



DATA ADEQUACY REPORT Deliverable 2

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Glossary

BODC	British Oceanographic Data Centre
CFP	Common Fisheries Policy
Characteristic	Distinguishing feature [ISO 9000:2005]
Copernicus	European Program for establishing European capacity for Earth Observation
CDI	Common Data Index
CMEMS	Copernicus Marine Environment Monitoring Service
CSW	Catalogue Service for Web
DAR	Data Adequacy Report
DCF	Data Collection Framework
DPS	Data Product Specification (ISO 19131)
EDMED	Directory of Marine Environmental Data
EDMERP	European Directory of Marine Environmental Research Projects
EDMO	European Directory of Marine Organizations
EEA	European Environmental Agency
EIONet	European Environment Information and Observation Network
ESDI	European Spatial Data Infrastructure
EOV	Essential Ocean Variables
FAO	Food and Agriculture Organization
GCMD	Global Change Master Directory
GEBCO	General Bathymetric Chart of the Oceans
GES	Good Environmental Status
GRDC	Global Runoff Data Base
ICES	International council for the exploration of the sea
INSPIRE	Infrastructure for Spatial Information in the European Community
ISO	International Organization for Standardization
ISO IEC	ISO International Electrotechnical Commission
ISO NP	ISO New Proposal
ISO NP TS	ISO NP Technical Specification
JRC	Joint Research Centre
MS	Member States
MSFD	Marine Strategy Framework Directive
MSP	Maritime Spatial Planning
NIS	Non-indigenous species
OSPAR	The Oslo Paris Convention
P01	BODC Parameter Usage Vocabulary
P02	SeaDataNet Parameter Discovery Vocabulary
P03	SeaDataNet Agreed Parameter Groups
PSMSL	Permanent Service for Mean Sea Level
RSC	Regional sea convention
SEO	Search Engine Optimization
SDN	SeaDataNet
VMS	Vessel Monitoring System



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Executive summary

This work follows on from the preliminary results of the Checkpoint's literature survey which had (i) identified the characteristics needed by the eleven challenges and described their sources, (ii) made a preliminary assessment of the availability of these data from literature case studies. The data adequacy assessment expands from this work and attempts to qualify the availability of actual data sets as procurable today.

On the basis that narrative description of gaps and bottlenecks, however important, is not sufficient to give an account of the data landscape, the choice was made to use quantitative tools based on data quality standards, the Sextant GIS data base with metadata managed by Geonetwork and the Banana software that produces indicators by harvesting this metadata base. The portal is available at: <http://www.emodnet-atlantic.eu/>.

This choice of methods and tools is deemed fit to ensure that the assessment is:

- Fully made by users (the Challenges);
- Measurable and systematic;
- Repeatable and updatable any time as edition goes on;
- Comparable between Checkpoints (Atlantic, MedSea and Black Sea).

This first Data adequacy report looks only at the availability part of adequacy by assuming that challenges actually downloaded all identified data sets as if they were going to use them right away. It presents the methodology and tools applied to this assessment, dwells on the quality check made on metadata edition and displays statistical results in the form of graphs according to several criteria, basically those required by the tender (challenge and characteristics standpoints) and a couple of additional ones (e.g. sources). The discussion makes an attempt to understand the bottlenecks in data availability. It also identifies shortcomings in vocabulary, issues about the interpretation of indicators categories and more generally how this set of innovative tools could be improved in the next phase of work.



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1 Introduction

1.1 Checkpoints terms of reference

The concept of sea-basin checkpoints was introduced within the "Marine Knowledge 2020" Communication and refined in the Roadmap. Although EU initiatives such as the European Marine Observation and Data Network, Copernicus and the Data Collection Framework for Fisheries have managed to deliver seamless layers of marine data across national boundaries, there are still some shortcomings with Europe's marine data architecture.

Up to now observations of the sea have been made for specific purposes, e.g. seabeds are surveyed to ensure safe navigation and fish are sampled to estimate the size of the stock. In order to save costs and improve marine knowledge, the EU is now moving to a new paradigm where we collect data once and use them for many purposes. But, once the direct link between the collection of data and its application is broken, it becomes hard to determine what the priorities are for monitoring and who should monitor what.

Marine monitoring, observation and data collection networks have been largely put in place for specific national purposes or to demonstrate a technological capability. There is no comprehensive overview on a sea-basin scale of gaps and duplications. There is no overall view of what the priorities are for further data collection or assembly.

The Checkpoints were implemented with a view to get:

- a clearer view of synergies between different monitoring, observation and data collection programmes;
- an identification of how well the present data collection, monitoring and surveying programmes meet the needs of users;
- an identification of gaps;
- an understanding of required temporal or spatial resolution of data products such as bathymetry or marine sediments.

They will contribute to the identification of priorities both in terms of creation of new data and in making existing data more available and usable. It will also help the Commission determine priorities in the context of the "Marine Knowledge 2020" initiative. The aim of the contract is not primarily to test the effectiveness of EU initiatives, although this analysis should be included, but rather to assess how well all available marine data meet the needs of users.

1.2 Vocabulary issues

It was deemed important to reproduce here the section on vocabulary from the literature survey report to ensure common understanding throughout the document.

According to the ISO19157 (2013) Data Quality Standard for Geographic Information (Annex B "Data quality concepts and their use") data quality can be viewed from 2 different perspectives which determine the reference according to which it must be assessed:

- From the data producer's point of view, "Data quality" describes "how well a data set reflects its universe of discourse as defined in the data product specification";
- From the data user's point of view, "Data quality" describes how well a dataset "is able to satisfy the requirements of the data user's application".

When the call specifies that "to assess the fitness for purpose of data, the contractor should meet a number of challenges" DG MARE refers to the user's point of view. The ISO 19115-1 2013

metadata making use of the term “purpose” for the description of “the intentions with which the resource(s) was developed” (i.e. a dataset), the Atlantic checkpoint has adopted the Medsea terminology to distinct the view points of data quality in the literature survey and reports:

- “Fitness for use” represents the standpoint of the user who is using data whereas “fitness for purpose” represents the standpoint of the producer who is producing data.

By 'adequacy of data', the call for tender specifies that some questions should be answered (description of Task 1 Literature Survey) in particular: “Is inadequacy due to reluctance of data-owners to release data, time taken to obtain data, lack of measurements, lack of accuracy or lack of precision ?”

So “Data adequacy” includes quality aspects not only related to data *sensu stricto* (What is the quality of the monitoring data for the challenge products?) but also to their conditions of availability (How is the data made available to the Challenges?).

Therefore we broke down this notion of adequacy in two parts: a) appropriateness and b) availability, which are both needed to make a dataset usable for a given application. Section 2.3 details availability criteria.

Table 1.2 summarizes the correspondence between the different concepts and terms.

Table 1.2: Vocabulary correspondence

Call for tender		ISO		Medsea / Black Sea / Atlantic Checkpoints	
Synonyms		Synonyms		Synonyms	
Data Adequacy	Fitness for purpose	Data quality (user's standpoint)	Usability (user's standpoint)	Appropriateness + Availability	Fitness for use

1.3 The checkpoint: an observing system

As a way to better understand their remit, Checkpoints can be regarded as overarching observing systems. What they observe is the whole realm of marine data distributed among a great number of organizations, people and places and in a variety of systems addressing many different purposes. This massive amount of data is something that features a lot of natural variability in terms of data appropriateness and conditions of availability for users' applications. Data are partially and not homogeneously described either by metadata or by web pages and documentation within their repositories, which makes a first filter on data actual content and quality and introduces uncertainty as to what the data sets really are.

The Checkpoints tools, specifically those developed by the Atlantic Checkpoint, can be seen as instruments observing and measuring this world of data. This is carried out by the challenges capturing metadata – either by transcribing them or by creating them – into a metadata base. These tools need to be calibrated, this is the reason why there will be adaptations and improvements over time following discussions within the project and feedback from DG/MARE and the Panel, along with other checkpoints. As with any human process, uncertainty adds up again during this operation for a number of reasons, primarily because choices offered to data editors are categorical. Categories may be imperfect, ill-defined, ill-informed and thresholds effects may build up.

Even more uncertainty is introduced by the “sampling strategy”. Sampling strategy here means that people either voluntarily or unvoluntarily explore some data sources and not others, hence under-sampling the realm of data repositories. This latter factor may be reduced when dealing with

reduced marine basins but specifically in the case of the Atlantic, the variety and number of data sources is so big from international to regional and national ones that any investigation is bound to miss a few of them and bias the results.

To summarise, a lot of uncertainty builds up in this observation process, from uncertainty inherent to the medium being observed through uncertainty due to imperfect tools and the human factor and finally because of the bias introduced by the sampling strategy. A checkpoint altogether resembles any observing system measuring quantities in nature.

1.4 The Checkpoint cycle

Checkpoints can be seen as a cycle with a whole set of sequential actions.

From DG/MARE needs expressed in the terms of references, the Checkpoint specified its methodology and its products. Products specifications lead to choosing the characteristics needed, their intended use and how they will be selected from current holdings. From there on input data sets are actually downloaded and while so doing their availability is assessed and in the first Data adequacy report feedback on data availability status is given to DG/MARE, the commissioner of the work as well as to upstream providers themselves.

The next step is to create products generated using these data, which leads to assessing their appropriateness. Again feedback is given in a way that best gives account of the various types of gaps encountered in data sets (spatial, temporal, semantic). After each report delivery the Panel is consulted for guidance. The checkpoint provides recommendations and priorities for decision making to improve monitoring systems to better fit user needs.

Whether checkpoints should be updated and at which frequency according to changes in marine data landscape is for DG/MARE to decide. In any case, the design of an open and repeatable process puts us on the safe side if an update was to occur.

The Checkpoint delivers the findings to several categories of stakeholders described in Table 1.4 through an internet portal. These findings are expected to specifically have a bearing on the main two audiences: Institutional policy-makers for the design of to-morrow's policy and providers for the improvement of their services.

One comment could be made about users, represented in our project by challenges. Most of these users - even though 3 private companies are involved in our partnership - rather have an academic profile, which means they approached challenges and data search with "positive prejudice", that is believing that data are mostly freely available and at no cost. This may prove to be somewhat different when seen from a fully commercial point of view and should be borne in mind.

Table 1.4: Checkpoints targeted audience

What for?	For who?
To provide indicators and statistics showing gaps and fact sheets, recommendations and priorities along with expert reports	Institutional policy-makers
To release feedback on upstream data availability and appropriateness and recommendations and challenges specifications for improvement of data collection and data availability	Upstream providers
To provide regional status and possible uses of existing monitoring data	Intermediate users
To discover, view and download checkpoint targeted products and associated upstream data evaluation to help end users seek input data for their own applications	End users

To present the European Checkpoint concept and products illustrating the EU Maritime Strategy for educational purposes

General audience

1.5 Main findings of the literature survey

The scope of the literature survey was a preliminary assessment of marine data for marine applications. Three tasks were performed (i) to find out what data were most needed to perform the challenges, (ii) to investigate whether this was confirmed in case studies from the literature, (iii) to make a preliminary assessment of data adequacy as reported by literature authors.

