avocets gather in the Sea of Pertuis. Offshore, remarkable species such as the globally threatened Balearic shearwater may be observed overwintering throughout the Bay of Biscay, with a particular concentration near the Gouf de Capbreton canyon.

Regarding marine mammals, the southern part of the Bay of Biscay is a major area for whales (beaked whales, finwhales, pilot whales and sperm whales), with some of the highest concentrations of species observed anywhere in Europe. Large numbers of dolphins and porpoises are also present all across the shelf.

Lastly, several species of elasmobranchii (rays and sharks), the worldwide conservation statuses of which are very poor, are found in the Sea of Pertuis, the Bay of Arcachon and on the Rochebonne shoal.

■ Assessment of the environmental status of marine and coastal habitats

Several European directives define the "good environmental status" of marine and coastal habitats. The Water Framework Directive (WFD) aims to achieve good environmental and chemical status for coastal and transitional waters; the Habitats Directive and the Birds Directive aim to achieve good conservation status for habitats and species considered to be of European interest; the Marine Strategy Framework Directive (MSFD) uses 11 descriptors to define "good status" for marine waters. Numerous measures arising out of these directives, including water management and development (framework) plans, the marine environment action plan (covering the Bay of Biscay), marine protected areas and several action plans to combat diffuse pollution and macrowaste or ensure ecological continuity have been implemented. Various monitoring networks have been set up to closely monitor any changes in environmental status. Their aim is to develop and share knowledge, promote environmentally sound practices and protect marine and coastal environments.

Appendix 9 maps

16. Marine protected areas



Corniche basque ©Laurent Mignaux / Terra

The Marine Environmental Action Plan is based on 11 descriptors

Biodiversity (D1)	Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions
Non indigenous species (D2)	Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems
Commercial species (D3)	Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock
Food webs (D4)	All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity
Eutrophication (D5)	Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters
Integrated of sea floor (D6)	Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected
Hydrographic conditions (D7)	Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems
Contaminants (D8)	Concentrations of contaminants are at levels not giving rise to pollution effects
Health considerations (D9)	Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards
Marine litter (D10)	Properties and quantities of marine litter do not cause harm to the coastal and marine environment
Noise (D11)	Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment

1.3. Sites, landscapes and natural heritage

■ Coastal sites and landscapes

The Southern Atlantic coast has a wide variety of coastal landscapes dictated by the region's geological past. These landscapes were modelled by the natural elements, and then transformed by development activities (often relating to tourism). Use of coastal areas has changed radically, increasing urban pressure. Erosion along the coastal strip also impacts the landscape.

Protecting the coastline's landscape value is crucial, particularly with regard to its very rich natural component. Giving appropriate consideration to uses and trends along the coast is essential.

Land development policies help to address this need, in particular by introducing regulations and other measures relating to the onshore and marine environments as well as the land-sea interface.



The Southern Atlantic coast also hosts a highly diversified cultural heritage (including lighthouses, seaside resorts, oyster growing villages, historic ships, underwater heritage, etc.) as well as numerous listed sites noted for their landscape, artistic, historical or scientific interest, picturesque qualities or presence in legends. Promoting the coast's landscape and heritage potential is a major issue that influences the territory's identity and attractiveness. Consequently, the process of registering outstanding sites continues, in turn providing additional protection. In this respect, a project to have the Cordouan lighthouse acknowledged as a UNESCO world heritage site, due to its exceptional value, is currently being studied.

Appendix 9 maps

[09. Heritage conservation](#)

■ Management of the maritime public domain and unrestricted access to the shore

The Southern Atlantic coast's natural maritime public domain is a popular yet sensitive space. The "Loi Littoral" coastline legislation aims to preserve the shoreline's natural status. This space is managed by the French State, which can request action by the coastal protection agency (Conservatoire du Littoral) or delegate management to local authorities.

Due to the vulnerability of coastal environments to the various sources of pressure, a balance must be struck between conservation measures and efforts to enhance the coast's appeal and promote tourism-related economic development. Accordingly, work to open the coastal trail must continue, providing pedestrians with a right of way along the coastline, with shared management of the trail's development and upkeep and initiatives to inform the public about its route. Furthermore, in light of the effects of climate change, this management must allow for predictable changes to the shore as the coastline recedes.

The natural maritime public domain is also subject to many different uses and forms of occupancy. As a result, it is a focal point of various sustainable development targets relating to coastal economic activities, land management, prevention of natural and health risks, environmental conservation and protection of coastal and marine natural heritage.

Implementing integrated, sustainable management of the natural maritime public domain and coordinating with coastline management are major public policy issues.

1.4. Risks

Coastal communities are exposed to a higher level of risk than other areas. The Southern Atlantic coast is subject to numerous hazards (flooding, storm surges, erosion, landslides, forest fires, accidents, pollution, etc.) with increasingly severe potential impacts (on housing, economic activities, etc.), resulting in a high level of risk along the coastal fringe. However, this exposure is unevenly distributed in terms of the nature and severity of the hazards and their potential impacts.

The main natural risks are coastal erosion and storm surges in the land-sea interface, in sensitive areas such as estuaries and other low-lying areas, as well as areas with a strongly negative sediment budget. It is essential to consider natural risks in planning activities, to increase the resilience of coastal territories.

The Southern Atlantic coast also accommodates many industrial activities that create technological risks. Some of these activities are located in areas heavily exposed to natural risks. As a result, implementing appropriate safety measures and enhanced monitoring are priority issues.

Regulatory measures such as technological risk prevention plans have been implemented to safeguard the public and protect property.

Coastal areas are also particularly susceptible to health risks, due to their location at the interface between the marine environment, river environments (including numerous estuaries) and onshore environments, the large number of potentially polluting activities and the size of the population. To address these major public health issues, vulnerability profiles and alert mechanisms have been introduced to assess the sensitivity of seaside resorts to pollution and prevent any risks. Such initiatives must be rolled out across shellfish farming and fishing areas, in order to better understand the environment and define water quality protection and improvement measures aimed at ensuring that all uses are sustainable.

Developing a risk awareness culture among year-round and seasonal coastal population is essential, in order to more effectively identify future changes prompted by climate change (toxic algal blooms, bacterial and viral proliferation, rising sea levels, etc.).

Lastly, concerted, joined-up thinking is needed in order to protect the population in view of the increasing frequency and intensity of climate events, combined with population growth and expanding coastal economic activity. Several commitments have been made, including implementing national or regional risk management strategies, and these must be rolled out at local level.

Appendix 9 maps

 [06. Evolution of the coastline](#) - [07. Vulnerability to the coastal risks](#)



Erosion de la côte, Soulac-sur-Mer, Gironde ©Sud-Ouest

1.5. Research, knowledge, innovation and training

■ Research and innovation

Because knowledge is the key to understanding, multiple information gathering programs focussing on the challenges facing the Southern Atlantic sea basin coast have been established. In addition, programmes to collect data relating to the marine natural environment and the changing coastline are also being developed. Lastly, the growing popularity of participatory science is yielding new data and posing new questions, and has led to the creation and rapid development of a new type of monitoring and alert network along the coast.

The mass of data collected via these programs must be banked and processed. Data processing tools are essential in order to identify, develop and share knowledge required for integrated management of the coast.

A wide variety of multidisciplinary research programmes are conducted by the coast's research institutions (including joint research units run by the CNRS and the Universities of Bordeaux and La Rochelle, Pau and the Pays de l'Adour, IFREMER, IRSTEA, INRA and LabEx COTE). To facilitate collaborative research covering the major issues facing coastal areas, a network of scientific, advisory, non-profit and financial partners has been set up on the Aquitaine coast (Réseau de Recherche Littorale Aquitaine). Lastly, there is a project for an Aquitaine oceanographic cluster bringing together multiple coastal research partners to create a large new marine research station. Marshalling the efforts of regional stakeholders through these networks and programmes is a major goal, in order to effectively coordinate research at coastline scale and address local issues.

For the Southern Atlantic sea basin, in view of the economic context and increasing international competition, innovation is a key challenge, particularly in the ship-building sector. Significant efforts have been made to introduce an environmental dimension to the various ship-building industries, in order to unlock environmentally friendly blue growth.

Furthermore, an ambitious multidisciplinary scientific innovation programme has been launched, under the banner "Investing for the future". Numerous local and regional industrial and technological innovation clusters relating to the sea and coast have been established. The Nouvelle-Aquitaine regional authority coordinates these initiatives and stakeholders via a "blue growth" cluster.

■ Maritime training and awareness

Transport, fishing/shellfish farming and professional leisure boating activities along the Southern Atlantic sea basin sustain maritime employment and require ad hoc training.



Maritime training for seafarers is provided via secondary and higher education, by the network of maritime academy schools and the École nationale supérieure maritime (ENSM). These institutions offer a wide range of initial and ongoing training courses enabling sailors to specialise and build careers. "VAE" schemes that validate prior experience of maritime activities enable maritime professionals to establish a level of proficiency. Furthermore, maritime training institutions are updating the baselines for their courses, regarding maritime safety and security in particular, in order to comply with requirements stipulated in international agreements, and to make maritime professions more attractive by addressing seafarers' needs and expectations. In addition to the training aspects, the shortage of seafarers and recruitment difficulties are obstacles for shipbuilders.

Government departments and operators, local authorities, maritime professionals and non-profit organisations conduct awareness-raising initiatives for sea users. This communication effort also targets the general public, via events promoting the discovery of the natural environment, maritime culture and a better understanding of maritime and coastal issues. Raising public awareness regarding marine environmental protection is a major issue with a view to ensuring that the man in the street realises the riches and potential offered by the marine environment.

Appendix 9 maps

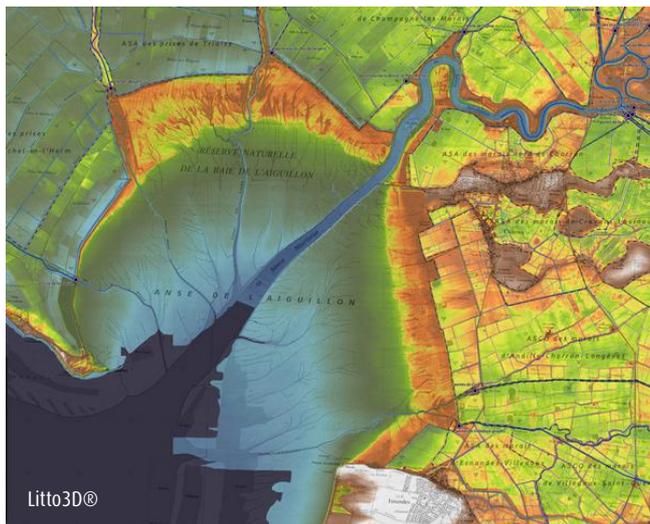


[12. Maritime employment and vocational training](#)

1.6. Local planning or integrated management initiatives for the sea and coast

■ Legal framework

The National Strategy for the Sea and Coast (SNML) was introduced by the "Grenelle 2" legislation (Law n° 2010- 788 of 12 July 2010), marking a national commitment to the environment. This legislation also introduced the sea basin strategy document.