Firstly the characteristics shared by several of the Atlantic checkpoint challenges were easily retrieved. Additionally we checked that these characteristics were also shared by the 3 basins using the same methodology (Atlantic, MedSea and Black Sea). Then the assessment of availability per characteristic was made on a selection of most represented groups of characteristics (either P02 or P03) across challenges and across matrices (See Literature survey report page 93). Being based on case studies from the literature, the analysis yielded very patchy results, yet some interesting findings were reported which are summarized as follows:

- Birds, mammals and reptiles (P03: B015) data were found to be quite visible and accessible both in terms of distribution and abundance ;
- Habitat extent (P02: HBEX) maps from surveys were found to have quite low coverage and be rather difficult to find. In contrast broad-scale habitat maps - with limited biological content – cover a large fraction of EU marine basins and have very high availability;
- Nitrate and phosphate concentrations in water column (P02: NTRA and PHOS) are all available from online catalogues (e.g. GRDC) however these datasets are subject to agreements that leads to a lack of responsiveness.
- Water column temperature and salinity (P03: D025) were reported to be easily dealt with. The data used to produce the reported time series was available through a dedicated portal. Temperature data sources all perform well and are quite suitable for the intended use, their availability is high, as they are processed and distributed by the well-established community of physical oceanography that uses a combination of models and remote sensing data.
- Much the same as above can be said for currents (P03: D030) as they are also coming from the same physical oceanographic community. Currents data were easily accessible from the European Copernicus portal, mostly for horizontal current speed, while vertical speed is not as easily found.
- For sea level (P03: D032) data availability was reported to be good, with data free of charge and high visibility. Priorities for future development include the maintenance and continuation of the observing network and infrastructure such as the PSMSL database. High quality satellite-altimeter observations and GPS measurements need to become more widely available to provide valuable information on vertical land motion.
- Elevation (P02: MBAN), covering both bathymetry and coastal topography, is a characteristic shared by many challenges and studies, either directly or as a parameter that is used as an input to other intermediate variables. The main requirements from people are resolution and extent, which are inversely proportional. DTM products are highly available while survey data remain subject to providers' policies.
- The Fisheries (P03: H004) management challenge and related literature references mention fisheries data coming from several data sources such as the EU Data collection framework (DCF) or the FAO but many of them do not seem to be in the form needed. For catches there are fully maintained databases with long time series of marine organisms capture data in weight, available publicly at the shortest time possible. In spite of some delays in data submission by some countries, data are scored as highly available. However

only aggregated data become publicly available for further studies and analyses due to possible commercial sensitivity. Availability of by-catches and discards data was found to be medium.

- The category “Reference numbers” (P02: ACYC) contains ship positional data (VMS) which are considered to be sensitive and are not freely available. The unavailability of raw VMS data inhibits progress for studies measuring fishing impact on habitats at a fine scale. However, studies focusing on a particular fishery and covering a small area require only a subsection of the VMS data, therefore in the future the case could be put forward for accessing those VMS records that pertain only to the fishery in question.
- Human activities (H005) data, covering both administrative units and specific boundaries of activities at sea were quite diversely covered. Gaps can be mentioned about e.g. aquaculture infrastructures, recreational fisheries, tourism.

Some characteristics were found in literature that do not yet have a SeaDataNet code (e.g. Vertical land motion, combined action of waves and currents, ocean heat content). It would be a case of submitting these to the BODC for inclusion into SeaDataNet.

Finally one major thematic gap was identified in the challenge thematic coverage: the fate of contaminants in seawater.



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2 Assessment methodology and procedure

2.1 Availability indicators

The data adequacy assessment is based on data investigations made by the eleven challenges, from both the data availability and the data appropriateness standpoints, with availability attempting to answer the question “How are data collated to make products?” and appropriateness: “What are challenges going to do with them and how properly”?

While the literature survey had already cast a look at adequacy based on literature case studies, the present adequacy assessment work is going to investigate real present time data.

The idea is to look at these two areas of adequacy - availability and appropriateness - and come up with indicators from green to red to represent them (Fig. 2.1).

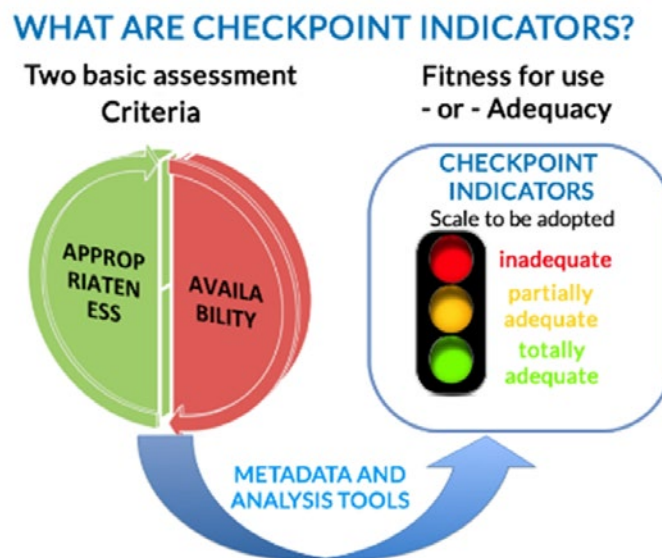


Fig 2.1: Adequacy indicators based on two sets of criteria

The ISO19157 Data Quality standard is focused on the quantitative quality evaluation of the data *sensu stricto*. However its principles are applicable to the services and the «Technical guidelines for the implementation of INSPIRE dataset and service metadata based on ISO19139» gives a few examples but this is still a draft. In addition, the evaluation of the conditions of availability according to the user point of view is mainly based on a non-quantitative determination of the adequacy of the conditions of discovery and of the distribution of the required datasets.

Three classes of non-quantitative criteria using ISO19115 metadata were defined, including 8 indicators. They are quickly summarized below and described in Table 2.1.

Visibility

- Ability to identify and to get quickly to the appropriate site delivering the desired datasets
- Level at which the data are indexed (e.g. in EU catalogues)
- Visibility of data policy

Accessibility

- Delivery mechanism: Identification of main types of services: discovery, viewing, downloading and order
- Data policy: Degree of restriction to access data
- Pricing
- Readiness for use (Format including convention)

Performance

- Responsiveness: The lack of responsiveness is linked to data policies or to delays in public updates more than to technical problems.

Table 2.1: Detailed description of availability criteria and associated keyword lists

Ease to find	Delivery mechanism	Visibility on data policy
<ul style="list-style-type: none"> • Cited in peer reviewed paper or grey literature but no info on how to access • Information retrieved on specific request to the data source • Search via reference catalogue • Use of open search engine, searching by name either the data provider or the characteristics • Use of social network, communities of practices sharing information, portals of organisations where no search is organized 	<ul style="list-style-type: none"> • No information was found on data delivery mechanisms • Manual process: Order form/invoice is requested • Online downloading services • Online discovery and downloading services • Online discovery + downloading + viewing services (Advanced services) 	<ul style="list-style-type: none"> • There is no information at all on data policy adopted by data providers • There is information, but details are available only on request • There is detailed information provided to understand data policy
Data policy	Responsiveness	Readiness
<ul style="list-style-type: none"> • Not or not well documented • Restricted • Under moratorium • Unrestricted 	<ul style="list-style-type: none"> • No information on response time • More than 1 week for release • Less or equal one week for release • On-line downloading for release in less or equal than a few hours 	<ul style="list-style-type: none"> • Format not or not well documented • Format not proprietary but content not clearly specified • Format proprietary but content clearly specified • Format not proprietary and content clearly specified (e.g. autodescriptive like ODV, NetCDF CF) or at least with appropriate document describing the content

Among these 8 indicators, both “Pricing” and “Visibility in EU catalogue service” were removed upon considering they would bring more uncertainty and would not be of actual relevance.

“Pricing” was generally not investigated by people as long as download was possible. In addition quite often pricing is not described in websites, so informing this item quite often appears unpractical.

“Visibility in EU catalogue services” was primarily informed by challenges but eventually removed on the ground that the two categories “*The datasets are provided through an EU Inspire catalogue service (OGC)*” and “*The datasets are referenced in a public national catalogue, in an international catalogue service*” were ill-interpreted by challenges.

The present DAR deals with availability only, an area that does not yet involve making products but just checking how easily, effectively and rapidly data sets can be made available as inputs to future products. These availability indicators do not depend on the subsequent use that will be made of data sets, therefore in this regard they are expected to be rather “objective”.

Three different filters will be applied, each of them giving a different picture of the availability landscape:

- From a challenge point of view, this assessment will focus on users needs and will describe for each data set used by the challenges a set of indicators drawn from their metadata illustrating their availability;
- On a characteristic basis, it will be a matter of (i) identifying among the approximately 80 characteristics identified in the literature survey which ones are most frequently required and (ii) producing the same availability indicators for them.
- From a data source point of view, it was deemed important to also assess two major data services: EMODnet and Copernicus.

Only in a second phase, after the products have been created, will it be possible to tackle data appropriateness, to be reported in the second DAR. In contrast with availability, appropriateness is fully challenge-dependent, which means the same dataset may be assessed quite differently from a challenge to the next.

2.2 Building up the metadata base

To meet the checkpoint purposes and to satisfy the INSPIRE Directive requirements the Consortium opted for Sextant, a spatial data infrastructure for marine environments. It provides access to various geographical data via web services (catalogue, viewing, downloading) using standards defined by the Open Geospatial Consortium (OGC) and the ISO Technical Committee (ISO/TC 210, Geographic information). It ensures the dissemination of challenge products and assessment results.

Sextant uses Geonetwork to set up the Catalogue Services for the Web, also used by several past or present EU projects such as EMODnet, GeoSeas, SeaDataNet and services, such as CMEMS. It is compliant with ISO 119115 and ISO19139 metadata standards and fulfills the INSPIRE Directive requirements.

For the purpose of the Atlantic CheckPoint, Sextant is used to describe the upstream data, to handle the information needed for the establishment of the fitness-for-use indicators and to store the Challenges targeted products when available.

The Atlantic Sea basin Checkpoint metadatabase contains information describing input data to the Challenges that are uniquely identified as a combination of categories of characteristics, providers and other descriptors. Upstream data are classified in terms of:

- Characteristics by using the SeaDataNet common vocabularies (P03-P02-P01 lists)
- Environmental matrices (from MedSea)
- INSPIRE spatial themes
- Data sources by using the SeaDataNet common directories (EDMO and EDMERP).

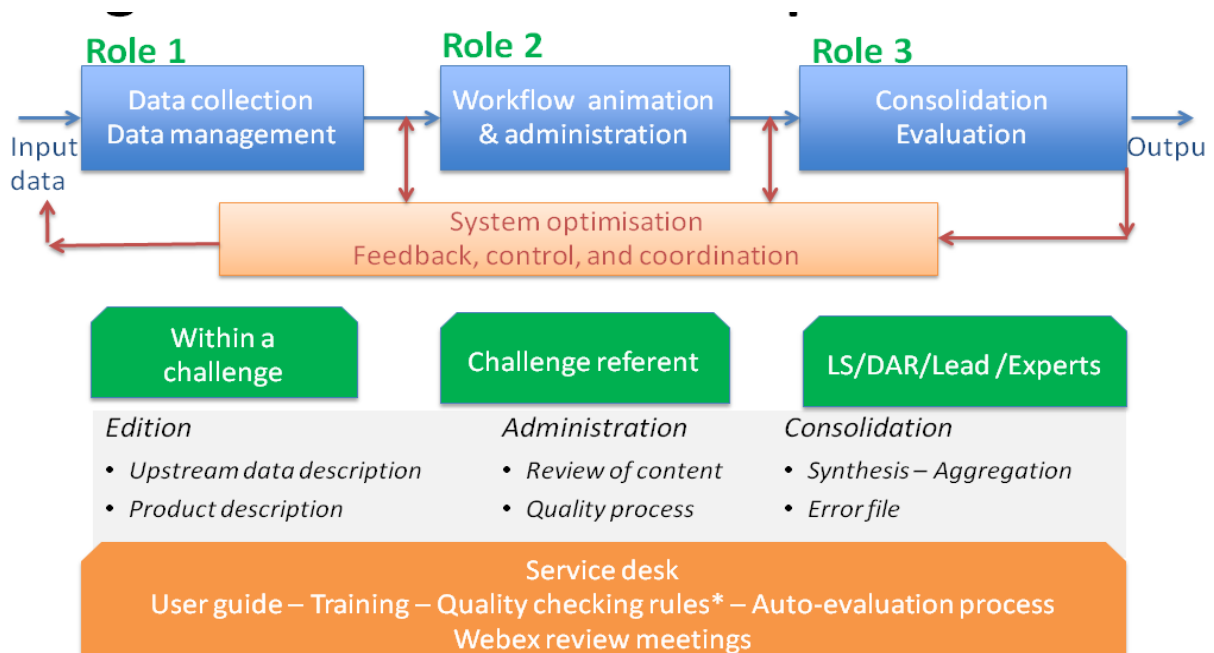
The descriptors are broken down into eight groups (see Appendix 1).