Article L. 219-3 of the French Environmental Code states their purpose. The sea basin strategy document defines the objectives and corresponding measures relating to integrated management of the sea and coast - for each of the sea basin defined in the national strategy for the sea and coast - in accordance with the strategy's principles and orientations.

The following article, L. 219-4, defines its scope :

- Plans, programmes and schemes applicable within the scope of a maritime coast, projects located and licenses issued within said scope and administrative decisions taken in relation to the management of the marine space shall be compatible with the objectives and measures of the sea basin strategy document.

- If liable to have impacts within the scope of a maritime coast, plans, programmes and schemes applicable to onshore spaces, as well as projects located and licenses issued within such spaces, shall reflect the objectives and measures of the sea basin strategy document.

In practice, the sea basin strategy document is the first tool to organise planning that covers the entire maritime space under French jurisdiction, as well as related activities of all kinds. As such, it provides the overall consistency that cannot be achieved by sectorspecific planning.

■ Planning tools

Several strategic tools available to urban planners feature a range of measures and guidelines relating to the coast or maritime domain (local urban development plan (PLU), territorial cohesion plan (SCOT), etc.).

In theory, these urban planning documents ensure that due consideration is given to the coast and the maritime domain, and that documents relating to different scales are coordinated. In practice, coastal and maritime challenges are poorly integrated into communal and intercommunal planning projects, and little consideration is given to interactions between the onshore and maritime environments and activities.

On the Southern Atlantic sea basin, the interface between the maritime public domain and onshore spaces is crucial, particularly in order to ensure satisfactory water quality along the coastal fringe. This interface must be addressed in strategy and planning documents, and such documents must be more effectively coordinated.

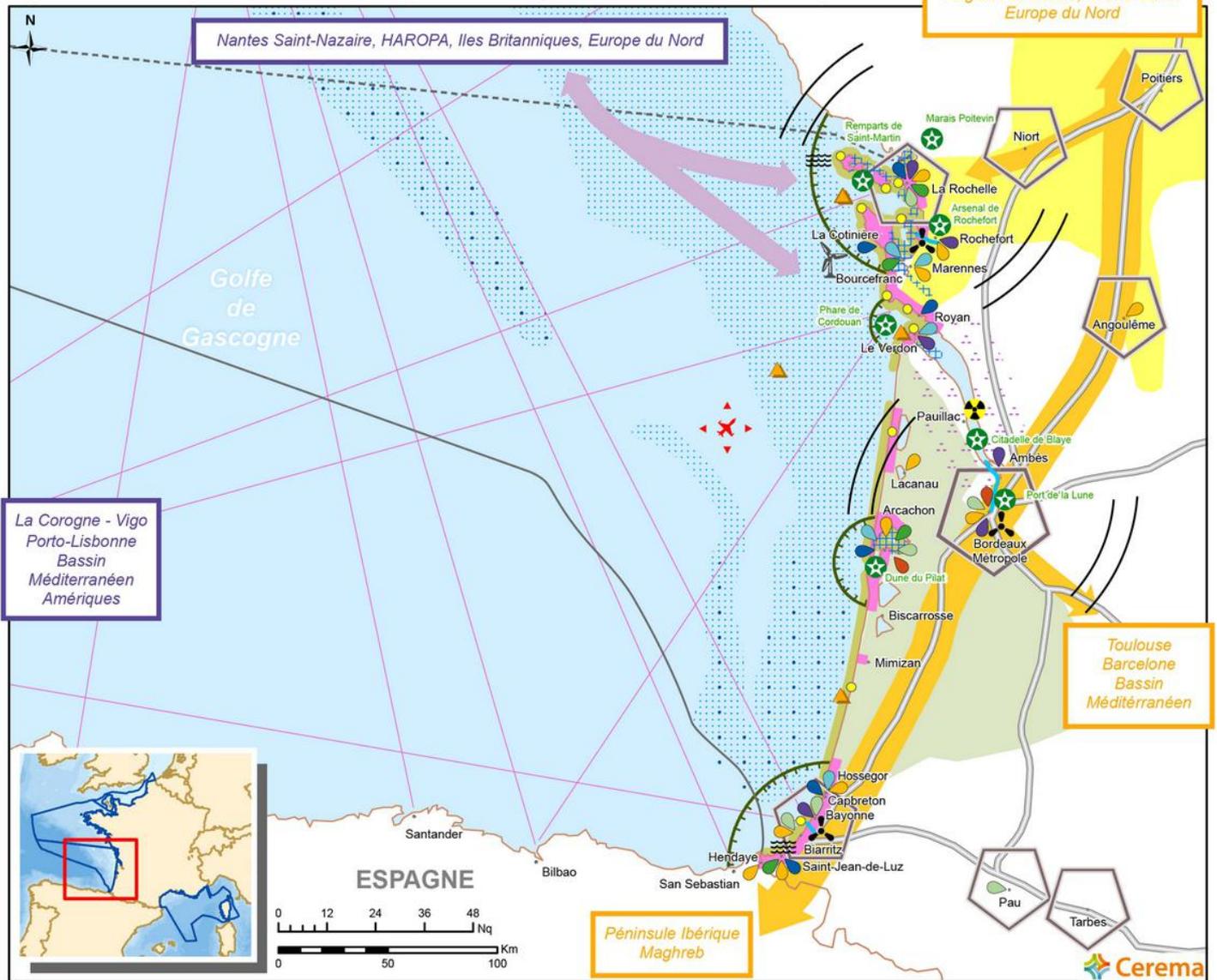
The sea basin strategy document establishes the frame of reference, at the scale of the coast, for planning relating to the maritime space and land-sea interface, with the aim of enabling integrated management of the coastal and maritime space. As well as determining the legal basis for lower-ranked documents, it is intended to assist the planning activities of public authorities and project sponsors.

Appendix 9 maps

13. Status of local SCoTs

The following pages contain maps showing the various activities carried out along the Southern Atlantic sea basin, as well as ecological habitats and species of concern.

Synthèse des enjeux socio-économiques de la façade maritime Sud-Atlantique



Sources : DIRM SA, SHOM - Copyrights : Mapinfo Corporation - Réalisation : Cerema Normandie Centre - Date : 05/2018 - Projection : RGF 93 / Lambert 93

La façade Sud-Atlantique : le développement d'une économie bleue, respectueuse des équilibres écologiques

Enjeux économiques internationaux et transfrontaliers

- Principales dynamiques de flux économiques par voie maritime : accès aux grands ports maritimes de Bordeaux et La Rochelle
- Flux maritimes transversaux
- Grand port maritime relié à l'international - pôles industrialo-portuaires
- Dynamiques économiques transfrontalières majeures par voie terrestre (partie Sud de l'Arc Atlantique)
- Dynamiques économiques transversales majeures par voie terrestre
- Zone de production agricole pour l'export par voie maritime (céréales)
- Cohabitation des usages transfrontaliers (pêche)

Patrimoine, tourisme et loisirs nautiques

- Sites touristiques emblématiques (UNESCO et Grands sites)
- Patrimoine littoral : frange côtière des communes littorales présentant des intérêts historiques, paysagers ou environnementaux
- Principaux phares classés et en service
- Espace littoral à forte fréquentation touristique
- Bassin de navigation de plaisance

Gouvernance et défense

- Accord de délimitation des espaces maritimes entre états ou décision d'une juridiction internationale
- Limite de façade maritime
- Centre d'essais des Landes

Les spécificités économiques de l'interface terre-mer pour la façade Sud-Atlantique

Gestion durable des ressources marines et littorales

- Pêches professionnelles (principaux secteurs)
- Conchyliculture
- Extraction de granulats marins (en cours d'exploitation ou à l'étude)
- Production viticole de l'écosystème estuarien (Médoc, Blayais, Bourgeais, Cognac, Pineau)
- Zone forestière et sylviculture (pin maritime)

Énergies marines renouvelables - Énergies terrestres non renouvelables

(Site existant, projet ou à l'étude)

- Éolien posé
- Centrale nucléaire
- Hydrolien
- Houlomoteur

Les filières maritimes de la façade maritime

- Pêche et transformation des produits de la mer
- Aquaculture
- Transports et industries
- Filière nautique et filière glisse
- Formation maritime
- Pôle universitaire, formation, recherche sur la mer et le littoral
- Défense

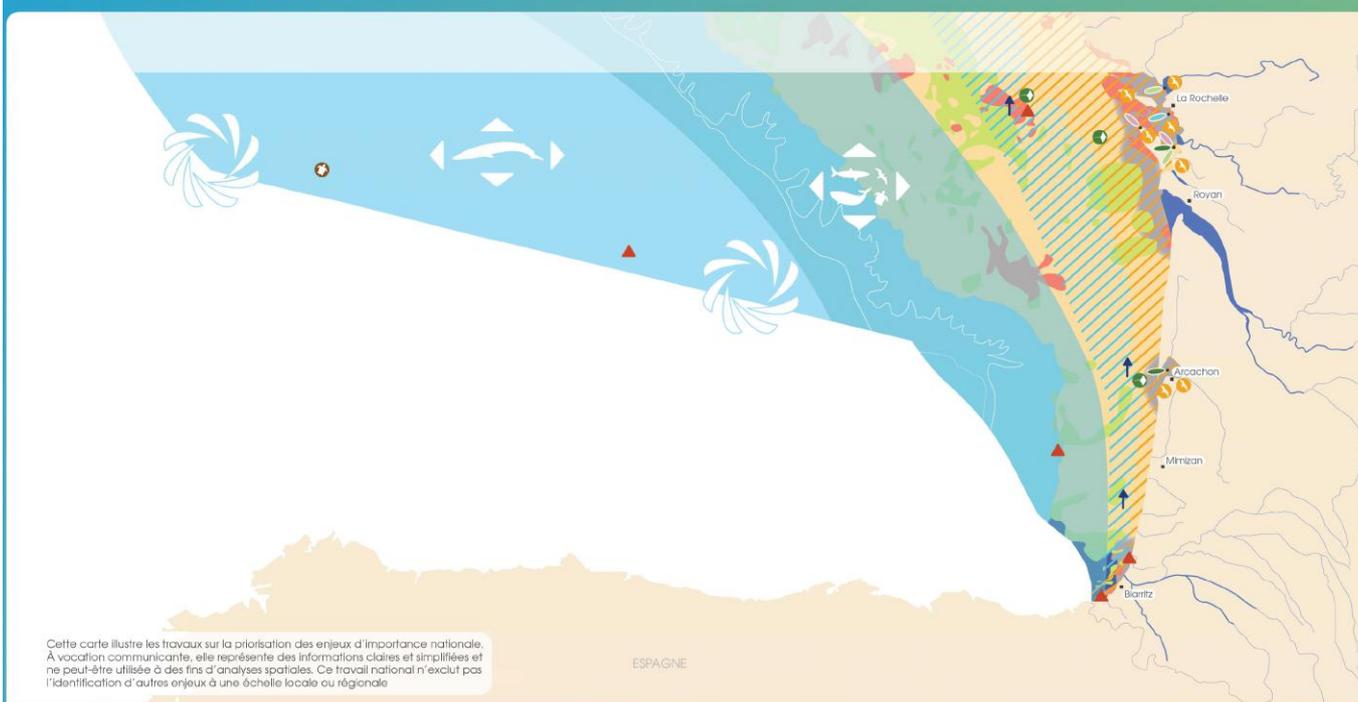
Les marchés de la façade maritime

- Principales aires urbaines du littoral
- Principales aires urbaines de l'interland
- Agglomération bordelaise, Grande métropole régionale