- Characteristics (= What)
- Data sources (= What and Who)
- Overview (= What for)
- Spatial coverage (= Where)
- Time coverage (= When)
- Availability (= How)
- Data quality (= What)
- Metadata information (= for management purposes)

2.3 Workflow

A workflow ensuring the quality of the information was set up and the roles of the contributing actors defined. Four different roles or actors were identified (Fig. 2.3):

- Role 1: The Editor [Within a challenge] is the person who compiles metadata and edits them for the challenge;
- Role 2: The Referent/ reviewer [Within a challenge] is the person who is responsible of the reliability of the metadata content and gives full account of actions to ensure the quality of the metadata to data provider and producers as well as to the checkpoint users. The reviewer approves or rejects the metadataset submitted by the challenge editor and conducts actions to make metadata sets compliant with the quality requirements and standards used by the project in terms of data and metadata quality;
- Role 3: The database Administrator [Transverse for LS and DAR aims] is in charge of the overall consistency of the database and acts under the responsibility of the project coordinator;
- Role 4: The Service desk includes support to operations.



* e.g. priority sources, fulfillment of content, source name(cf. error file)

Figure 2.3: Process around metadata collection

2.4 Validation of metadata edition

After checkpoints experts had edited their metadata in Sextant, it was necessary to validate the work done, i.e. to assess the completeness of the metadata files and to check whether the choice of categories was correct. This was carried out by a validation team using bespoke guidelines referred to as “Quality check of the availability metadata in the EMODnet Atlantic CheckPoint” to be found in Appendix 2.

The validation was conducted on a sample of 442 out of 557 datasets. This sample was selected on the basis of a restricted number of most recurrent P02 (groups of characteristics, Appendix 2) and a selection of four availability criteria that were deemed essential to obtain a good preliminary picture of the availability landscape.

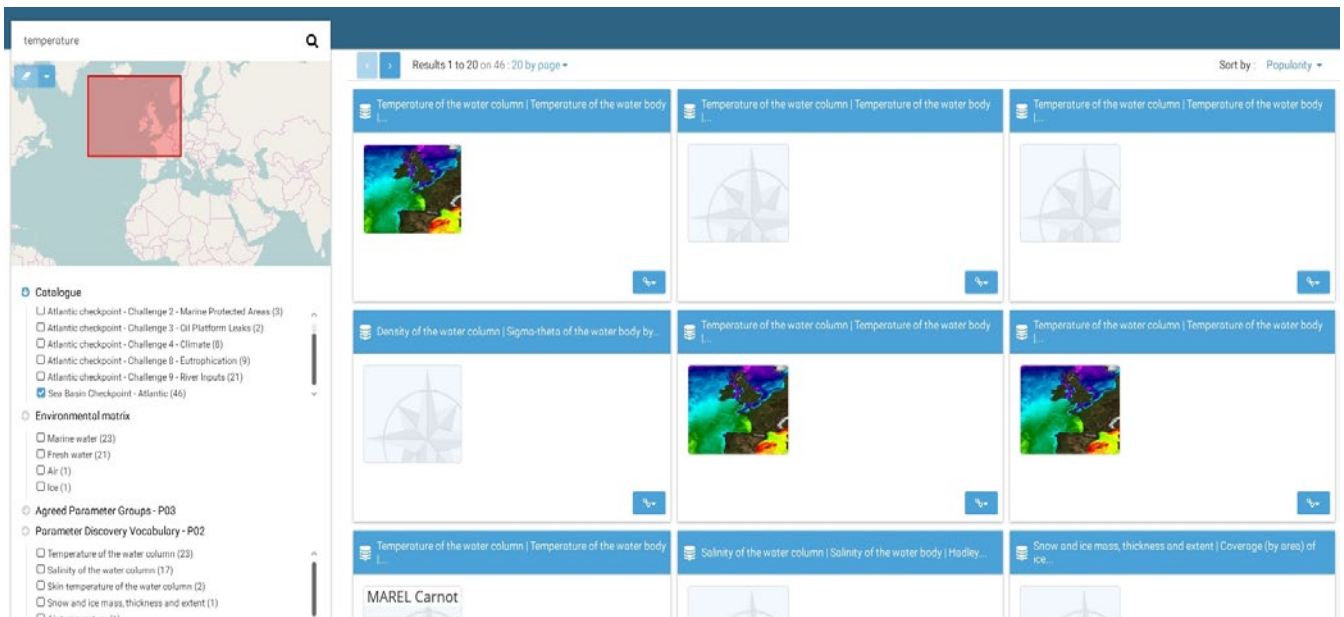
These criteria are: a) ease to find, b) data policy, c) delivery mechanism and d) responsiveness.

The first three are mostly independent, however there is a slight correlation between a) and c) because in the case of advanced discovery services, delivery mechanisms usually follow suit. Responsiveness is of lesser relevance due to its link with Delivery mechanism: high quality of delivery services usually implies quick process and response.

2.5 Reporting the metadatabase content online

The Checkpoint portal at <http://www.emodnet-atlantic.eu/Checkpoint-service> offers the possibility to search and discover the input datasets used by the challenges and enables data providers and producers to themselves access the description and assessment of their own datasets and get feedback from the Checkpoint:

- The Browser facilitates the search of upstream data identified by the Challenges. It is a Google-like search function, which allows users to easily find and select the necessary information;



The screenshot shows the Atlantic checkpoint browser interface. On the left, there is a search bar with the word 'temperature' entered. Below the search bar is a map of the Atlantic Ocean with a red box highlighting the search area. A 'Catalogue' sidebar on the left lists various categories and challenges, with 'Sea Basin Checkpoint - Atlantic (46)' selected. The main area displays a grid of search results. The top row shows three results for 'Temperature of the water column | Temperature of the water body'. The middle row shows three results for 'Density of the water column | Sigma-t_{theta} of the water body by' and 'Temperature of the water column | Temperature of the water body'. The bottom row shows three results for 'Temperature of the water column | Temperature of the water body', 'MAREL Carnot', and 'Salinity of the water column | Salinity of the water body | Hadley...'. Each result card includes a thumbnail image and a blue 'Go' button.

2.5.1: The Atlantic checkpoint browser

- The Dashboard presents the indicators automatically produced from the metadatabase. It aggregates values and allows interactive filtering on challenges.
- The Browser and the Dashboard are dynamically linked: any selection made on the Dashboard filters metadatasets in the browser.



2.5.1: The Atlantic Checkpoint browser

It was decided to use three colors illustrating the degree of satisfaction determined by comparison of the conditions of availability and the expected ones (user requirements) with the following general meaning:

- Red: effective actions are required to provide fit for use datasets and services;
- Yellow: limited actions are required to provide fit for use datasets and services;
- Green: actions and services are fit for use and must be maintained.

While indicators are informed according to the categories described in section 2.1, a look-up table (Table 2.5) was designed to establish a correspondence between these actual categories and the three-colour flags used for online reporting.

Table 2.5: Look-up table between indicators categories and three-colour flags

Short definition / Full question	Value	Flag
Ease to find Can the data sets or series of datasets be found easily?	1. Cited in peer reviewed paper or grey literature but no info on how to access	LOW VISIBILITY
	2. Information retrieved upon specific request to the data source	
	3. Use of social network, community of practices sharing information, portals of organization where no search is organized by an engine	MEDIUM VISIBILITY
	4. Use of open search engines, searching by name either the data provider or the characteristics	HIGH VISIBILITY
	5. Search via reference catalogue (e.g. MyOcean, GEOSS Geoportals, ...)	

Visibility of data policy How visible is the data policy adopted by data providers?	1. There is no information at all on data policy adopted by data providers	LOW TRANSPARENCY
	2. There is information, but details are available only on request	MEDIUM TRANSPARENCY
	3. There is detailed information provided to understand data policy	HIGH TRANSPARENCY
Data Policy What is the data policy?	1. Not or not well documented	LOW SHARING
	2. Restricted	
	3. Accessible under moratorium	MEDIUM SHARING
	4. Unrestricted	HIGH SHARING
Data delivery mechanism What services are available for users to access data?	1. No information was found on data delivery mechanisms	LOW ACCESSIBILITY
	2. Manual process: Order form/invoice is requested	MEDIUM ACCESSIBILITY
	3. Online downloading services	
	4. Online discovery and downloading services	HIGH ACCESSIBILITY
	5. Online discovery + downloading + viewing services (Advanced services)	
Readiness of format for use How ready is the format for operational use?	1. Format not or not well documented	NOT READY TO BE USED
	2. Proprietary format and not well documented	
	3. Format not proprietary but content not clearly specified	
	4. Format proprietary but content clearly specified	CAN BE PROCESSED TO BE USED
	5. Format not proprietary and content clearly specified (e.g. autodescription like ODV, NetCDF CF) or at least with appropriate document describing the content	READY TO BE USED
Responsiveness Delivery speed	1. No information is found on response time	LOW RESPONSE
	2. More than 1 week for release	MEDIUM RESPONSE
	3. Less or equal to 1 week for release	
	4. Online downloading (i.e. a few hours or less) for release	HIGH RESPONSE



Sea Basin Checkpoint Lot 2 : Atlantic

D14.1
Version:1.0
Date: 26/11/16

3 Results and discussion

3.1 Data base completeness

Data editors were requested to go further than just identifying their data sets in catalogues. They were requested to download them in order to make sure of their actual existence and also get an idea of the responsiveness of their data sources and the types of format they were expressed in (readiness).

The degree of completion of the work was quite good and very few empty cells remained about data identity. The following global statements can be made:

- P02 were very thoroughly informed (545), as well as P01 (554), which means people found the SeaDataNet (SDN) P02 vocabulary globally suitable. In contrast, when editing P01 they were offered the choice to either opt for a P01 name from the SDN list or otherwise inform the characteristic with their own words (e.g. “kinetic energy at the seabed”). As could be expected, this latter case represented a strong majority as it occurred 387 times. This proves the SDN P01 list is far from being complete to address the very broad variety of singular data characteristics and that this issue has to be addressed with the SDN experts.
- Regarding data sources, in the 17 cases where the EDMO (Organisation) name was empty, so was the EDMERP (Project) name, which is rather understandable. There were a great many ways of naming organisations (130) due to missing organisations in EDMO. For example there are multiple references without a common name which made it difficult to group results per organisation. It is worth mentioning there are no recommendations for citation of organizations (and programs) names and acronyms.

Regarding the four availability criteria informed by the challenges, the degree of completion of data capture is recapped in Table 3.1:

Table 3.1: Completeness of availability criteria edition (out of 557 records)

Visibility Ease to find	Accessibility Data policy	Accessibility Visibility of data policy	Accessibility Readiness	Accessibility Data delivery mechanisms	Availability Performance Responsiveness
539	556	539	513	539	489

The “Ease to find” indicator was informed for 97% of the records, as well as the “Data delivery mechanisms”. “Data policy” reached 100%, while “Responsiveness” and “Readiness” were respectively at 88 and 92%, which reflects the fact that probably sometimes editors did not always go as far as downloading the data sets.

Most of the empty availability cells belong either to the River inputs or Alien species challenges. The latter case is easily explained by the fact that most alien species data sources are either documentary websites, papers or grey literature documents, in which case the data editor was not fully confident how to report this. In the former case, it is likely that some downloads were not performed. This challenge will be allowed more time to finalise this when downloading data sets for the creation of products.

3.2 Reliability of the data base content

Following the quality check specified in the quality control (QC) manual of Appendix 2, four reviewers carried out data validation on a large sample of records (442 out of 557) selected from the most frequently used characteristics. These data were sourced from the metadata base status as of 27 Oct. 2016. This task implied going as far as challenge editors did, i.e. to the actual data download. In order to reduce the workload, we only assessed four availability criteria. The scoring was between 1 or 0 to reflect the correctness of the information captured. The “NA” option was used when neither of the previous two was adequate.

The validation statistics are described in Table 3.2.1 below:

Table 3.2.1: Overall breakdown of availability criteria for the 11 challenges

	Information correct (1)	Information uncorrect (0)	Not available (NA)
Ease to find	331 (75%)	95 (21%)	16 (4%)
Delivery mechanisms	215 (49%)	151 (34%)	81 (18%)
Data policy	310 (70%)	91 (21%)	41 (9%)
Responsiveness	204 (46%)	162 (37%)	76 (17%)

According to these figures, it seems people rather reliably informed two of the availability criteria (Ease to find and Data Policy, with respectively 75 and 70% of correct metadata), which means they had a good understanding of the choice they had to make. These good figures tend to indicate that the categories proposed were understandable. In contrast, there are moderate results for Delivery mechanism and Responsiveness, with only around 50% of correctness, which leads us to investigate data capture but also question the soundness of the proposed categories.