Les axes majeurs de la façade maritime

- Principaux axes de transport (fer, autoroute)
- Accès fluviaux aux ports de commerce

ENJEUX ÉCOLOGIQUES EN SUD ATLANTIQUE



Espèces et réseaux trophiques

- Colonies d'oiseaux marins et limicoles
- Alimentation des oiseaux marins
- Estuaires
- Cours d'eau
- Enjeux pour les tortues

Enjeux pour les oiseaux marins

Enjeux pour les amphihalins

Enjeux pour les élasmobranches

- Petits delphinidés en hiver
- Rorqual commun
- Enjeux pour l'ensemble de la megafaune

Enjeux pour les mammifères

Habitats

- Roches et autres substrats durs
- Sédiments meubles (vases, sables, cailloutis, sédiments grossiers)
- Vases du circalittoral
- Hauts-fonds rocheux et fosses

Conditions hydrologiques et habitats pélagiques

- Apports fluviaux et baies macrotidales
- Tourbillon de moyenne échelle
- Upwelling

Enjeux multiples

- Talus océanique
- Enjeux pour les habitats profonds. Zone fonctionnelle importante pour les mammifères marins, les oiseaux et les grands pélagiques**

- Zostères
 - Huîtres plates
 - Hermelles
 - Prés salés
- Habitats particuliers côtiers à enjeu fort ou majeur**

Source : AFB
Fonds cartographiques : AFB, Shom, Sandre
© AFB, 2018

0 100 kilomètres
50 milles marins
Projection cartographique : WGS84 / Pseudo Mercator
AGENCE FRANÇAISE POUR LA BIODIVERSITÉ
ÉTABLISSEMENT PUBLIC DE L'ÉTAT

1.7. Interactions between activities and the environment

■ Interactions between activities



Multiple activities are carried out in the maritime, generating interactions between them. These interactions may be spatially and/or temporally compatible, or they may be a source of conflicts of use.

It is essential to consider the temporality of activities when planning the maritime space and interactions between activities. A distinction can be drawn between two different types of temporality: firstly, temporality based on periods of the year and hence the calendar (for example, fishing for certain species may be permitted during a specific period; similarly, in maritime transportation and tourism, activity levels are subject to seasonal fluctuations); secondly, temporality based on an activity's internal calendar (for example, the construction, operating and decommissioning phases of a marine renewable energy project; aquaculture cycles, etc.). As a result, activities may be incompatible at certain times of the year while cohabiting smoothly the rest of the time.

Generally, the main conflicts of use occur between :

- leisure boat users and offshore shellfish farmers (recreational boats versus oyster boats) and on the shoreline (mooring areas versus oyster racks) ;
- leisure sailboats and motor boats ;
- leisure boats and bathers ;
- leisure boats, anglers and commercial fishing boats ;
- users and managers of natural spaces.

Along the Southern Atlantic sea basin, two areas appear to be particular sources of potential conflicts, due to the high number of activities carried out in them : the Sea of Pertuis and the Bay of Arcachon. These areas are also subject to very pronounced seasonality: summertime tourist traffic exacerbates conflicts of use, particularly between recreational boat users and oyster growers.

Some activities are incompatible within a particular area. For example, shipping is incompatible with offshore wind farms. As a result, shipping traffic must not pass through areas containing marine renewable energy infrastructure. This restriction notably applies to the natural marine park of the Gironde estuary, the Sea of Pertuis and the area corresponding to the continental shelf.

However, marine renewable energy can generate synergies with ports, due to the port activities that it generates, including the provision of ships and plant for the construction and subsequent maintenance of offshore facilities.

Shellfish farming requires certain activities such as MRE, dredging and dredged sediment dumping to be limited, but can be carried out alongside recreational activities and tourism (bathing, rock-pooling, etc.), subject to the customary precautions being taken.

Similarly, in area of the sandy coast and Basque coast, commercial fishing activities are entirely compatible with recreational and tourist activities, subject to compliance with applicable regulations.

As well as interactions between wholly maritime activities, onshore-offshore conflicts relating to management of water resources exist between oyster growers and farmers. Oyster growers are dependent on the quality and quantity of water flowing to them via rivers. Accordingly, water usage upstream directly impacts oyster production downstream. Such conflicts are particularly acute during droughts, when larger-than-normal quantities of water are extracted for crop irrigation. The use of chemical inputs is also detrimental to water quality, with repercussions for the coast's shellfish farming industry.

Consequently, all economic development is predicated on an ecosystemic approach that strives to overcome conflicts of use by promoting synergies and cooperation between stakeholders.

Appendix 2

[Scientific and technical overview](#)

■ Interactions between activities and environment

Pressures exerted by cable-laying
Physical disturbance of the sea bed: abrasion and turbidity caused by cable trenching: the abrasion-related pressure is temporary, confined to laying, raising and maintenance operations. May increase turbidity
Submarine noise during installation and maintenance: less impact than noise from shipping, marine aggregate extraction and offshore structures
Release of hazardous substances: resulting from wear of old, untrenched cables (heavy metals and other chemical elements) or cable protection materials (iron or polymer), or from salt water corrosion
Temperature increase and generation of electromagnetic fields (in the case of power cables)
Materials and particles forced into suspension

Pressures exerted by marine aggregate extraction
Materials and particles (including nutrients, micropollutants and micro-algae) forced into suspension: increased turbidity
Eutrophication
Noise (from ships)
Modifications to the morphological and bathymetric profile and nature of the sea bed
Catching or mortality/injuries inflicted on targeted or non-target wild species (by commercial and recreational fishing as well as other activities)
Erosion and coastline modification

Pressures exerted by ship-building
Release of hazardous substances: chemical contaminants present in anti-fouling paint or used during ship repair operations.

Pressures exerted by power generation
Noise and vibrations created during the construction and operating phases
Modification of the sea bed while preparing the ground for the facility
Materials and particles forced into suspension, increasing turbidity and fouling
Damage to habitats
Release of chemicals via the antifouling paint applied to MRE structures to prevent growth of organisms that might otherwise impair their operation or obstruct sacrificial anodes
Risk of collisions with birds and bats
Disruption to wildlife: certain species are forced to avoid wind farms, in some cases altering and extending their migratory paths due to the barrier effect; potential loss of offshore functional areas for birds

Pressures exerted by shipping
Constant background noise in the ocean
Collision between high speed ships (e.g. ferries) or freight ships and whales
Waste emissions
Risk of introduction and spread of non-native species via ballast water, sea-chests and biofouling on vessel hulls
Release of pollutants, whether intentionally or accidentally due to collisions, damage or grounding, or via atmospheric deposition of nitrogen

Pressures exerted by port activities
Release of hazardous substances relating to operation and maintenance activities: runoff water from handling and service areas; fuelling
Waste emissions: in principle, only limited pressure from certified marinas committed to the "Blue Flag" programme

Pressures exerted by maritime works
Noise
Waste emissions
Disruption caused to wildlife by human presence
Modification of hydrographic conditions
Release of hazardous substances
Risk of introduction or spread of non-native species

Pressures exerted by commercial fishing
Materials and particles forced into suspension
Displacement of organisms
Modification of the sea bed: loss of substrate
Disruption to wildlife
Waste emissions: macro-waste
Release of hazardous substances: hydrocarbon contamination; alteration of biogeochemical cycles
Catching or mortality/injuries inflicted on targeted or non-target wild species (by commercial and recreational fishing as well as other activities)
Physical disruption to organisms

Pressures exerted by leisure fishing
Damage to habitats and biological communities
Over-fishing
Risk of introduction or spread of non-native species

Pressures exerted by aquaculture

Nutrient releases

Damage to habitats

Waste emissions

Risk of introduction or spread of non-native species

Pressures exerted by tourism

Exacerbated concrete sprawl resulting from severe demographic pressure and demand for land

Environmental release of hazardous substances: synthetic and non-synthetic compounds as well as biologically active substances (swill, sewage and waste water)

Introduction of microbial pathogens

Waste emissions

Disruption to wildlife (visual, light and sound impacts)

Modification of the sea bed: ship moorings and anchorages causing damage to habitats

Pressures exerted by industrial activities

Release of hazardous substances: volatile organic compounds, PAHs and persistent organic pollutants

Waste emissions

pollutions thermiques : prélèvement de volumes d'eaux non négligeables restitués aux milieux à des températures différentes de celles d'origines
Heat pollution: extraction of non-negligible volumes of water subsequently returned to the environment at a different temperature

Pressures exerted by concrete sprawl

Release of hazardous substances: atmospheric emissions (pollutants and greenhouse gases)

Waste emissions

Chapter 2 Vision for the Sea Basin

Background

The purpose of the Southern Atlantic sea basin strategy is to define and implement an all-round development project for our coast by 2030.

To achieve this goal, it is important to fully harness the many available levers, which include well-preserved natural spaces and cultural heritage, dynamic industries that are open to innovation, and strong identities with genuine significance for the coast.

To date, the public authorities have focused on the good environmental status of the marine environment, and the means of achieving, maintaining or restoring that status.

When producing the sea basin strategy, the time frame was extended, in order to include planning for maritime spaces. This planning, covering the coastal fringe and the related coastal risks, can yield synergies between the various activities carried out on the coast. In particular, it includes defence activities, especially activities relating to trials.

The sea basin strategy is set out in a document and is subject to review every six years. Due to the strategy's goal and the legal basis that it provides for other planning documents, a longerterm vision is required, culminating in 2030. This vision is described in the three major aspects of the National Strategy for the Sea and Coast (SNML).



1 A requirement : Preserve exceptional coastal and marine heritage

Good water quality for all stakeholders

The quality of fresh water exiting rivers in the Adour-Garonne and Loire catchment basins directly impacts the good environmental status of the Southern Atlantic coast's marine environment. Additionally, water extraction upstream in rivers affects the volumes of fresh water reaching the coast. Such activities directly affect fish nurseries and environmentally dependent activities such as oyster and mussel growing.

This dependence on water quality has prompted the creation of monitoring networks and measures to help keep water bodies in good condition. High quality sea water is also essential for seaside bathing activities.

The public authorities have addressed the issue of preserving the marine environment, and a marine environment action plan was introduced in 2016. The scale of the financial and other resources that must be marshalled in order to implement this action plan requires constant, long-term cooperation between upstream and downstream components, as well as enhanced synergies with stakeholders in the Adour-Garonne and Loire-Bretagne basins and with Water Authorities (agences de l'eau), via their respective works programmes.

Achieving good environmental status helps to preserve outstanding marine and coastal environments

The Southern Atlantic sea basin is home to a remarkable coastal and marine natural and cultural heritage. Approximately 60 protected marine areas have been created, with various legal statuses (national reserves, marine natural parks, Natura 2000 sites, etc.), and this rich heritage is reflected in the high number of listed sites. This heritage is a crucial factor in Nouvelle-Aquitaine's appeal, while also directly or indirectly supporting numerous economic activities, including tourism, water sports and underwater activities, sea fishing and aquaculture.

As pressure on these marine areas increases, organisations tasked with their governance have no choice but to introduce management plans and produce strategy documents identifying relevant objectives. In addition to the anticipated effect on the marine environment, sustainable management at local level is a powerful tool for reducing conflicts of use.

Coastal areas resilient to coastal risks

Preventing coastal risks is crucial for the safety of our fellow citizens and the development of activities based along the coast. At the northern end of the South Atlantic coast, in Charente-Maritime, the coastline is highly vulnerable to the risk of storm surges, and multiple counter-measures have been implemented accordingly. Further south, severe erosion of Aquitaine's sandy coast has prompted a combined response by the French State and local authorities.

The Nouvelle-Aquitaine region has taken the lead regarding coastal risk management and the resilience of coastal communities, and must continue this effort in response to the growing risks associated with climate change.

2 Our project : A sustainable maritime and coastal economy

Maritime industries adopting the ecological and energy transition

The Southern Atlantic coast hosts many maritime and coastal activities and benefits from the jobs that they create. These activities, and in particular the renewal of the fishing fleet, are fully integrated into the ecological and energy transition; this in turn helps to consolidate the region's socioeconomic fabric, drive employment and maintain a dynamic demographic profile.

Nouvelle Aquitaine actively committed to achieving national energy production targets

The region's potential in the area of marine renewable energy has been confirmed. This activity is expected to contribute to achieving national energy transition objectives, via projects such as the offshore wind farm near Oléron Island, the France-Spain energy transfer line, as well as wave power and estuarine tidal energy projects.

A strong maritime economy that generates local jobs

The coast offers significant employment opportunities, particularly in its flagship industries - ship-building, shipping, raw material extraction, recreational boating and seaside tourism - and in Nouvelle-Aquitaine's iconic primary production businesses: oyster growing and fishing. Regional

government agencies naturally strive to support and encourage these industries. The Nouvelle-Aquitaine regional council's ambition to "make the ocean our future" is entirely consistent with the coastline strategy to promote the blue economy; this aim is translated into practice via the various spatial planning schemes. In any case, when considering the development potential of all maritime activities, allowance must be made for the French defence procurement agency's military zone off the Southern Atlantic sea basin.

Attractive ports serving the wider regional economy

The major sea ports in La Rochelle and Bordeaux, the trading ports of Rochefort – Tonnay-Charente and Bayonne, and the Nouvelle-Aquitaine region's seven largest fishing ports together form the logistics backbone supporting the blue economy's growth. They provide the foundation for structural and innovative projects and are vectors for industrial densification. The vision for 2030 set out by State agencies in the region is based on stepping up efforts to generate synergies between the Atlantic ports and improving links (especially rail links) to their respective hinterlands, via an integrated approach to flow and project management.

Activities that coexist harmoniously and make sparing use of resources and spaces

Sustainability must be the watchword for the blue economy in Nouvelle-Aquitaine. The marine environment and coast are subject to contradictory challenges and multiple pressures. Increasing risks, demographic pressure along the coastal fringe, the drive for economic development and jobs and the effects of climate change all take their toll on natural resources. The rollout of the blue economy must give proper consideration to the capacity of the host communities, and must promote energy efficiency and sustainable use of resources.

3 A lever : Developing knowledge as an innovation driver

Better understanding the sea

The well-meshed network of university and scientific institutions spanning the Nouvelle-Aquitaine region is a major asset in terms of enhancing our understanding of marine environments and new technologies. These institutions (joint research units of the CNRS and the Universities of Bordeaux

and La Rochelle, Pau and the Pays de l'Adour, IFREMER, IRSTEA, INRA, etc.) run varied, interdisciplinary research programmes in a collaborative approach, addressing the major challenges facing coastal areas. Much about the sea nevertheless remains to be explored, and our understanding of marine environments and how they operate is incomplete. Understanding the operation of remarkable ecosystems, hydrodynamics and sediment dynamics, and appraising the combined impacts of pressures applied to environments appear to be crucial prerequisites for addressing the link between land and sea and assessing the consequences of human activity on marine environments.

Forging closer relationships between the scientific community, civil society and the industrial world, to enhance our shared knowledge of the sea and coast

The emergence of synergies between scientific partners and civil society (maritime professionals, non-profit organisations, sports clubs, etc.) centring on sharing and enhancing knowledge is a useful asset that should be harnessed.

Closer bonds are needed between the scientific community and industry.

Maintaining R&D capabilities to adapt traditional industries and develop conditions conducive to innovation in emerging sectors

Innovations in the maritime sphere will support traditional industries as they shift to environmentally-friendly activities (via ship refitting and replacement, deconstruction, recycling and the digital transformation). Regional technical centres in Nouvelle-Aquitaine are already helping the shellfish farming and fishing industries to consolidate their activities, and providing them with development and adaptation tools. The Southern Atlantic coast must also defend its status as a leader in research and development for the boating and surfing industry.

Public awareness of the vulnerability and potential of the sea

Stakeholders from across the spectrum have organised educational and cultural events to raise public awareness and inform citizens, from an early age, about issues relating to the sea and coast.

Attractive maritime professions

The establishment of new industries, particularly in the areas of biotechnology and marine renewable energy (including wind, wave and tidal power) is a major challenge for the sea basin.

These new sectors are providing opportunities to introduce suitable training to support local employment.

Improvements in working conditions (labour relations, modernised vessels, etc.) are also helping to enhance the appeal of maritime professions.



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Part 2

Strategic Objectives and Planning for Maritime Spaces

Chapter 1 : Strategic objectives 32

Chapter 2 : Vocations map 40

Section III. 2° of Article R. 219-1-7 of the French Environmental Code defines strategic objectives as being "*environmental, social and economic. They include the definition of and grounds for the conditions in which the considered activities and uses may spatially and temporally coexist in maritime spaces. They also define zones consistent with the challenges and general objectives assigned to them, whether in the document or in documents arising out of other processes. They may be represented in maps.*"

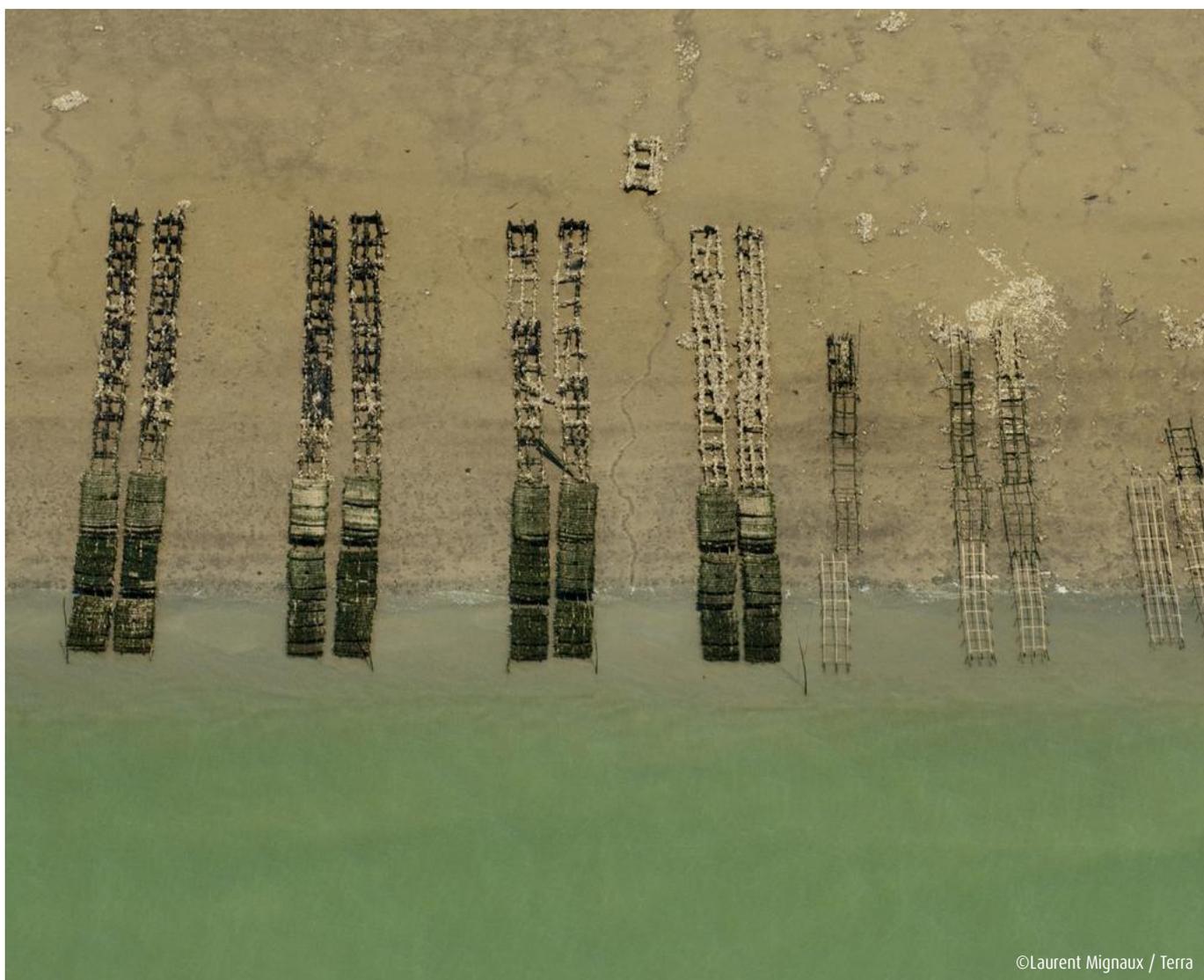
Chapter 1 focusses on socioeconomic and environmental objectives.

Chapter 2 is devoted to vocations maps representing strategic objectives.

Chapter 1 Socioeconomic and environmental strategic objectives

The initial assessment of the Southern Atlantic sea basin revealed a range of environmental, physical (coastal risks) and thematic issues relevant to all maritime industries. Based on this assessment, the vision for 2030 identifies a number of strategic orientations that will enhance the degree of integration along our coast by that date. These orientations focus on three goals : preserving our outstanding coastal and marine heritage; building an environmentally sustainable maritime and coastal economy; and developing knowledge as an innovation driver.

In order to achieve this desired outcome, a series of strategic and specific objectives have been set for the time scale relevant to the Sea Basin Strategy Document (6 years) : the purpose of these objectives is to protect the environment or boost the various sectors of the maritime economy.



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A total of 14 environmental strategic objectives have been defined.

Refining these environmental strategic objectives, specific objectives have been set, with related performance indicators and targets in order to measure, assess and report on them to European institutions.