Regarding Delivery mechanism, there clearly was a confusion between 3 categories, namely “Online downloading services”, “Online discovery and downloading services”, “Online discovery + downloading + viewing services (Advanced services)” which induced a number of wrong choices. For example, whether editors correctly interpreted the availability of “viewing services” may have a strong bearing on these statistics, while it does not have a fundamental influence on actual data availability. If the mere “downloading service” had been requested, then scores would have been much higher. Likewise the low score of Responsiveness is partly linked to that of delivery.

Other issues were, to quote a few: no data set identified, no download function identified, login required or preliminary contact needed (e.g. for Previmer). In some cases, an order is immediately followed by downloading permission (i.e. GEBCO), in which case the choice is not easy.

These figures are going to be used for the present time to moderate our reporting of availability but more importantly to feedback these issues to challenge editors. Following debriefing and corrections, another iteration will be carried out in the next few months at the time of product making. These issues are described in the validation comments given by the evaluators.

All the results provided herebelow therefore have to be considered while bearing in mind the above-mentioned percentages.

The same figures can be broken down per challenge as shown in Table 3.2.2.

Table 3.2.2: Breakdown per challenge of correctly informed availability criteria along with overall percentage

Challenge	Nb of Entries	Ease to find	Delivery mechanism	Responsiveness	Data Policy	% Correct
Windfarm	43	38	17	23	37	67%
MPA	106	101	66	76	95	80%
Oil leak		35	28	33	33	92%
Climate	12	9	5	7	9	63%
Coasts	24	21	18	12	19	73%
Fish. manag.	43	21	3	1	22	27%
Fish. Impact	21	11	10	10	11	50%
Eutrophication	34	20	15	11	16	46%
River inputs	53	36	18	13	22	42%
Bathymetry	34	24	18	21	23	63%
Alien species	31	11	4	0	20	28%

The percentage of correct data capture was obtained by merely averaging all four numbers of correctly informed cells and ratioing them to the number of entries; so this percentage is global and does not account for variations between criteria.

The salient challenges are Oil leak (82%) followed by MPA (80%), coloured in light blue. The fact that the Oil leak challenge sticks out from the others is because this challenge has already made its operational products in May 2016 and was therefore confronted quite early with both availability and appropriateness assessments. Second comes the MPA challenge with 80% of correctly informed metadata, which is quite a promising score given the high variety and number of data sources concerned for this challenge.

The low score of Fisheries management is probably explained by a poorly organized sector of activities in terms of data policy and dissemination. That of Alien species denotes the current global lack of knowledge in this field and the subsequent gaps found in data repositories and dissemination.

3.3 General availability assessment

The present general assessment of data availability conditions is primarily focused on the observations made by the challenges up to now in terms of:

- Searching data
- Looking at the data policy to determine the conditions of access and their limitations of use either legal or thematic
- Getting data

Five out of the 8 indicators were used for this purpose:

- Ease to find
- Data policy visibility
- Data policy
- Delivery mechanisms

- Responsiveness

The analysis uses the statistics below (Fig. 3.3.1) to extract observations of general interest with examples to illustrate some points which can be underlined while bearing in mind the uncertainty of the results commented previously. The analyses per challenge and per characteristic category (using the SDN P02 list) are developed in the following sections.

Positive aspects and downsides are given for each key indicator.

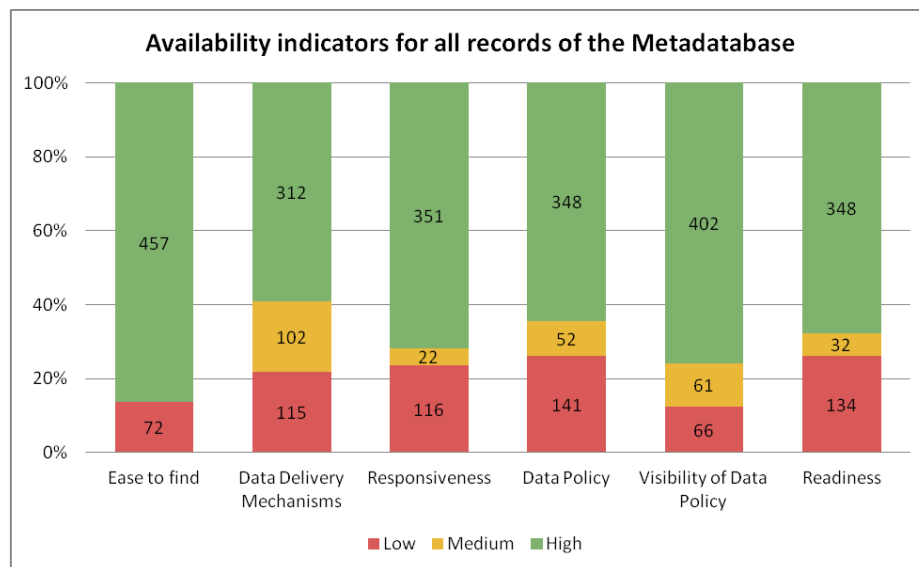


Figure 3.3.1: Degree of adequacy of the availability conditions according to the checkpoint scale (Low, Medium, High) expressed as a percentage of observations (availability criteria) made by the challenges. Note that a same dataset source may be evaluated several times by different challenges

3.3.1 Overview

⊕ Approximately 75% of the identified datasets or dataset collections are in keeping with the conditions of data availability expected by the challenges. Since the 90's it has been for a large part the role of the EU to develop the ESDI (INSPIRE) and to assemble data (e.g. EMODnet, Copernicus). However while some domains have fully benefitted from the development of technologies facilitating access to data through the internet (e.g. physical oceanography) others have been lagging behind (e.g. in the area of invasive species) and need to catch up in this respect (see the results per challenge and per characteristic below).

⊖ For 25% of the identified datasets, the statistics show difficulties to find data, to be informed of the legal conditions of their use and to get them in an appropriate manner (responsiveness and readiness), which constitute as many potential data gaps.

3.3.2 Ease to find indicator

⊕ 85% of the datasets have been easily found using either the existing catalogues from well-known data sources (e.g. Copernicus, EMODnet...) or using search engines. Most of the required datasets can be found using the internet because major catalogues are usually referenced by search engines. However, even in these favorable cases, there are actions needed to optimize search by end users, especially by people not familiar with EU programmes and academic bodies.

- ⊖ 15% of the datasets are difficult to find. To the tender question “Can the data sets or data sets series be easily found”, two bottlenecks are generally identified as follows: a) is there a real lack of data for a given characteristic, or b) is the lack of data due to a lack of providers’ visibility?

Visibility: Data indexing

In spite of the existence of 2 catalogues of general interest available to identify datasets and sources, none of them has been used by the challenges to search data. These are the European Directory of Marine Environmental Data (EDMED: <http://www.seadatanet.org/Metadata/EDMED-Datasets>), a real progress from the 1990s which unfortunately does not fit the present overall users’ needs and practices, and the INSPIRE geoportal (<http://inspire-geoportal.ec.europa.eu/>) which is not well known and suffers from some limitations (*de facto* focused on land data, coming from national sources in Member States, 2011 version, difficult to use etc.).

Many datasets are indexed in thematic catalogues (as shown in the statistics) however finding these catalogues requires some expertise. Assembly data initiatives such as EMODnet attempt to fill this gap, however users are faced with a huge amount of data (see the Checkpoint statistics in the literature survey and the present DAR). A Master Directory to route end users towards the appropriate data sources is needed. NASA’s Global Change Master Directory (<http://gcmd.nasa.gov/>) is an example which could be considered although it is limited to climate change.

Finally, data cited in publications or grey literature often are not accessible. This mostly concerns datasets needed by the “Invasive species” and “Bathymetry” challenges (see analysis per challenge in 3.4).

Visibility: Website indexing and design

Search engines are now the main tool to search and hopefully find data. However data portals and data providers’ web sites suffer from several limitations entailing a waste of time and potential gaps due to sources of data being hard to locate. Most users do not go further than the first 2 pages of their search, which means data providers have to optimize their sites to be easily found among the top 40 results returned by a search.

The Search Engine Optimization (SEO: https://en.wikipedia.org/wiki/Search_engine_optimization) is a series of techniques to meet users’ needs which are probably overlooked by data providers, especially institutional and academic bodies. In addition the lack of standard and guidelines for harmonised web sites is a brake to the use of existing data.

Common Vocabularies

One of the difficulties in finding data is the lack of a vocabulary common both to data providers and end users allowing discovery not only at catalogue but at portal level. To increase the relevance of a website to specific keywords, the use of the SeaDataNet common vocabulary lists (P03 and P02 in particular) by both providers and end users as tags and user words would make searches more efficient, a recommendation to be discussed.

Lack of Digital Object Identifiers

DOIs provide persistent links to contents, helping users get to the authoritative, published version of the contents they are searching for, even when contents changes location or ownership. Assigning DOIs to datasets and other research objects supports simple and effective methods of data citation, discovery and access. Citable data become legitimate contributions to scholarly communication. The use of data DOI should improve data search by providing links from scientific papers to datasets and their descriptions and will contribute to a better indexing of dataset by search engines in directories and catalogues thanks to the name provided for citation (e.g. EMODnet Bathymetry Consortium (2016). EMODnet Digital Bathymetry (DTM). EMODnet Bathymetry. <http://doi.org/10.12770/c7b53704-999d-4721-b1a3-04ec60c87238>) and should

facilitate the access to data referenced in publications. The use of DOIs will help keep track of the data collections assembled within national or EU programs that are not indexed in catalogues.

Difficulties to identify data providers

The Atlantic, Medsea and Black Sea checkpoints alike make use of the European Directory of Marine Organisations (EDMO) maintained by SeaDataNet. Maintaining this directory is paramount as long as no other way to identify organisations in charge of data collection and management is available.

Lack of data assembly

Challenges reveal domains where information is scattered (Fig. 3.3.2 from the literature survey) and needs to be completed and structured. This point concerns areas such as Invasive species, River inputs or Bathymetry where information had to be extracted from publications or local studies (see sections related to challenges and characteristics).

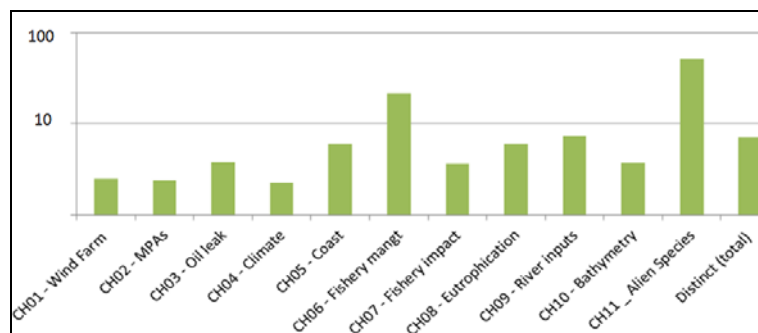


Fig. 3.3.2: Ratio of the number of potential input datasets to the number of P02 categories of characteristics per challenge (logarithmic scale; total number of input datasets: 551)

3.3.3 Data policy indicator

⊕ More than 65% of the required datasets appear unrestricted and this score reaches 75% when including data indicated “under moratorium”. According to the definition adopted from the SeaDataNet common vocabulary, these data sets are initially restricted but this condition relaxes to academic or unrestricted once a specified period of time after an event (such as collection, publication, completion of QC procedures or project termination) has elapsed.

This result has to be moderated because a significant number of data policies are difficult to find and existing ones require to be read carefully: restrictions may exist for commercial purposes, a restriction which has not been really considered by the Atlantic challenge partners because they have a rather scientific profile. As an example the Scripps Global Topography described in the Bathymetry challenge (“Bathymetry and Elevation | Seabed topography | Scripps Institution of Oceanography | Measured and estimated Seafloor Topography) has commercial use conditions.

This perception has also to be moderated according to the spatial resolution required: the EMODnet Digital Bathymetry (DTM) can be downloaded while some of the high spatial resolution background data may not be available (see below section 3.6) when sharing would compromise public security, national defence or international relations.