Descriptor	Issues addressed	Environmental strategic objectives
<p>D1 <i>Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions</i></p>	Benthic and pelagic habitats	1. Limit or avoid anthropogenic physical disruption impacting the good environmental status of coastal benthic habitats, the continental shelf or deep-water habitats, in particular special habitats
	Marine mammals and turtles	2. Reduce or avoid pressures resulting in direct mortality and disruption to marine mammals and turtles
	Sea birds	3. Reduce or avoid pressures resulting in direct mortality, disruption or loss of functional habitats important to the life cycle of sea and shore birds, particularly in the case of vulnerable and endangered species
	Fish	4. Limit pressures on vulnerable and endangered fish species, or promote their recovery, and limit pressure on important functional sea areas
<p>D2 <i>Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems</i></p>	Non-indigenous species	5. Limit the risks of introduction and spread of non-native species as a result of human activities
<p>D3 <i>Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock</i></p>	Commercial species	6. Encourage exploitation of fish and shellfish stocks at the maximum sustainable level
<p>D4 <i>All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.</i></p>	Food webs	7. Ensure that the environment contains the food web resources necessary for large predators
<p>D5 <i>Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.</i></p>	Eutrophication	8. Reduce excessive nutrient inputs and their transfer to the marine environment
<p>D6 <i>Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.</i></p>	Integrity of seafloor	9. Avoid loss or physical disruption of marine habitats as a result of maritime and coastal activities
<p>D7 <i>Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.</i></p>	Hydrographic conditions	10. Limit changes in hydrographic conditions (caused by any kind of human activity) detrimental to ecosystem operation
<p>D8 <i>Concentrations of contaminants are at levels not giving rise to pollution effects.</i></p>	Contaminants	11. Reduce or eliminate accident-related or sustained releases of chemical contaminants into the marine environment, whether from land or sea.
<p>D9 <i>Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards</i></p>	Health considerations	12. Reduce microbiological, chemical and phycotoxic contaminations liable to degrade the sanitary quality of seafood, aquaculture and fishing areas or bathing areas
<p>D10 <i>Properties and quantities of marine litter do not cause harm to the coastal and marine environment</i></p>	Marine litter	13. Reduce the introduction and presence of waste in the sea and on the coast, whether produced on land or at sea
<p>D11 <i>Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.</i></p>	Noise	14. Limit noise in the marine environment to levels harmless to marine mammals

Appendix 6

 [6.b. Table of environmental strategic objectives and related performance indicators](#)

 [6.c. Environmental strategic objective description sheets](#)

A total of 26 socioeconomic strategic objectives have been defined.

Specific objectives have been determined for each socioeconomic strategic objective, along with related performance indicators and targets enabling their measurement and assessment.

Theme/industry	Socioeconomic strategic objectives
1. Commercial fishing	<ol style="list-style-type: none"> 1. Adapt and modernise commercial fishing equipment and production facilities, on land and at sea, to enhance product values and improve working conditions for seafarers 2. Upgrade fish stock management processes and emphasise environmental considerations to make commercial fishing sustainable
2. Aquaculture	<ol style="list-style-type: none"> 1. Improve water management to make aquaculture activities sustainable 2. Continue the transition to ecosystem-friendly aquaculture practices 3. Promote the activity as a vector for maintaining the social and economic fabric
3. Ports/transport	<ol style="list-style-type: none"> 1. Ensure the competitiveness of and fit between ports, improve access and encourage modal shift
4. Boat- and ship-building	<ol style="list-style-type: none"> 1. Ensure the long-term competitiveness of the boat- and ship-building industries and adapt fleets to address the challenges of the environmental transition
5. Marine renewable energy	<ol style="list-style-type: none"> 1. Support growth in the marine renewable energy sector through suitable planning 2. Support MRE-related R&D to facilitate rollout of these technologies
6. Marine and estuarine sediment	<ol style="list-style-type: none"> 1. Integrate sediment extraction into a sustainable development approach that addresses the needs of industries and communities in the Bay of Biscay
7. Water-based recreation	<ol style="list-style-type: none"> 1. Optimise the use of space in marinas and mooring areas without compromising water quality and marine ecosystems 2. Maintain the appeal of recreational sites that enables activities to cohabit in harmony with their environment
8. Tourism	<ol style="list-style-type: none"> 1. Consolidate the coast's tourist potential in an environmentally-friendly manner, without exceeding local accommodation capacities
9. Coastal risks	<ol style="list-style-type: none"> 1. Consider natural risks and climate change when planning for more resilient coastal territories 2. Coastal water quality enabling all uses to be maintained
10. Maritime safety and security	<ol style="list-style-type: none"> 1. Reduce and contain pollution risks 2. Ensure safe sailing conditions 3. Optimise monitoring resources
11. Landscapes, sites and heritage	<ol style="list-style-type: none"> 1. Protect heritage and sites of interest 2. Promote the coast's landscape and heritage potential
12. Knowledge/research	<ol style="list-style-type: none"> 1. Develop multidisciplinary knowledge and integrated research relating to marine environments 2. Uphold shared data collection and more effective use of knowledge
13. Innovation	<ol style="list-style-type: none"> 1. Develop innovation across all growth industries, fostering synergies and promoting partnerships 2. Encourage the inclusion of environmental considerations in innovation strategies
14. Training/awareness/attractiveness	<ol style="list-style-type: none"> 1. Promote the image of the maritime sector and enhance the appeal of related professions 2. Public awareness of the vulnerability and potential of the sea

Appendix 6

 **6.a. Table of socioeconomic strategic objectives and related performance indicators**

The choice of strategic objectives reflects the vision for 2030.
The following table shows how the various objectives relate to the vision.

1 A requirement: Preserve exceptional coastal and marine heritage	
1.1. Good water quality for all stakeholders	
▼ <u>Vision 2030</u>	
<p><i>The quality of fresh water exiting rivers in the Adour-Garonne and Loire catchment basins directly impacts the good environmental status of the Southern Atlantic coast's marine environment. Additionally, water extraction upstream in rivers affects the volumes of fresh water reaching the coast. Such activities directly affect fish nurseries and environmentally dependent activities such as oyster and mussel growing. This dependence on water quality has prompted the creation of monitoring networks and measures to help keep water bodies in good condition. High quality sea water is also essential for seaside bathing activities.</i></p> <p><i>The public authorities have addressed the issue of preserving the marine environment, and a marine environment action plan was introduced in 2016. The scale of the financial and other resources that must be marshalled in order to implement this action plan requires constant, long-term cooperation between upstream and downstream components, as well as enhanced synergies with stakeholders in the Adour-Garonne and Loire-Bretagne basins and with Water Authorities (agences de l'eau), via their respective works programmes.</i></p>	
▼ <u>Environmental strategic objectives</u>	▼ <u>Socioeconomic strategic objectives</u>
<ul style="list-style-type: none"> 8. Reduce excessive nutrient inputs and their transfer to the marine environment 10. Limit changes in hydrographic conditions (caused by any kind of human activity) detrimental to ecosystem operation 11. Reduce or eliminate accident-related or sustained releases of chemical contaminants into the marine environment, whether from land or sea. 12. Reduce microbiological, chemical and phycotoxic contaminations liable to degrade the sanitary quality of seafood, aquaculture and fishing areas or bathing areas 13. Reduce the introduction and presence of waste in the sea and on the coast, whether produced on land or at sea 	<ul style="list-style-type: none"> 02. Aquaculture <ul style="list-style-type: none"> 1. Improve water management to make aquaculture activities sustainable 2. Continue the transition to ecosystem-friendly aquaculture practices 07. Water-based recreation <ul style="list-style-type: none"> 1. Optimise the use of space in marinas and mooring areas without compromising water quality and marine ecosystems 09. Risks <ul style="list-style-type: none"> 2. Coastal water quality enabling all uses to be maintained 10. Maritime safety and security <ul style="list-style-type: none"> 1. Reduce and contain pollution risks
1.2. Achieving good environmental status helps to preserve France's outstanding marine and coastal environments	
▼ <u>Vision 2030</u>	
<p><i>The Southern Atlantic sea basin is home to a remarkable coastal and marine natural and cultural heritage. Approximately 60 marine protected areas have been created, with various legal statuses (national reserves, marine natural parks, Natura 2000 sites, etc.), and this rich heritage is reflected in the high number of listed sites. This heritage is a crucial factor in Nouvelle-Aquitaine's appeal, while also directly or indirectly supporting numerous economic activities, including tourism, water sports and underwater activities, sea fishing and aquaculture.</i></p> <p><i>As pressure on these marine areas increases, organisations tasked with their governance have no choice but to introduce management plans and produce strategy documents identifying relevant objectives. In addition to the effect on the marine environment, sustainable management at local level is a powerful tool for reducing conflicts of use.</i></p>	
▼ <u>Environmental strategic objectives</u>	▼ <u>Socioeconomic strategic objectives</u>
<ul style="list-style-type: none"> 1. Limit or avoid anthropogenic physical disruption impacting the good environmental status of coastal benthic habitats, the continental shelf or deep-water habitats, in particular special habitats 2. Reduce or avoid pressures resulting in direct mortality and disruption to marine mammals and turtles 3. Reduce or avoid pressures resulting in direct mortality, disruption or loss of functional habitats important to the life cycle of sea and shore birds, particularly in the case of vulnerable and endangered species 4. Limit pressures on vulnerable and endangered fish species, or promote their recovery, and limit pressure on important functional sea areas 5. Limit the risks of introduction and spread of non-native species as a result of human activities 6. Encourage exploitation of fish and shellfish stocks at the maximum sustainable level 7. Ensure that the environment contains the food web resources necessary for large predators 8. Reduce excessive nutrient inputs and their transfer to the marine environment 	<ul style="list-style-type: none"> 10. Maritime safety and security <ul style="list-style-type: none"> 1. Reduce and contain pollution risks 11. Landscapes, sites and heritage <ul style="list-style-type: none"> 1. Protect heritage and sites of interest

<ul style="list-style-type: none"> 9. Avoid loss or physical disruption of marine habitats as a result of maritime and coastal activities 10. Limit changes in hydrographic conditions (caused by any kind of human activity) detrimental to ecosystem operation 11. Reduce or eliminate accident-related or sustained releases of chemical contaminants into the marine environment, whether from land or sea. 12. Reduce microbiological, chemical and phycotoxic contaminations liable to degrade the sanitary quality of seafood, aquaculture and fishing areas or bathing areas 13. Reduce the introduction and presence of waste in the sea and on the coast, whether produced on land or at sea 14. Limit noise in the marine environment to levels harmless to marine mammals 	
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1.3. Coastal areas resilient to coastal risks	
▼ Vision 2030	
<p><i>Preventing coastal risks is crucial for the safety of our fellow citizens and the development of activities based along the coast. At the northern end of the South Atlantic coast, in Charente-Maritime, the coastline is highly vulnerable to the risk of storm surges, and multiple counter-measures have been implemented accordingly. Further south, severe erosion of Aquitaine's sandy coast has prompted a combined response by the French State and local authorities. The Nouvelle-Aquitaine region has taken the lead regarding coastal risk management and the resilience of coastal communities, and must continue this effort in response to the growing risks associated with climate change.</i></p>	
▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
<ul style="list-style-type: none"> 1. Limit or avoid anthropogenic physical disruption impacting the good environmental status of coastal benthic habitats, the continental shelf or deep-water habitats, in particular special habitats 8. Reduce excessive nutrient inputs and their transfer to the marine environment 9. Avoid loss or physical disruption of marine habitats as a result of maritime and coastal activities 	<ul style="list-style-type: none"> 09. Risks <ul style="list-style-type: none"> 1. Consider natural risks and climate change when planning for more resilient coastal territories 10. Maritime safety and security <ul style="list-style-type: none"> 3. Optimise monitoring resources