⊖ More than 25% of the datasets required by the challenges suffer from restrictions or lack of information on the conditions of use. Restrictions concern mainly the Fisheries management, Bathymetry and Invasive Species challenges. It is noteworthy that most data available through publications fall in these categories. Data status is complex, depending on the kind of use: open to any kind of application, only to academic use, at a cost for commercial use or fully restricted. This

variety of constraints is described using various wordings making it difficult to understand the policy and then to report it in a unique identifier. Common vocabulary and definitions have to be adopted by the different data providers. In addition (see Data policy visibility), it is often difficult to find the data policy, which prompts end users to wrongly think the presence of a downloading service is equivalent to an open data access.

3.3.4 Visibility of data policy

- ⊕ More than 75% of data policies records provided enough detailed information. However the answer would probably not be as good for private users and commercial applications (not represented in challenges whose framework is academic, see 1.4) as this information is available only on request, the data policy indicating only that the provider has to be contacted).
- ⊖ 15% of the data policies are either missing or available on request. Data policy, when existing, is available either in a document related to the whole data collection, or within a web page, or attached to each dataset description in data catalogues, or in a README file for download with the data file (e.g. Scripps Global Topography). When the data policy is available on a web site, it is often difficult to find due to a lack of consistency in portal design. It can be found in menus such as: “Service commitment and licence” (Copernicus), “Acknowledgment” (Emodnet Chemistry), “Terms of use” (EMODnet Geology), “Disclaimer” (GEBCO) or sometimes “Data policy” etc. The lack of guidelines about the legal constraints make it difficult to know if data can be used and the lack of Service Level Agreement ensuring that users get the information in due time are potential sources of gaps. Guidelines for writing and displaying data policy in an understandable manner on data web sites would be useful and these conditions should be specified in EU calls for tenders.

3.3.5 Delivery mechanisms indicator

- ⊕ 60% of the required datasets are accessible according to the EU INSPIRE regulation for spatial infrastructure (<http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32007L0002>) regarding the main 3 services:
 - Discovery services making it possible to search for spatial data sets and services on the basis of the content of the corresponding metadata and to display those;
 - View services making it possible, as a minimum, to display, navigate, zoom in/out, pan, or overlay viewable spatial data sets and to display legend information and any relevant content of metadata;
 - Download services enabling copies of spatial data sets, or parts of such sets, to be downloaded and, where practicable, accessed directly.
- ⊖ Quality metadata checks revealed that existing discovery and viewing functions were not properly identified in a significant number of cases (see section 3.2) so the score has to be revised upwards. Nevertheless, around 80% of the required datasets are downloadable on line. Exceptions relate to specific data collated in publications but not downloadable from data bases.
 - 20% of the datasets have to be requested because:
 - Either data are in textual form in publications (e.g. Invasive species)
 - Or there is a reluctance from data owners (e.g. Fisheries management)
 - Or costs are involved (e.g. Bathymetry).

Atlantic coverage of the checkpoint

According to the tender most challenges were requested to cover the whole Atlantic, which means they had to seek data across the ocean and to the shores of North America. Looking at the records, the number of data sets originated from North American sources amounts to 75. From these 71 are easily found through open search or catalogues and the same amount feature high

quality delivery mechanisms. Expectedly 53 have an unrestricted data policy, which is the usual rule in the USA. It is worth noting the challenges limited themselves to US sources and did not investigate Canadian, Caribbean or African ones.

3.4 Availability assessment per challenge

The data adequacy specifications request that adequacy is firstly assessed per challenge so as to get an overview of the data landscape per thematic area. To achieve this we summarized metadata per challenge for the six availability criteria.

It is likely that for challenges with a narrow and specialised scope this assessment is going to show how organized the communities dealing with these topics are. For example when we deal with areas such as fisheries management, coasts or climate, the number of characteristics required is low, therefore the number of providers is also likely to be low, so we expect to come up with clear statistics leading potentially leading to clear recommendations. On the other hand for pluridisciplinary challenges using a great variety of data types (e.g. windfarm siting, marine protected areas, oil leak) a larger dispersion in data types and data providers is expected and therefore the assessment from this challenge standpoint may not be as relevant.

The first three criteria are shown in Fig. 3.4.1. They are related to access to data, i.e. the ability of people to find the right data and actually be able to download them into their computers.



Figure 3.4.1: Ease to find, Data delivery mechanisms and Responsiveness for the 11 challenges

There is an outstanding issue with fisheries, primarily with the Fisheries management challenge but also to a lesser extent with the Fisheries impact challenge, where all criteria score rather low. This is probably due to low availability of fisheries catch data for the former and vessel position

data for the latter. Lesser issues appear with Eutrophication, Coasts, River inputs and Bathymetry whose “Delivery mechanisms” are below average. Alien species data are mostly found in documents and papers, which may entail slow download.

Responsiveness quite predictably follows the trend of Delivery mechanisms, however there are instances where responsiveness may score better than Delivery for example when the latter states “Manual process: Order form/invoice is requested”, which does not preclude quick download.

When it comes to Data policy and its visibility (Fig. 3.4.2), the same situation generally appears, save for Alien species which shows a surprisingly low score, which was not expected for this theme. However this may result from mixing up Data policy and Visibility of data policy, the latter being mostly reported as missing in the referenced data sources.

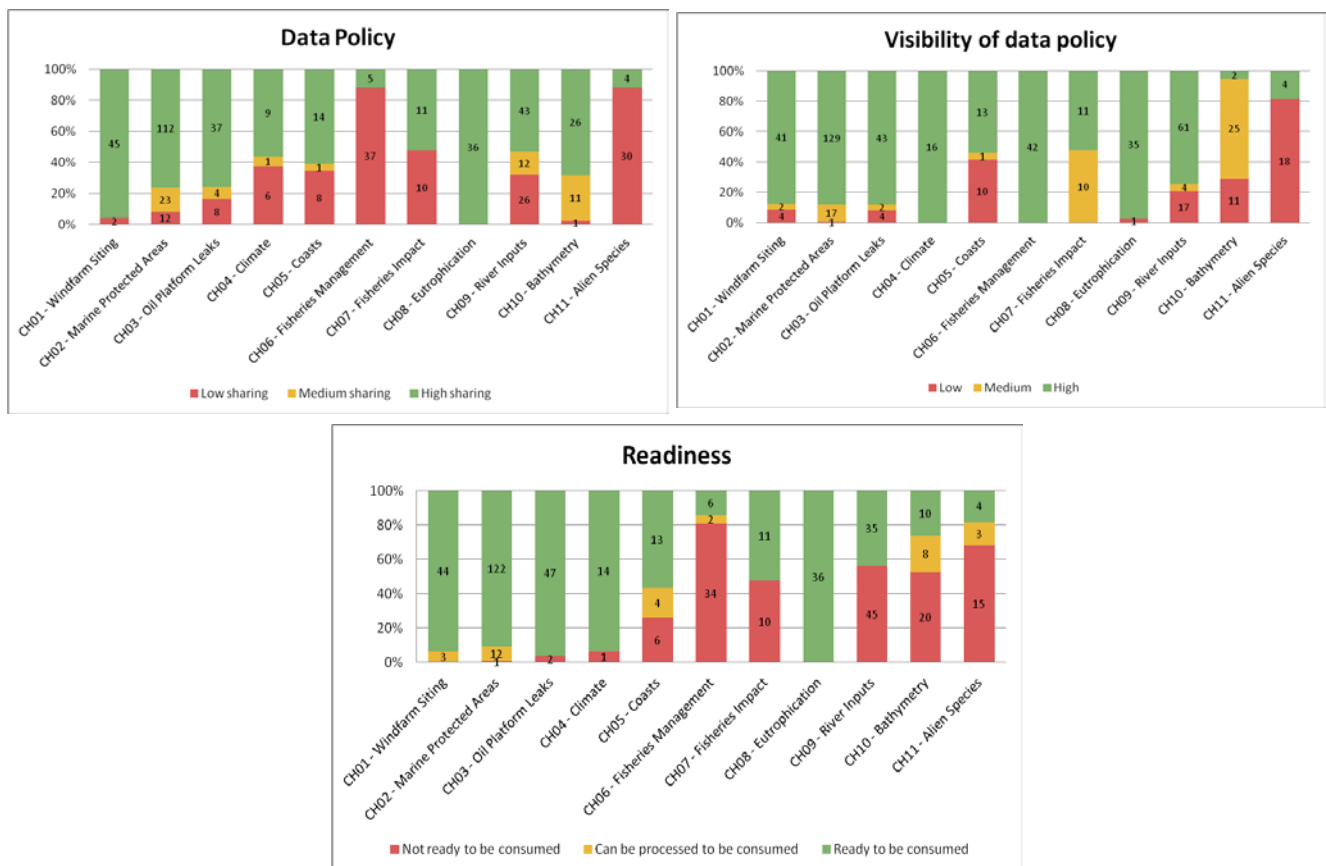


Figure 3.4.2: Data policy, Data policy visibility and Readiness for the 11 challenges

Data policy visibility is strikingly good for fisheries, while data policy is highly restricted. This means the policy is clearly geared towards restriction of data availability. For fisheries impact, vessel positioning data are restricted but policy thereabout is unclear. Another salient fact is Bathymetry where very high resolution depth and vessel positioning data are needed, for which data policy is rather open but its visibility remains low.

Among the 11 challenges, 3 champions can be found which happen to be the most pluridisciplinary ones (Windfarm siting, Marine protected areas and Oil leak). They perform quite well in addressing a wide variety of data and sources. Among them only MPA reports moderate delivery capacity. However perhaps the averaging effect induced by the large number of characteristics hides more specific issues. For these cases, we would rather rely on the adequacy assessment per characteristic reported in the section below to deliver more substantial messages.

3.5 Assessment of availability per characteristic

The assessment per characteristic was performed on a subset of 20 categories of characteristics P02 which represent a very large fraction of the total amount of characteristics and encompass the whole variety of thematic areas. These groups and their contents are detailed in Appendix 2.

The bar charts below should always be interpreted while bearing in mind the number of occurrences of data sets. For example statistics for Fisheries with 52 records are more reliable than those made for Pigments with only 4 records.

The general synopsis of these charts shows many similarities. Overall, difficulties are found with Fisheries and Geology, with Invasive species and with a group going from River flow to Suspended particles". Other features are more irregular and not as constant from a chart to the next.

Comments about best performing data categories for all indicators are:

- Biological data for birds, marine mammals and reptiles exhibit good scores for all criteria;
- Bathymetry and Habitats probably benefit from the strong thrust given by EMODnet (and OSPAR for habitats);
- Fish abundance and reproduction are scientific data which are easily accessible;
- Waves and wind, being key meteorological data, are managed by long-established communities. Currents also score well.

Categories of data performing not so well for all indicators are:

- Fisheries
- Human activities and administrative units
- Sea level

Generally data sets were quite easy to find, whether through search engines or catalogues. We can see the recurrent problem with fisheries data and some difficulties about "Geology and geomorphology". Note that for this indicator only two categories are represented because the category "Use of social network, community of practices sharing information, portals of organization where no search is organized by an engine" was used by none of the Atlantic challenges.

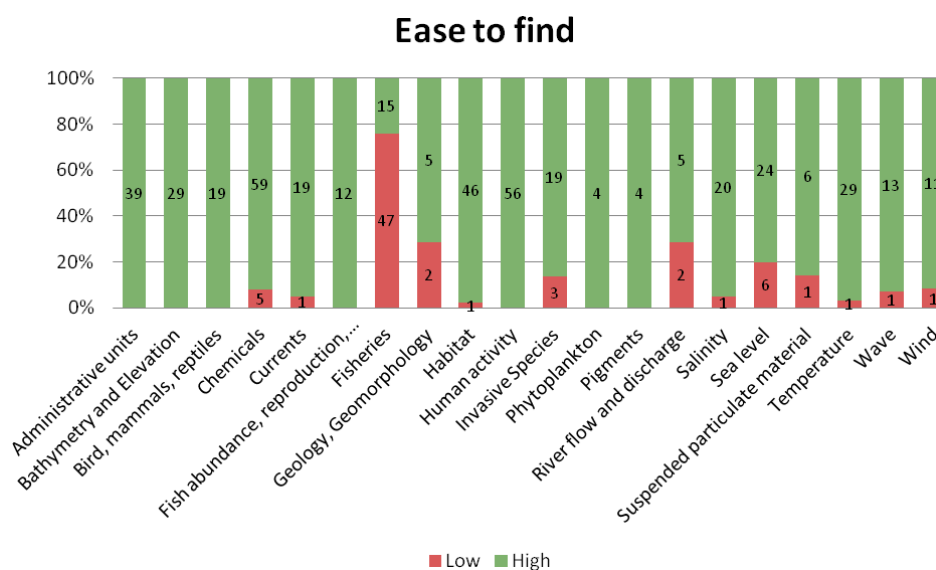


Fig. 3.5.1: Ease to find indicator

The outlook for Delivery mechanisms is not so good. Fisheries and Geology and geomorphology also suffer from low accessibility. Other types of data with little accessibility are River flow and discharge, Chemicals and Suspended particulate material. Administrative units and Human activity also score quite moderate, in line with what has already been reported above in the analysis per challenge.