2 | Our project: A sustainable maritime and coastal economy

2.1. Maritime industries adopting the ecological and energy transition	
▼ Vision 2030	
<p><i>The Southern Atlantic coast hosts many maritime and coastal activities and benefits from the jobs that they create. These activities, and in particular the renewal of the fishing fleet, are fully integrated into the ecological and energy transition; this in turn helps to consolidate the region's socioeconomic fabric, drive employment and maintain a dynamic demographic profile.</i></p>	
▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
<ul style="list-style-type: none"> 9. Avoid loss or physical disruption of marine habitats as a result of maritime and coastal activities 13. Reduce the introduction and presence of waste in the sea and on the coast, whether produced on land or at sea 14. Limit noise in the marine environment to levels harmless to marine mammals 	<ul style="list-style-type: none"> 01. Commercial fishing <ul style="list-style-type: none"> 1. Adapt and modernise commercial fishing equipment and production facilities, on land and at sea, to enhance product values and improve working conditions for seafarers 2. Upgrade fish stock management processes and emphasise environmental considerations to make commercial fishing sustainable 04. Boat and ship-building <ul style="list-style-type: none"> 1. Ensure the long-term competitiveness of the boat- and ship-building industries and adapt fleets to address the challenges of the environmental transition 07. Water-based recreation <ul style="list-style-type: none"> 1. Optimise the use of space in marinas and mooring areas without compromising water quality and marine ecosystems 13. Innovation <ul style="list-style-type: none"> 2. Encourage the inclusion of environmental considerations in innovation strategies

2.2. Nouvelle Aquitaine actively committed to achieving national energy production targets

▼ [Vision 2030](#)

The region's potential in the area of marine renewable energy has been confirmed. This activity is expected to contribute to achieving national energy transition objectives, via projects such as the offshore wind farm near Oléron Island, the France-Spain energy transfer line, as well as wave power and estuarine tidal energy projects.

▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
	05. Marine renewable energy 1. Support growth in the marine renewable energy sector through suitable planning

2.3. A strong maritime economy that generates local jobs

▼ [Vision 2030](#)

The coast offers significant employment opportunities, particularly in its flagship industries - ship-building, shipping, raw material extraction, recreational boating and seaside tourism - and in Nouvelle-Aquitaine's iconic primary production businesses: oyster growing and fishing. Regional government agencies naturally strive to support and encourage these industries.

The Nouvelle-Aquitaine regional council's ambition to "make the ocean our future" is entirely consistent with the coastline strategy to promote the blue economy; this aim is translated into practice via the various spatial planning schemes.

In any case, when considering the development potential of all maritime activities, allowance must be made for the French defence procurement agency's military zone off the Southern Atlantic sea basin.

▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
	01. Commercial fishing 1. Adapt and modernise commercial fishing equipment and production facilities, on land and at sea, to enhance product values and improve working conditions for seafarers 02. Aquaculture 3. Promote the activity as a vector for maintaining the social and economic fabric 06. Marine and estuarine sediment 1. Integrate sediment extraction into a sustainable development approach that addresses the needs of industries and communities in the Bay of Biscay 07. Water-based recreation 2. Maintain the appeal of recreational sites that enables activities to cohabit in harmony with their environment

2.4. Attractive ports serving the wider regional economy

▼ [Vision 2030](#)

The major sea ports in La Rochelle and Bordeaux, the trading ports of Rochefort - Tonny-Charente and Bayonne, and the Nouvelle-Aquitaine region's seven largest fishing ports together form the logistics backbone supporting the blue economy's growth. They provide the foundation for structural and innovative projects and are vectors for industrial densification. The vision for 2030 set out by State agencies in the region is based on stepping up efforts to generate synergies between the Atlantic ports and improving links (especially rail links) to their respective hinterlands, via an integrated approach to flow and project management.

▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
	03. Ports and shipping 1. Ensure the competitiveness of and fit between ports, improve access and encourage modal shift 04. Boat and ship-building 1. Ensure the long-term competitiveness of the boat- and ship-building industries and adapt fleets to address the challenges of the environmental transition 10. Maritime safety and security 2. Ensure safe sailing conditions

2.5. Activities that coexist harmoniously and make sparing use of resources and spaces

▼ [Vision 2030](#)

Sustainability must be the watchword for the blue economy in Nouvelle-Aquitaine. The marine environment and coast are subject to contradictory challenges and multiple pressures. Increasing risks, demographic pressure along the coastal fringe, the drive for economic development and jobs and the effects of climate change all take their toll on natural resources. The rollout of the blue economy must give proper consideration to the capacity of the host communities, and must promote energy efficiency and sustainable use of resources.

▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
<p>5. Limit the risks of introduction and spread of non-native species as a result of human activities</p> <p>6. Encourage exploitation of fish and shellfish stocks at the maximum sustainable level</p> <p>9. Avoid loss or physical disruption of marine habitats as a result of maritime and coastal activities</p> <p>10. Limit changes in hydrographic conditions (caused by any kind of human activity) detrimental to ecosystem operation</p>	<p>06. Marine and estuarine sediment</p> <p>1. Integrate sediment extraction into a sustainable development approach that addresses the needs of industries and communities in the Bay of Biscay</p> <p>07. Water-based recreation</p> <p>1. Optimise the use of space in marinas and mooring areas without compromising water quality and marine ecosystems</p> <p>2. Maintain the appeal of recreational sites that enables activities to cohabit in harmony with their environment</p> <p>08. Tourism</p> <p>1. Consolidate the coast's tourist potential in an environmentally-friendly manner, without exceeding local accommodation capacities</p> <p>11. Landscapes, sites and heritage</p> <p>1. Protect heritage and sites of interest</p>

3 | A lever: Developing knowledge as an innovation driver

3.1. Better understanding the sea

▼ [Vision 2030](#)

The well-meshed network of university and scientific institutions spanning the Nouvelle-Aquitaine region is a major asset in terms of enhancing our understanding of marine environments and new technologies. These institutions (joint research units of the CNRS and the Universities of Bordeaux and La Rochelle, Pau and the Pays de l'Adour, IFREMER, IRSTEA, INRA, etc.) run varied, interdisciplinary research programmes in a collaborative approach, addressing the major challenges facing coastal areas.

Much about the sea nevertheless remains to be explored, and our understanding of marine environments and how they operate is incomplete. Understanding the operation of remarkable ecosystems, hydrodynamics and sediment dynamics, and appraising the combined impacts of pressures applied to environments appear to be crucial prerequisites for addressing the link between land and sea and assessing the consequences of human activity on marine environments.

▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
	<p>06. Marine and estuarine sediment</p> <p>1. Integrate sediment extraction into a sustainable development approach that addresses the needs of industries and communities in the Bay of Biscay</p> <p>12. Knowledge/research</p> <p>1. Develop multidisciplinary knowledge and integrated research relating to marine environments</p>

3.2. Forging closer relationships between the scientific community, civil society and the industrial world, to enhance our shared knowledge of the sea and coast

▼ [Vision 2030](#)

The emergence of synergies between scientific partners and civil society (maritime professionals, non-profit organisations, sports clubs, etc.) centring on sharing and enhancing knowledge is a useful asset that should be harnessed. Closer bonds are needed between the scientific community and industry.

▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
	<p>12. Knowledge/research</p> <p>2. Uphold shared data collection and more effective use of knowledge</p>

3.3. Maintaining R&D capabilities to adapt traditional industries and develop conditions conducive to innovation in emerging sectors	
▼ Vision 2030	
<i>Innovations in the maritime sphere will support traditional industries as they shift to environmentally-friendly activities (via ship refitting and replacement, deconstruction, recycling and the digital transformation). Regional technical centres in Nouvelle-Aquitaine are already helping the shellfish farming and fishing industries to consolidate their activities, and providing them with development and adaptation tools. The Southern Atlantic coast must also defend its status as a leader in research and development for the boating and surfing industry.</i>	
▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
	<p>04. Boat and ship-building</p> <p>1. Ensure the long-term competitiveness of the boat- and ship-building industries and adapt fleets to address the challenges of the environmental transition</p> <p>05. Marine renewable energy</p> <p>2. Support MRE-related R&D to facilitate rollout of these technologies</p> <p>13. Innovation</p> <p>1. Develop innovation across all growth industries, fostering synergies and promoting partnerships</p> <p>2. Encourage the inclusion of environmental considerations in innovation strategies</p>

3.4. Public awareness of the vulnerability and potential of the sea	
▼ Vision 2030	
<i>Stakeholders from across the spectrum have organised educational and cultural events to raise public awareness and inform citizens, from an early age, about issues relating to the sea and coast.</i>	
▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
	<p>11. Landscapes, sites and heritage</p> <p>1. Protect heritage and sites of interest</p> <p>2. Promote the coast's landscape and heritage potential</p> <p>14. Training/awareness/attractiveness</p> <p>2. Public awareness of the vulnerability and potential of the sea</p>

3.5. Attractive maritime professions	
▼ Vision 2030	
<i>The establishment of new industries, particularly in the areas of biotechnology and marine renewable energy (including wind, wave and tidal power) is a major challenge for the sea basin. These new sectors are providing opportunities to introduce suitable training to support local employment. Improvements in working conditions (labour relations, modernised vessels, etc.) are also helping to enhance the appeal of maritime professions.</i>	
▼ Environmental strategic objectives	▼ Socioeconomic strategic objectives
	<p>01. Commercial fishing</p> <p>1. Adapt and modernise commercial fishing equipment and production facilities, on land and at sea, to enhance product values and improve working conditions for seafarers</p> <p>14. Training/awareness/attractiveness</p> <p>1. Promote the image of the maritime sector and enhance the appeal of related professions</p>

Chapter 2 Vocations map

A vocations map on the Southern Atlantic sea basin has been produced, based on the identified social and economic activities and environmental sectors. The vocations map reveals which areas of maritime spaces are consistent with the general challenges and goals assigned to them by the Sea Basin Strategy Document or other processes. The map facilitates the definition of strategic priorities (i.e. vocations) for the areas thus identified.

Seven distinct territories have been identified using this approach. Each of these areas shares a particular set of challenges, rather than being defined by strict administrative or geographical boundaries. Each area is assigned a designated use, corresponding to a forecast or desired evolution of activities and the marine environment.

Area 1

Gironde estuary and Sea of Pertuis marine natural park

This area is notable for the high number of activities carried out, including fishing, aquaculture, shipping, leisure boating and tourism. These activities must be managed with careful consideration for special habitats (salt marshes, mudflats, etc.) and species of concern (especially diadromous fish).

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

Area 2

Aquitaine sandy coast

This area features intensive seaside resort activities and a well-developed, artisanal inshore fishing industry. The area is very exposed to coastal risks, and a receding coastline in particular.

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.

Area 3

Bay of Arcachon marine natural park

This area features very diverse, highly seasonal activities, including fishing, oyster growing and seaside tourism. It is subject to severe pressures relating to coastal sprawl and natural hazards. Additionally, spatial management policies must also address multiple environmental issues (zostera meadows, sea birds, etc.).

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

Area 4

Basque rocky coast, Adour estuary and Gouf de Capbreton canyon

Inshore fishing and boat-building are the main activities in this area. Its ports handle significant shipping traffic. The Basque coast also plays a functional role for many commercial species. In addition, it is home to the Gouf de Capbreton, one of only 30 known coastal canyons in the world.

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 marine leisure).

Area 5

Continental shelf

Commercial fishing and shipping are this area's main activities. Any development of new activities (such as marine renewable energy or aggregate extraction) will have to make allowance for environmentally sensitive areas (such as the Rochebonne shoal).

Vocation : Priority to sustainable commercial fishing, cohabiting with shipping; potential development of new renewable energy and marine aggregate extraction projects.

Area 6

Continental slope

This area contains varied habitats and many submarine canyons that provide refuge to numerous species of fish. Fishing and shipping activities are particularly well developed in this area.

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

Area 7

Abyssal plain

Few activities other than shipping are conducted in this area. However, a number of environmental issues, involving whales in particular, have been identified.

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

A description sheet has been produced for each area, accompanied by a detailed map showing the relevant maritime planning information on a more local scale.

The sheet also states:

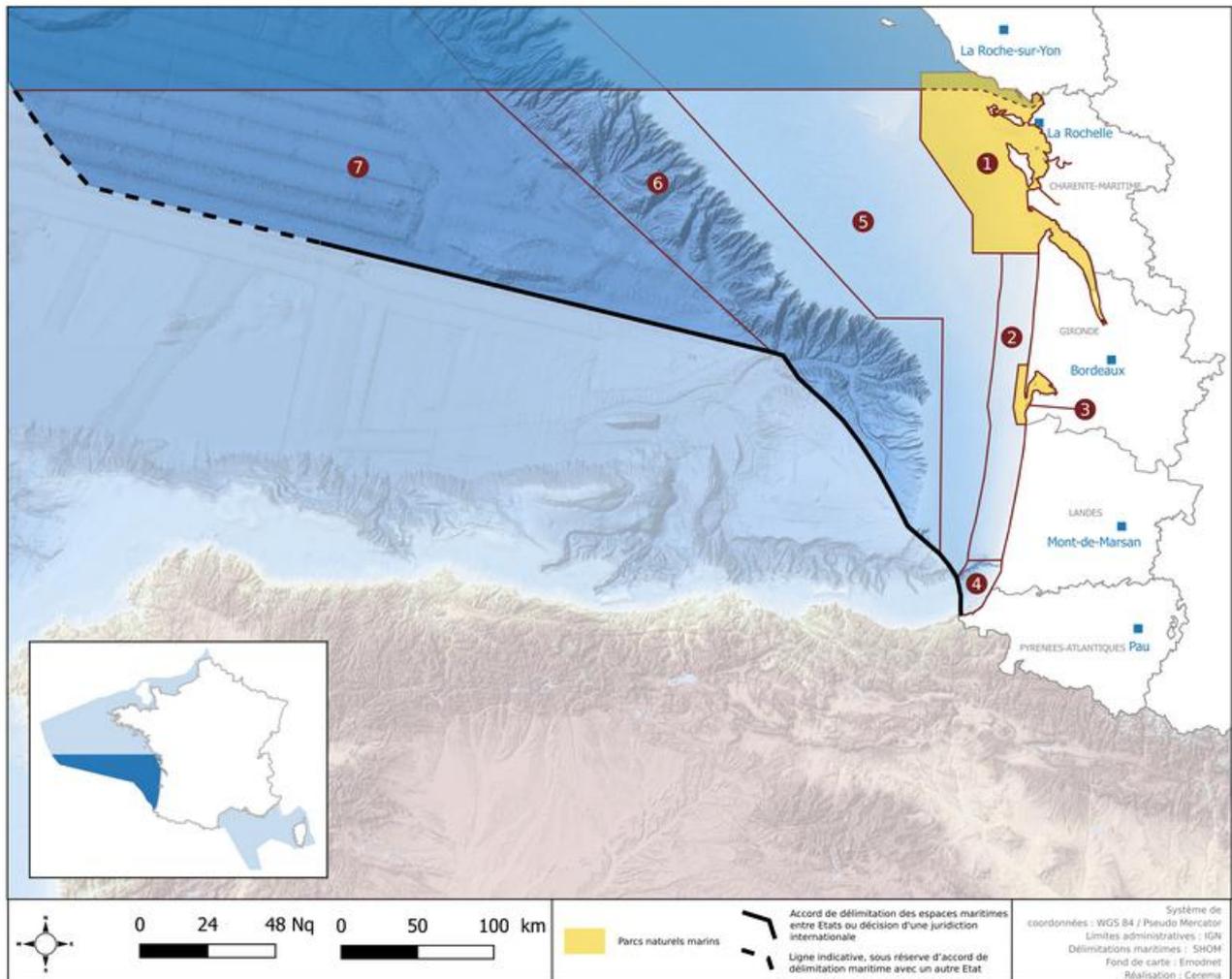
- activities conducted in the territory
- environmental specificities
- interactions between activities and the marine environment
- development outlook for activities
- planning documents required to be compatible with or reflect the Sea Basin Strategy Document
- strategic objectives assigned to the territory

Appendix 8

 [Description sheets for the areas represented on the vocations map](#)

Carte des vocations de la façade maritime Sud-Atlantique

V8 - septembre 2018



1 Parc naturel marin de l'Estuaire de la Gironde et de la Mer des Pertuis

Connaissance et protection du patrimoine marin; développement durable des activités maritimes.

2 Côte sableuse aquitaine

Usages et activités maritimes et littorales en cohabitation, conditionnés à la réduction des pressions cumulées, à l'atteinte du bon état du milieu marin et à la prise en compte de l'évolution du trait de côte.

3 Parc naturel marin du Bassin d'Arcachon

Connaissance et protection du patrimoine marin; développement durable des activités maritimes.

4 Côte rocheuse basque, estuaire de l'Adour et Gouf de Capbreton

Usages et activités maritimes et littorales en cohabitation, conditionnés à la réduction des pressions cumulées pour l'atteinte du bon état écologique, la prise en compte de l'évolution du trait de côte, privilégiant les activités historiques emblématiques (pêche, port de commerce, tourisme, plaisance et loisirs nautiques).

5 Le plateau continental

Priorité aux pêches professionnelles durables en cohabitation notamment avec le transport maritime, le développement possible de nouvelles productions d'énergies marines renouvelables et l'extraction de granulats marins.

6 Le talus continental

Exploitation durable des ressources marines respectueuse des habitats et espèces à forts enjeux écologiques.

7 La plaine abyssale

Utilisation et valorisation possible du milieu et des ressources marines, conditionnées par la nécessité d'une meilleure connaissance de la zone.

Glossary

A

Abrasion: Mechanical wear of the substrate (sea bed) caused by friction.

Anthropogenic activities: human activities.

Protected marine area: designated area of the sea for which a long-term nature conservation objective is set. This objective rarely exists in isolation. Rather, it is generally combined with either a local socioeconomic development goal or a sustainable resource management approach. It is also characterised by a number of management measures adopted in order to achieve the conservation objective. Examples include scientific monitoring, action plans, best practice codes, maritime public domain protection measures, regulations, surveillance, public information initiatives, etc.

Aquaculture: production of aquatic organisms (plants or animals) in fresh, salt or seawater, in conditions partially or entirely controlled by humans.

Diadromous: migratory aquatic organism that moves from salt to fresh water (and vice versa) at specific points in its life cycle.

Anthropogenic: effect of human activity on natural environments.

Antifouling paint: paint containing substances intended to prevent aquatic organisms from attaching themselves to ship hulls or other submerged objects.

Concrete sprawl: modification of natural spaces by human construction of infrastructure.

Assises de la mer et du littoral: Consultation exercise (initiated in July 2013) covering 10 broad themes that inform development of the National Strategy for the Sea and Coast.

B

Catchment basin: area that funnels water to a stream, river or lake. A catchment basin is defined as a collection area limited by a contour within which precipitated water flows over the surface or underground to an outlet.

Bathymetry: submarine equivalent of topography, namely the use of depth measurements to describe submerged terrain relief.

Benthic: adjective used to describe the water-sediment interface (= water-lithosphere interface) of an aquatic ecosystem, regardless of its depth. The term is also used to describe free-moving (vagile) bottom-dwelling or anchored (sessile) organisms.

Biocoenosis: the community of living organisms (whether plants or animals, including micro-organisms) occupying a particular natural environment (i.e. the biotope). This biological community is characterised by a particular composition in terms of its constituent species, and by the existence of interdependent relationships. Together, the biocoenosis and biotope form the ecosystem. A biocoenosis evolves over time (with a pioneer phase, an intermediate phase and an equilibrium phase). The biocoenosis is the living component of an ecosystem, in contrast to the biotope.

Biodiversity: the term biodiversity (or biological diversity) was first used during the 1980's, and came to the fore at the Rio Conference in 1992.

It covers the spectrum of living species (species diversity) and their genetic heritage (genetic diversity), habitats (ecosystem and functional diversity) and landscapes. Species live interdependently via competitive, predatory or cooperative relationships, each forming a link in an endless chain. Biodiversity is essential in maintaining the major environmental balances that play a decisive role in ensuring the availability of vital elements such as food, air and water.

Biotechnology: any technique that uses living creatures (whether micro-organisms, animals or plants), generally after modifying their genetic characteristics, to industrially produce biological or chemical compounds (for example therapeutic drugs or industrial raw materials) or to improve agricultural production (e.g. transgenic plants and animals or GMOs).

Biotope : espace caractérisé par des facteurs climatiques, géographiques, physiques, morphologiques et géologiques, etc. en équilibre constant ou cyclique et occupé par des organismes qui vivent en association spécifique (biocénose).

Good environmental status: "good environmental status" applied to the marine environment is defined in the Marine Strategy Framework Directive (DCSMM) as "the environmental status of marine waters such that the water has the ecological diversity and dynamics typical of seas and oceans that are clean, healthy and productive in their intrinsic conditions, and that the marine environment is used sustainably, thereby safeguarding its potential for the uses and activities of current and future generations".

C

Submarine canyon: deep, often winding and/or branching trench in the continental slope, characterised by steep sides and a steeply sloping longitudinal profile, swept by currents resulting in turbidity.

Bycatch: sporadic, unintentionally caught species.

Turnover: Ex-VAT revenue generated by a company from third parties in the course of its routine business activities. The turnover represents the sum of sales of goods and manufactured products, services and products of ancillary activities.