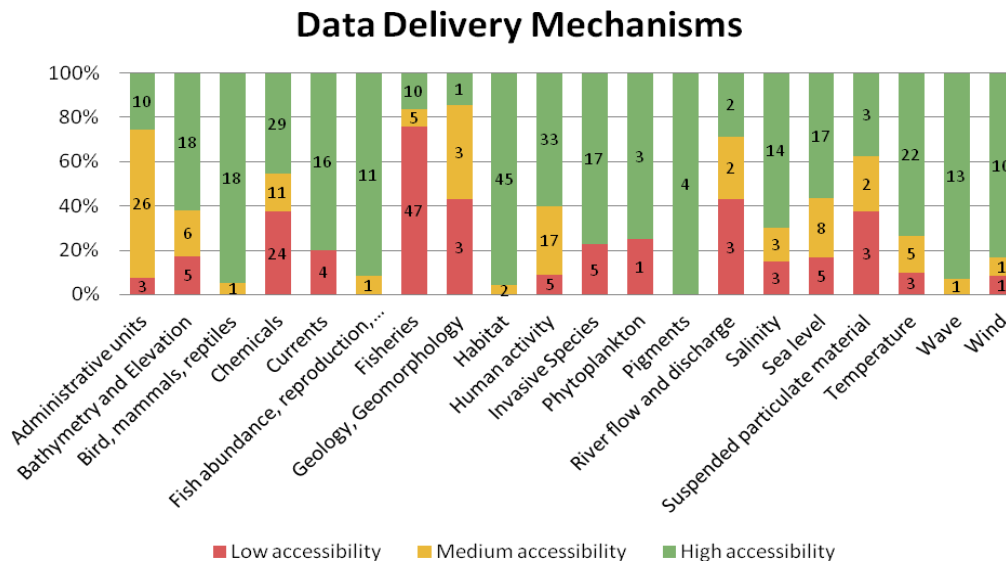


Fig. 3.5.2: Data delivery mechanisms indicator

Responsiveness and Readiness are best viewed next to each other because as they are closely linked with Delivery mechanisms they have quite similar features. These two indicators are not of prime relevance at this stage of the work and will be more thoroughly reviewed upon real use for products.

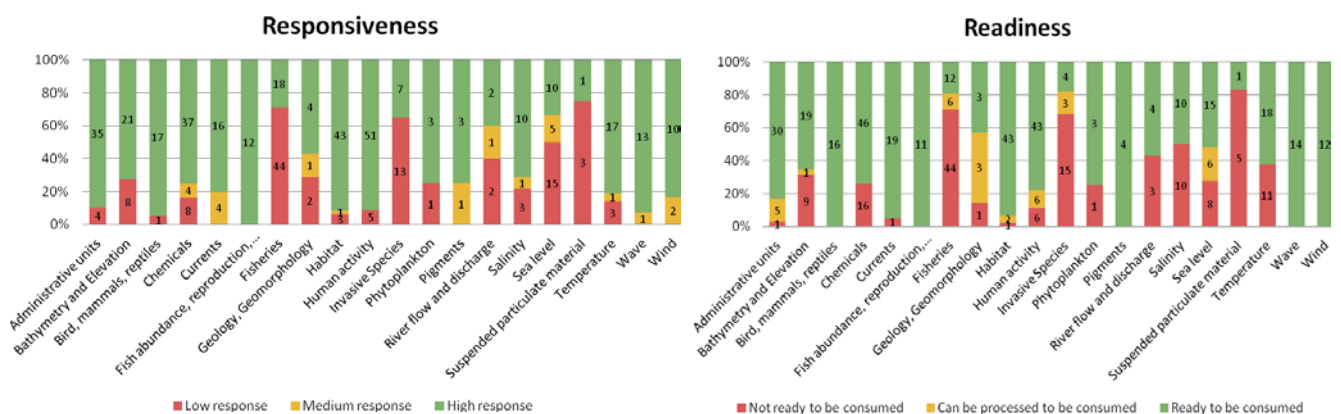


Fig. 3.5.3: Responsiveness and Readiness indicators

Likewise Data policy and Data policy visibility are positioned side by side for better presentation. We can refer to section 3.3.3 about reasons for visibility of data policy. For data policy these charts are very much in line with the previous ones with three notable exceptions: Fisheries already commented above in 3.4, Administrative units and Human activities featuring fully unrestricted data, temperature data only scoring as moderate data policy. Further investigation is needed for the latter because these data are usually closely associated to other oceanographic variables such as waves or currents - both showing quite good scores - in marine services such as Copernicus.

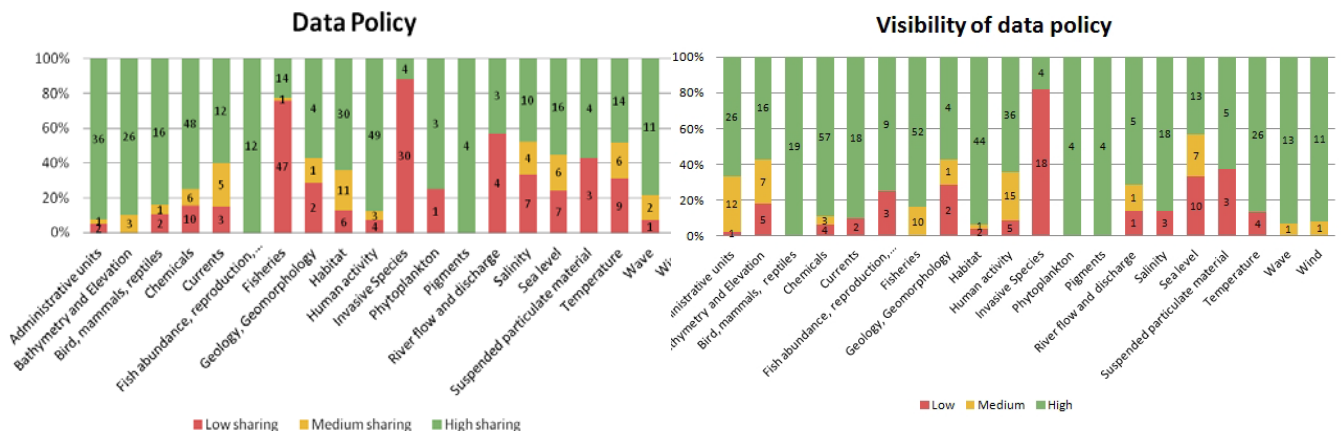


Fig. 3.5.4: Data policy and Visibility of data policy indicators

To get an overview at a glance of the above 6 bar charts Table 3.5 was built by using a majority rule of factor 2 between the numbers of red, orange or green scores. Orange and red scores were first compared and orange was kept only if having twice as many scores as red. In a second step green was compared to orange and processed likewise.

Unsurprisingly the major trends previously observed are confirmed. The advantage of this table is to show a consistent view of all groups of characteristics versus indicators and see where issues lie. Note that the factor 2 rule may give a slightly pessimistic view of the situation, which tends to increase red and orange scores. Nevertheless this shows an overall favourable landscape and gives a focus on areas needing improvements:

- For indicators: mostly Delivery mechanisms, to a lesser extent Data policy;
- For groups of characteristics: basically Fisheries, River flow and discharge, Sea level, Suspended particulate material and Invasive species show the weak points.

Table 3.5: Availability indicators summarized for 20 groups of characteristics

	Ease to find	Data Delivery Mechanisms	Responsiveness	Data Policy	Visibility of Data Policy	Readiness
Administrative units	Green	Orange	Green	Green	Green	Green
Bathymetry and Elevation	Green	Green	Green	Green	Green	Green
Bird, mammals, reptiles	Green	Green	Green	Green	Green	Green
Chemicals	Green	Red	Green	Green	Green	Green
Currents	Green	Green	Green	Green	Green	Green
Fish abundance, reproduction	Green	Green	Green	Green	Green	Green
Fisheries	Green	Red	Red	Red	Green	Red
Geology, Geomorphology	Green	Red	Green	Green	Green	Orange
Habitat	Green	Green	Green	Green	Green	Green
Human activity	Green	Orange	Green	Green	Green	Green
Invasive Species	Green	Green	Red	Red	Red	Red
Phytoplankton	Green	Green	Green	Green	Green	Green
Pigments	Green	Green	Green	Green	Green	Green
River flow and discharge	Green	Red	Red	Red	Green	Red
Salinity	Green	Green	Green	Green	Green	Green
Sea level	Green	Green	Red	Green	Red	Red
Suspended particulate material	Green	Red	Red	Red	Red	Red
Temperature	Green	Green	Green	Red	Green	Red
Wave	Green	Green	Green	Green	Green	Green
Wind	Green	Green	Green	Green	Green	Green

3.6 Assessment of EU Commission data sources

It was deemed important in this report to assess two main EU data sources, namely EMODnet - context of this work - as well as Copernicus whose CMEMS deals with a wealth of marine offshore data and is currently looking to expand into the coastal zone. The metadata base has been processed to produce statistics on data sets from these two sources. In the future, similar work could be extended to other major data sources.

3.6.1 EMODnet

So far 90 datasets out of the 552 collated by the 11 challenges were provided by EMODnet. Figure 3.6.1 illustrates that the green colour strongly predominates, which means that for a large majority of the datasets the availability is quite good. This is obvious for Ease to find because all lots portals provide a catalogue, and for Data delivery mechanisms because they also provide services for downloading, discovering and visualising the data. However there are few exceptions for the other three criteria shown by orange and red bars which we detail below.



Figure 3.6.1: Availability indicators for EMODnet data sources

It should be reminded that the data made available by the various EMODnet lots portals are of two kinds: (i) observations and (ii) data products, the latter usually derived from datasets assembly carried out by the lots. Data products have unrestricted access as well as visible data policy, however there may be inconsistencies in the way policies are displayed (visibility). Regarding observation data, their data policy and responsiveness are not in the hands of the EMODnet lots but in those of the data centres contributing to EMODnet. This is what mostly accounts for their moderate or low scores.

In table 6 below we give a detailed description of all the items not scoring green. Note that in several cases the dataset URL is not that of EMODnet (e.g. OSPAR or EEA) when EMODnet taps into other providers. In these cases the assessment concerns the data providers rather than EMODnet themselves.

- Data Policy (pink colour)

Three data sets from EEA and OSPAR being accessed through EMODnet Chemistry feature restrictions on use. Another 10 occurrences of data sets from EMODnet Physics are accessible under moratorium, hence scoring “medium sharing”. General comments about data policy and divergences in its interpretation can be found in section 3.3.3 above.

- Visibility of data policy (yellow colour)

Five datasets assessments originated from EMODnet Bathymetry scored medium Data policy visibility. This probably comes from observation data coming from individual providers through this portal. In this case the portal is not responsible for data policy not being clearly exposed, although it may be quite open (as shown by the green Data policy score). General comments about the visibility of data policy and the way it's handled by the portals can be found in section 3.3.4 above.

- Responsiveness (blue colour)

Three datasets have a low score: one of them is due to a response time longer than a week, the other two have a low score “No information on response time”, one of which being probably an artifact. It may also be that these datasets have not been downloaded by the challenges. An orange score (response time better than a week) appears for several assessments of EMODnet chemistry data sets.

Table 3.6: Summary of datasets not given a green code in figure 3.6.1

EDMERP	Data set URL	Availability issue	N° of citations
EMODnet - Chemistry	http://www.eea.europa.eu/data-and-maps/data/waterbase-rivers-10	Data policy otherRestrictions###Restricted	1
EMODnet - Chemistry	http://www.ospar.org/documents?v=7373	Data policy otherRestrictions###Restricted	1
EMODnet - Chemistry	http://www.ospar.org/work-areas/hasec/chemicals/rid	Data policy otherRestrictions###Restricted	1
EMODnet - Physics	http://www.emodnet-physics.eu/Map/	Datapolicy otherRestrictions###Accessible under moratorium	10
EMODnet - Bathymetry	http://portal.emodnet-bathymetry.eu/	Visibility on data policy There is information, but details are available only on request	3
EMODnet - Bathymetry	http://portal.emodnet-bathymetry.eu/	Visibility on data policy There is no information at all on data policy adopted by data providers	1
EMODnet - Chemistry	multiple	Responsiveness Less or equal to 1 week for release	1
EMODnet - Chemistry	http://www.ospar.org/documents?v=7373	Responsiveness Less or equal to 1 week for release	3
EMODNET - Physics	Multiple	Responsiveness Less or equal to 1 week for release	1

EMODnet - Chemistry	http://www.ospar.org/work-areas/hasec/chemicals/rid	Responsiveness Less or equal to 1 week for release	1
EMODNET Secretariat		Responsiveness No information is found on response time	1
EMODnet - Chemistry	Multiple	Responsiveness Less or equal to 1 week for release	1
EMODnet - Human Activities	http://www.emodnet-humanactivities.eu/search-results.php?dataname=Submerged+Prehistoric+Archaeology+and+Landscapes	Responsiveness No information is found on response time	1
EMODnet - Bathymetry	http://www.emodnet.eu/bathymetry	Responsiveness More than 1 week for release	1

3.6.2 Copernicus

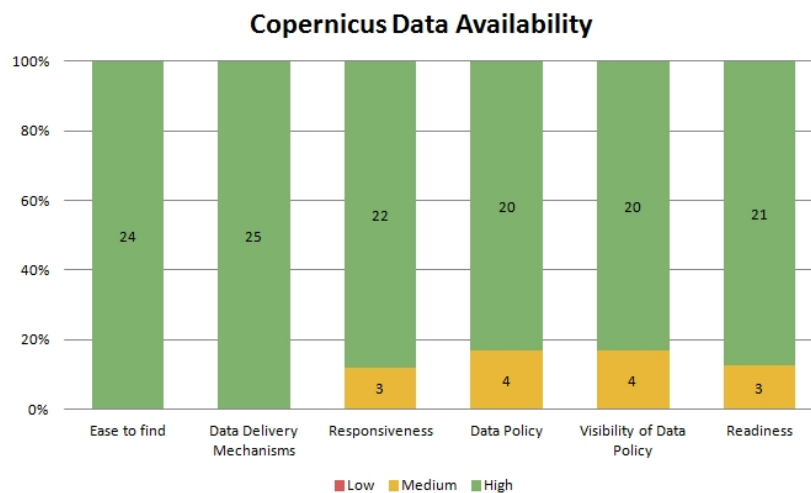


Figure 3.6.2: Availability indicators for Copernicus data sources

The 25 Copernicus data sources that have been collated so far within the framework of the checkpoint have an excellent proportion of green versus orange scores.

The data sources were all easy to find and their access could be done via discovery, viewing and downloading services.

Most of them had high response, except for three of them featuring access within "less or equal to one week", which is still quite acceptable to many users.

In terms of data policy, 4 items displayed "Accessible under moratorium". This usually means data sets are going to be released after they have been published, as is the rule in the academic area.

In terms of visibility on data policy, the same 4 items were reported as "There is information, but details are available only on request", which is only a matter of improvements to the portal.

Finally moderate readiness comes from "Format proprietary but content clearly specified", which is far from negative as long users are fully informed of format descriptions.

As a final note, it should be reminded that for this analysis to be fully comprehensive, a distinction should have been made between products and observation data: the latter may slightly limit the overall good scoring of Copernicus services.

4 Comparison of Atlantic, MedSea and Black Sea checkpoints

As a way to make sure our Checkpoint was properly steered and was not departing from other basins we took advantage of the common methods and tools to perform a comparison with the MedSea and Black Sea checkpoints. The results of this comparison were presented at IMDIS 2016 (International Conference on Marine Data and Information System, Gdansk, Oct. 2016).

The overall results for the main four criteria (Fig. 4) are: (i) both “Ease to find” categories “search engines” and “referenced catalogues” jointly scored green, reaching over 80%, (ii) “Delivery mechanisms” was given the green score when online downloading was offered and reached 75%, (iii) the Data policy “unrestricted” category should be taken with caution as it contains some “restricted” data, i.e the ones restricted to academia or research with no commercial use allowed. Responsiveness is to some extent correlated to Data policy: in cases where data policy is restricted, clearly then responsiveness suffers from higher response times.

The results per basin do not significantly depart from the overall ones. We only show two of them. Note that in the left bottom part of figure 4, the light blue and purple sectors together equate to green in the upper figure. In the bottom right figure light blue, purple and green sectors together equate to green in the upper figure. The two criteria Ease to find and Delivery mechanisms both appear with scores in the range of 75 to 80%.

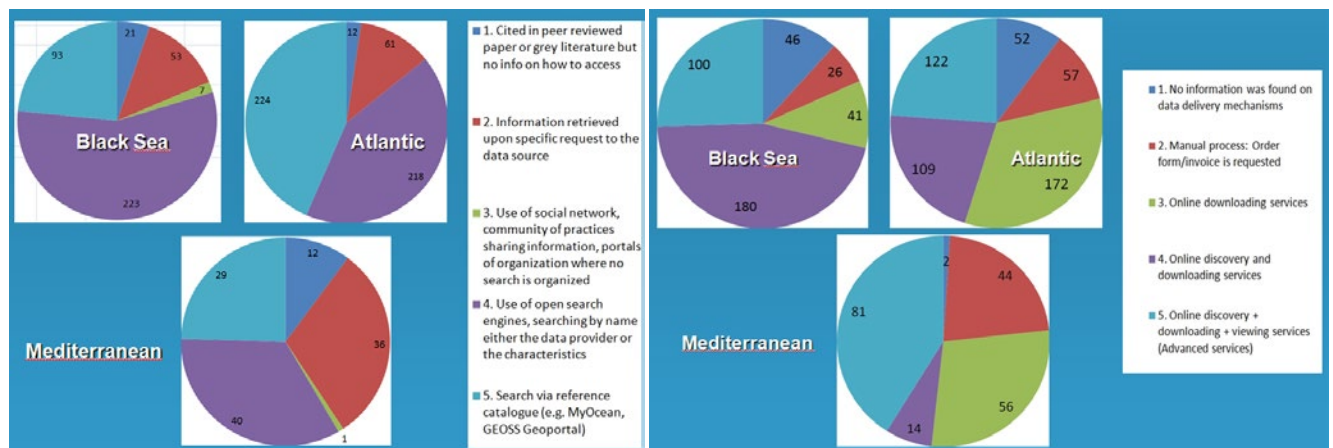
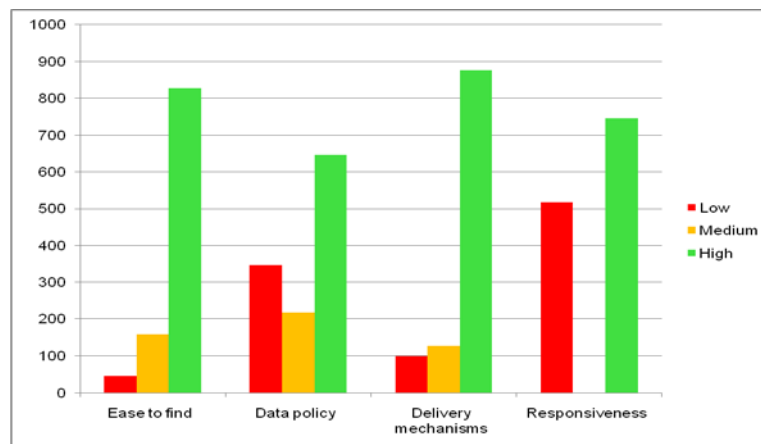


Fig 4: Combined results for Atlantic, Mediterranean and Black Sea (4 indicators, top). “Ease to find” and “Delivery mechanisms” per basin (bottom)

Some of the the conclusions from this study were that:

- The overall availability was quite good but uncertainty still needs to be reduced by additional validation and subsequent metadata base update;
- Challenges would be better run by double expertise (thematic and data management);
- Cultural and vocabulary issues (e.g. moratorium, discovery, etc) and also the lack of thesaurus (e.g. data policy wording) were a brake on homogeneous assessments;
- Although sometimes “Easy to find” may not score high, a catalogue is often available but is not very visible, a visibility which can be increased by web site optimization;
- High score of “Unrestricted “ data policy results from the misleading “Illusion of successful download”;
- Portals are quite many and their ergonomoy is quite variable (e.g. in EMODnet), which may lead to users being confused.

The advantages of the common methodology adopted for these three checkpoints were acknowledged:

- The strong point is that the assessment is made by users (i.e. challenge makers) themselves through metadata capture;
- The assessment is systematic, measurable and repeatable and it can be used by several checkpoints, enabling fast and comparable inter-basin analyses over time.
- The indicators and statistics provided point out weaknesses in the datasets. The metadatabase and associated services within the portal are designed to route providers to areas of concern and to allow verification and improvement.

5 Conclusion

This first DAR still suffers from a few shortcomings, which was predictable with such innovative work.

Firstly the value of this painstaking metadata edition exercise may not have been fully grasped by everyone in the project, resulting in sometimes approximate metadata. The methodology needs some more calibration and another iteration, so this issue is going to lessen as the benefits of this approach appear. Secondly vocabularies issues are still quite strong and it may have been difficult for the editors in some cases to select the right category among those offered for the availability indicators, leading to some mixing up. Overall this may have resulted in a more pessimistic view than is really the case.

However uncertainty also results from the lack of ergonomics of some data repositories which sometimes deter people from searching them, with an impact on our figures.

Additionally there may have been confusion between Data policy and Data policy visibility because the former is worded in a number of different ways. Likewise, restrictions such as use limited to science or academia are often unclear, resulting in mixed up choices.

We do expect that constructive comments from the panel meeting followed by a debriefing about the value of this metadata base and its potential impact will help us make the necessary adjustments.

Improvements are also expected in the next phase when it comes to making products. Challenge leaders, upon downloading their data sets as inputs to their products will be requested to quickly check again their availability indicators. Their consideration will be somewhat different because there is clearly an interdependence between data appropriateness: in particular the "Extent" indicator has an immediate link with availability and spatial resolution is determinant for data policy. Utmost care will be given to the selection of appropriateness indicators categories. No doubt this second iteration will then provide highly reliable figures that will be reviewed again in the second DAR and the subsequent second panel meeting.

As a final note we strongly believe that this metadata base, by the time it is comprehensive, will remain a unique and extremely valuable set of information as a basis for future work on Atlantic marine data. Moreover, this methodology and tools being used by another two checkpoints set the scene for a possible broader use across Europe.