Circalittoral: zone extending from the lower limit of algal life (i.e. the limit beyond which the organisms most tolerant of low-light conditions can survive). The upper and lower limits of this zone therefore vary according to the turbidity of the water. (from -40m to -100m, approximately) On beaches, the circalittoral zone lies below the infralittoral level, where photophilous algae gradually become scarcer. It ends where sciaphilous organisms also disappear.

Dredged sediment dumping: disposal at sea of materials dredged from ports, in an approved area reserved for the purpose.

Cluster: network of mainly small businesses with strong local roots, often operating in a same production niche and in many cases in the same industry.

Environmental Code: compendium of statutory and regulatory instruments and government orders relating to the environment. The French Environmental Code now recognises four basic environmental management principles: the precautionary principle; the preventive action principle; the "polluter pays" principle and the participatory principle.

Shellfish farming: all processes and techniques used to facilitate the production of shellfish.

Conflict of use: rivalry between users relating to the ownership, management or working of a particular resource or space.

Fish auction: First point of sale for fish landed in a fishing port.

Crinoid: class in the animal classification system; part of the echinoderms branch and the only surviving category of a previously-thriving group of permanently-anchored animals.

Blue growth: sustainable economic growth by industries relating to the sea.

D

Public debate: statutory forum for participatory democracy, overseen by France's national commission for public debate (*Commission nationale de débat public*).

Marine Strategy Framework Directive (DCSMM): Directive 2008/56/EC of 17 June 2008, establishing the framework for European Union action relating to policy intended to achieve or maintain good environmental status in the marine environment. **Water Framework Directive (DCE):** Directive 2000/60/EC of 22 October 2000, establishing guidelines for halting the deterioration of the European Union's water bodies and achieving "good status" for European rivers, lakes and groundwater and coastal waters.

Habitats, Wildlife and Flora Directive (more commonly known as the "Habitats" Directive): Directive 92/43/EEC of the European Council, issued on 21 May 1992, concerning the conservation of natural habitats, wildlife and wild plants.

Birds Directive: Directive 2009/147/EC relating to preservation of wild birds. The purpose of this companion to the "Habitats" Directive was to establish Natura 2000 as a "coherent European ecological network of Special Areas of Conservation (SAC)"

Maritime public domain (MPD): the MPD comprises the land and seabed between the mean high water line (namely the highest point on the shore reached by the highest tides in the absence of extreme meteorological events) and the outer edge of territorial waters; salt lakes that communicate directly, naturally and permanently with the sea; foreshores (areas from which the sea has permanently receded) and silt deposits;

Dredging: removal of sediment from the sea bed using a dredge, whether to study a sediment sample or to create or maintain a navigable channel.

E

Ecosystem: all living creatures (biocoenosis), non-living elements and climate and geological conditions (biotope) that are linked and interact together, forming a basic ecological functional unit. An ecosystem has properties that are distinct from the sum of the properties of its two components.

Ecosystemic (approach): management method in which land, water and living resources are integrated to promote the conservation and sustainable use of natural resources, to avoid disrupting interactions in ecosystems on which humans are dependent.

Elasmobranchii: a subclass of cartilaginous fish, to which rays and sharks belong.

Endemic: describes living species specific to a clearly defined territory.

Marine renewable energy: the expression marine renewable energy covers a set of technologies enabling energy to be produced from the marine environment (harnessing tides, waves, currents, heat, etc.). It also extends to the production of offshore wind turbines.

Trenching: burial of a submarine pipe or cable in the seabed.

Erosion: phenomenon that results from the action of water, wind or chemical substances on mineral or other materials, and causes the loss of topsoil.

Estuary: coastal water body formed at the mouth of a river as it flows into the marine environment; tidal movements subject organisms living in estuaries to fluctuating salinity.

Urban sprawl: uncontrolled expansion of built-up areas around an urban space.

Shoreline lake: lake located immediately inland of the coastline.

Eutrophication: enrichment of rivers, lakes or sea water with nutrients - essentially phosphorus and nitrogen, which act as fertilizer for aquatic plants. Eutrophication is evidenced by excessive proliferation of plants, which upon decaying significantly deplete oxygen contents. This results in loss of animal and plant diversity and disruption to uses (e.g. supply of tap water, leisure activities, etc.).

F

Fleet: all vessels of a particular type (e.g. trawler fleet or gillnetter fleet)

Land issues: matters relating to an area of land or its ownership, use and taxation.

Coastal fringe: narrow strip immediately adjacent to the coastline and directly concerned by any coastline movements.

Spawning ground: area of salt, brackish or fresh water in which fish and other animals periodically gather for the purpose of reproduction and spawning.

Rail freight: transportation of goods by train.

G

Integrated management: integrated management refers to a method of managing certain activities that address the full spectrum of related ecological, economic and social factors from the design phase.

Gorgonians: marine organisms belonging to the cnidarian phylum (corals). The skeleton of these colonial octocorals is formed of a flexible, horny substance (gorgonin) incorporating calcareous spicules. This skeleton is surrounded by soft tissue with filter-feeding polyps having a mouth and 8 tentacles.

Aggregate: all inert components of mortar and concrete (i.e. sand, fines, gravel and crushed rock).

H

Habitats (as defined in the Directive): environment in which a species or group of animal or plant species live (e.g. peat bogs, estuarine reed beds, oak stands, etc.). These are areas of land or water with special or unique biogeographical and geological characteristics. (For example, when describing population dynamics, the expression "abra alba habitat" may be used to refer to the entire population - and the surrounding natural environment - characterised by the presence of *Abra alba*, a species representative of said environment or habitat).

Benthic: habitat situated at the water-sediment interface (= water-lithosphere interface) of an aquatic ecosystem, regardless of its depth. Alternatively, a habitat comprising free-moving (vagile) bottom-dwelling or anchored (sessile) organisms.

Biogenic habitat: naturally-occurring habitat.

Halieutique : qualifie toutes les activités relevant de la pêche sous toutes ses formes.

Zostera meadow: this habitat consists of a flowering plant (marine spermatophyte) that grows in soft sedimentary areas of the sea floor (sand, gravel and silt) in the infralittoral zone, to a depth of 10 m. *Zosteras* form sometimes dense beds comparable to meadows.

Honeycomb reefworm: sedentary annelid polychaete worm (*Sabellaria alveolata*) that lives in cemented sand tubes. These worms are able to build sizeable reefs. Reefworms have a reputation as bio-engineers.

Hinterland: refers to the area of economic influence and attraction of a port, i.e. the area supplied by a port or from which it obtains its resources.

I

Input (agriculture): products introduced to land and crops that are not obtained from the farm or its immediate surroundings.

L

Coastline length: developed length of coastline.

"Loi littoral": Legislation adopted on 3 January 1986 introducing a number of requirements relating to coastal management, conservation, development and urban planning.

M

Maërl : mot d'origine bretonne utilisé pour désigner les algues calcaires du genre *Lithothamnium*. dont le thalle de couleur violette n'est pas fixé et est emporté par les courants pour se déposer en bancs importants dans les zones calmes. Ces algues sont exploitées pour produire un amendement calcaire utilisé sur les sols acides (en Bretagne notamment).

Mytiliculture : culture des moules.

N

Nursery: area in which fry and juvenile members of a mobile species assemble in order to feed and pursue their development. Nursery areas may play host to multiple species.

O

Offshore : qui s'effectue au large.

Ostréiculture : culture des huîtres.

P

Plume: describes the dispersion field of an emission or river.

Pelagic: describes the open-water marine environment and creatures that live in it. This adjective is also applied to species that live in open water or off the coast, such as sea birds.

Pisciculture marine : élevage de poissons marins.

Recreational boating: boating for leisure or sport, together with related activities.

Technological risk prevention plan: instrument introduced by the Law of 30 July 2003 and the Decree of 7 September 2005 in order to provide greater control over urbanisation near high-risk sites, and in particular, resolve certain legacy issues.

Local development plan (*Plan local d'urbanisme - PLU*): the principal urban planning document at commune (PLU) or inter-commune (PLUI) level. The PLU was introduced - superseding the land use plan (*plan d'occupation des sols - POS*) - in the "solidarity and urban regeneration Act" (*Loi SRU*) adopted on 13 December 2000.

Migratory fish: fish that move between locations - in some cases travelling long distances - over the course of their life, in order to accomplish their biological cycle. Diadromous fish are by definition migratory.

Primary production: total quantity of organic matter in the sea that is produced by algae and fixed by photosynthesis.

R

Food web: set of food relationships between species in a community, via which energy and matter circulate.

Resilience: ability to withstand disruption, reorganise and continue to function in the same way as previously.

Natural resource: all mineral or biological resources required for human life and economic activities.

Carbonate rock: sedimentary rock comprising at least 50% carbonates (aragonite, calcite or dolomite).

S

Regional integrated development plan (SCoT): instrument for designing and implementing inter-communal strategic planning (at the scale of a large catchment area or urban area) in the context of sustainable development projects.

Right-of-way: the sole purpose of coastal pedestrian rights-of-way is to provide pedestrians with unrestricted access to the coast and enable them to travel along it. These rights-of-way prohibit land owners and their beneficiaries from modifying locations such that they impede the freedom of movement of pedestrians, even temporarily, without prior written permission from the prefect, which may be granted for a period not exceeding six months.

Overwintering site: geographic space in which a migratory bird spends the winter.

Storm surge: flooding or invasion by the sea.

T

Continental slope: steeply sloping zone descending from the edge of the continental shelf to the abyssal plain.

Coastline: curve/line representing the intersection between land and sea, assuming a high tide with a tidal coefficient of 120 and normal weather conditions. By extension, the coastline is the boundary between land and sea, i.e. the coast.

Water turbidity: defines the extent to which the penetration of light is impeded. Turbidity is determined by the quantity of suspended solid particles (referred to as "suspended matter"), whether mineral in nature (e.g. sand, clay or silt) or organic (e.g. phyto- or zooplankton, or organic waste matter).

Z

Exclusive economic zone - EEZ (*zone économique exclusive - ZEE*): maritime space over which a coastal State exercises sovereign rights regarding exploration and use of resources. The EEZ extends from the limit of territorial waters (12 nautical miles from the shore) out to a distance of 200 nautical miles.

Functional fishery area: a space is considered to be a functional fishery area if it hosts one or more stages (i.e. birth, growth, feeding, migration and/or reproduction) in the life cycle of a fishery resource.

Appendix list

■ **Appendix 1**

Initial assessment

■ **Appendix 2**

Scientific and technical overview of the initial assessment of the environmental status of marine waters and the environmental impact of human activities on said waters

■ **Appendix 3**

Ministerial Order defining the good environmental status of the marine environment

■ **Appendix 4**

Map of social and economic challenges

■ **Appendix 5**

Map of environmental challenges

■ **Appendix 6**

Strategic objectives and related indicators

■ **Appendix 6.a**

Table of socioeconomic strategic objectives and related performance indicators

■ **Appendix 6.b**

Table of environmental strategic objectives and related performance indicators

■ **Appendix 6.c**

Environmental strategic objective description sheets

■ **Appendix 7**

Concessions

■ **Appendix 8**

Description sheets for the areas represented on the vocations map

■ **Appendix 9**

Atlas



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