Appendix 1: The metadata base structure

Characteristics	Environmental matrix	
	Group of Category of characteristics (P03)	
	Category of characteristics (P02)	
	Characteristic name (P01)	
	Characteristic name	
	INSPIRE themes	
	Processing level of characteristics	
	Production mode	
Data sources	Program name/project name	Program title
		Program acronym
		Program/project web site URL
		Identifier (automatically given if program registered in EDMERP)
	Data provider	Organisation name
		Data provider website
		Identifier (automatically given if organisation registered in EDMO)
	Data originator (EDMO)	Organisation name
		Data provider website
		Identifier (automatically given if organisation registered in EDMO)
	Hierarchy data level	
	Catalogue name from provider	
	Catalog URL	
	Data collection name or data set name given by the provider	
	Data collection name or data set name	
	Dataset identifier in the catalog	
Dataset URL		
Overview	Purpose of characteristics production	
	Production and quality assessment specifications reference	
	Used by challenges	
	Intended use description: objective, process description, output data	
Spatial coverage	Geographical extent	
	Spatial resolution (Distance)	
	Min depth (meters)	
	Max depth (meters)	

	Vertical resolution (meters)		
	Vertical observation levels (meters > 0 above sea level)		
Time coverage	Temporal extent		
	Time resolution		
	Maintenance and update frequency		
Availability	Visibility of dataset		Easily found
	Accessibility of dataset		EU catalogue service
			Visibility of data policy
			Data delivery mechanisms
			Data policy
			Pricing
		Readiness	
Performance of dataset	Data formats and conventions		
Metadata Information	Title	Responsiveness	
	Contact for the metadata	Organisation name	
		Email	
		Phone	
	Challenge		
	Date		
Publication status			
Quality measures	Responsiveness		
	Horizontal Spatial Coverage		
	Vertical Spatial Coverage		
	Temporal Coverage		
	Number of Characteristics		
	Horizontal resolution		
	Vertical resolution		
	Vertical resolution (Descriptive result)		
	Temporal resolution		
	Thematic accuracy		
	Thematic accuracy (Descriptive result)		
Temporal validity			

Appendix 2: Quality check guidelines



GROWTH AND INNOVATION IN OCEAN ECONOMY GAPS AND PRIORITIES IN SEA BASIN

OBSERVATION AND DATA

QC of AVAILABILITY METADATA

EMODNET Atlantic CheckPoint

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Glossary

CH: Challenge

DAR: Data Adequacy Report

DPS: Data Product Specification

TDP : Targeted Data Product

EC: European Commission

EMODnet: European Marine Observation and Data Network

EU: European Union

INSPIRE: Infrastructure for Spatial Information in the European Community

ISO: International Organization for Standardization

LS : Literature Survey

P01: BODC Parameter Usage Vocabulary

P02: SeaDataNet Parameter Discovery Vocabulary

P03: SeaDataNet Agreed Parameter Groups

Executive Summary

This is an internal document presenting the Quality Checks of 'availability' metadata input data sets. It is an intermediate step completing the assessment of 'adequacy' of monitoring systems in support of the targeted applications, or 'Challenges', defined in the tender.

Checkpoint assessment of input data sources in terms of availability

The initial effort of the Atlantic CheckPoint was the identification and the collection of information related to input data sets and sources required by the Challenges. This is a preliminary step to answer the question raised by the call:

"Each challenge should deliver a web page with the following information..." which include :...

(4) A list of the data sources used and data providers. This should include primary data producers as well as intermediaries (e.g. Copernicus, EMODnet)

(5) An analysis of the usefulness of each data source in terms of location, price, attributers, delivery and usability

... »

At this stage of development of the project, this information will be the basis, together with the LS, of the first DAR.

"The "data adequacy report" should be a report providing a view of the monitoring effort in the sea basins; the first after 13 months, then after 33 months. So two will be delivered during the course of this contract. The reports will take into account the literature survey, the outcome of the challenges and any new information to report on the adequacy of marine data in each sea basin. They will be divided into two parts. The first part looks at the needs of users - fisheries managers, coastal protection authorities, national authorities responsible for marine Strategy Framework Directive, ports, shipping, offshore energy exploration, pipeline laying etc. The second looks parameter by parameter – temperature, bathymetry, sea-level rise etc."

Except for the Oil leak bulletin, no other products have been produced by the challenges allowing an evaluation of appropriateness of data to their purposes. However, availability information can already be used to establish availability indicators for the production of DAR1.

Availability indicators

The list of availability indicators providing indications on the quality of services of the data sources:

- ✓ Visibility of dataset
 - Ease to find
 - EU catalogue service
- ✓ Accessibility of dataset
 - Visibility of data policy
 - Data delivery mechanisms
 - Data policy
 - Pricing

- Readiness
 - Degree to which a format is exploitable
 - Formats and convention
- ✓ Performance
 - Responsiveness

Quality checks of metadata on availability

The reliability of DAR 1 depends on the collation of availability metadata. 2 sets of quality checks have to be applied:

- the availability of the information which had to be collected by the Challenges
- the accuracy of the information.

The first sets will be applied systematically.

The second one, which requires to test the content collated by the challenges, is time consuming.

Priority is given to:

- **Characteristics**

- to the main characteristics identified by LS (Table below)
P02 which are identified as priorities are indicated in bold characters

Environm.matrix	Group of category of characteristic (P03)	Category of characteristic (P02)	CH01	CH02	CH03	CH04	CH05	CH06	CH07	CH08	CH09	CH10	CH11	
Air	Meteorology	Air temperature		1										
		Wind strength and direction	1	1										
Biota/ Biology	Biota abundance, biomass and diversity	Invasive species monitoring parameters		1									1	
		Shellfish abundance and biomass in water bodies							1					
	Birds, mammals and reptiles	Bird behaviour		1										
		Bird counts	1	1										
		Bird reproduction	1	1										
		Bird taxonomy-related abundance per unit area of surface		1										
		Cetacean abundance		1										
		Cetacean behaviour		1										
		Cetacean reproduction		1										
		Seal abundance		1										
		Seal behaviour		1										
		Seal reproduction		1										
		Reptile abundance		1										
	Reptile reproduction		1											
	Fish	Fish abundance in water bodies										1		
		Fish taxonomy-related abundance per unit area of the bed		1										
		Fish reproduction		1										
		Fish behaviour		1										
	Phytoplankton and microphytobenthos	Phytoplankton generic abundance in water bodies		1		1								
		Phytoplankton taxonomic abundance in water bodies				1								
		Primary production in the water column		1										
	Macroalgae and	Benthic primary production		1										
	Pigments	Chlorophyll pigment concentrations in water bodies		1						1	1			
Habitat	Habitat characterisation		1	1										
	Habitat extent		1	1					1					
Ice	Cryosphere	Snow and ice mass, thickness and extent				1								
Human activities	Anthropogenic contamination	Pollution events		1										
		Industrial discharges		1										
	Construction and structures	Hazards to navigation	1	1										
		Industrial activity		1										
		Man-made structures		1										
		Transport activity		1										
	Fisheries	Administrative units	1	1										
		Fish and shellfish catch statistics		1	1				1					
		Fishing by-catch		1					1					
		Fishery characterisation		1	1									
		Fishing effort								1				
	Human activities	Administrative units	1	1	1								1	
		Industrial activity	1	1	1									
		Litter abundance and type		1										
		Marine archaeology		1										
		Marine environment leisure usage		1	1									
		Transport activity	1	1	1								1	
	Administration and dimension	Reference numbers											1	
		Date and time											1	

INT-GEBCO (General Bathymetric Chart of the Oceans)	ATL-CH01 - Wind Farm ATL-CH03 - Oil leak ATL-CH05 - Coasts ATL-CH07 - Fish Impact ATL-CH10 - Bathymetry	Riverbed/SeaBed	T001/Terrestrial
INT-1869/FAO (AQUASTAT Programme, Vulnerable Marine Ecosystems, FAO Geonetwork, FAO Global Statistical Collections)	ATL-CH01 - Wind Farm ATL - CH03 - Oil leak ATL-CH09 - River inputs ATL-CH06 - Fish mngt ATL-CH07 - Fish Impact	Fresh water Human activities	G015/Suspended particulate material B050/Habitat H004/Fisheries
EU-DG MARE (EMODnet Seabed Mapping (Habitats))	ATL-CH01 - Wind Farm ATL-CH02 - MPA ATL-CH03 - Oil leak ATL-ATL-CH07 - Fish Impact	Marine water Riverbed/SeaBed Biota/Biology	D020/Other physical oceanographic measurements G045/Rock and sediment lithology and mineralogy B050/Habitat
EU-EC DG MARE (EMODNet Bathymetry)	ATL-CH01 - Wind Farm ATL-CH02 - MPA ATL-CH03 - Oil leak ATL-CH05 - Coasts ATL-CH07 - Fish Impact ATL-CH10 - Bathymetry	Riverbed/SeaBed	T001/Terrestrial
EU-EC DG MARE (EMODNET Physics)	ATL-CH01 - Wind Farm ATL-CH04 - Climate ATL-CH05 - Coasts ATL-CH08 - Eutrophication ATL-CH09 - River inputs ATL-CH10 - Bathymetry	Marine water Fresh water	D025/Water column temperature and salinity D032/Sea level
EU-Copernicus Marine Environment Monitoring Service	ATL-CH03 - Oil leak ATL-CH04 - Climate ATL-CH05 - Coasts ATL-CH08 - Eutrophication ATL-CH09 - River inputs ATL-CH10 - Bathymetry	Marine water Biota/Biology Fresh water Ice	D030/Currents D025/Water column temperature and salinity D020/Other physical oceanographic measurements D032/Sea level C015/Dissolved gases B035/Pigments M015/Cryosphere
EU DG Environment / EEA (Natura 2000, WISE , MSFD)	ARL-CH02 - MPA ATL-CH09 - River inputs ATL-CH11 - Alien species	Riverbed/SeaBed Human activities Fresh water Biota/Biology	T001/Terrestrial H005/Human activities D025/Water column temperature and salinity O005/Fluxes C005/Carbon, nitrogen and phosphorus B070/Biota abundance, biomass and diversity

OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic (RID, ODIMS, MPA)	ATL-CH01 - Wind Farm ATL-CH03 - Oil leak ATL-CH07 - Fish Impact ATL-CH08 - Eutrophication ATL-CH09 - River inputs	Riverbed/SeaBed Biota/Biology Human activities Fresh water	G015/Suspended particulate material B050/Habitat Z005/Administration and dimensions H005/Human activities C005/Carbon, nitrogen and phosphorus O005/Fluxes
BE-422/VLIZ (SCUFN, GEBCO, LME, MEOW, WORMS, MARBEF, MARBOUND, Marine Regions.org World Heritage Marine Sites)	ATL-CH01 - Wind Farm ATL-CH02 - MPA ATL - CH03 - Oil leak ATL-CH11 - Alien species	Riverbed/SeaBed Biota/Biology Human activities	T001/Terrestrial B050/Habitat B070/Biota abundance, biomass and diversity Z005/Administration and dimensions H005/Human activities
UK MOHC (Met Office Hadley Centre observations datasets)	ATL-CH04 - Climate ATL-CH08 - Eutrophication ATL-CH09 - River inputs	Marine water Fresh water Ice	O005/Fluxes D025/Water column temperature and salinity M015/Cryosphere
US-1433/NOAA (Tides and currents)	ATL-CH01 - Wind Farm ATL-CH02 - MPA ATL-CH03 - Oil leak ATL-CH05 - Coasts ATL-CH10 - Bathymetry	Air Marine water Riverbed/SeaBed	M010/Meteorology D030/Currents D032/Sea level T001/Terrestrial

- **Availability indicators**

There are 9 availability criteria: 4 will be checked in priority

- **Visibility of dataset**

✓ *Ease to find: priority 1*

Ease to find				
Edited value	How to check value	Expected result	Result NA, Correct = 1, Uncorrect = 0 Verification not applicable = NA	Comment
Cited in peer reviewed paper or grey literature but no info on how to access	Use of open search engine, searching by name either the data provider or the characteristics	No hit	1	

Information retrieved on specific request to the data source	Check that data source does not provide other way to request data	No visible alternative	1	
Search via reference catalogue	Check that URL of the catalogue is recorded and test the link			
Use of open search engine, searching by name either the data provider or the characteristics	<p>Test searching using :</p> <ul style="list-style-type: none"> • data provider name (this may require at least 2 trials as the name can be written either by the acronym or its expanded name). A additional test may be required using the country name where the data provider is located. • the characteristic category (P02) or/and the characteristic name the most representative of data expected to be distributed by the data source. The term “data” should be used in addition to focus searching on data sources. • To focus search : the terms “Atlantic” “Global”, Europe, USA, Canada” can be added 	One hit in the first 2 pages	1	
Use of social network, communities of practices sharing information, portals of organisations where no search is organize	Expert knowledge only : if any doubt, contact the metadata provider	Expert approves	1	

➤ **Accessibility of dataset**

✓ **Data delivery mechanisms: priority 2**

Data delivery mechanisms				
Edited value	How to check value	Expected result	Result NA, Correct = 1, Uncorrect = 0 Verification not applicable = NA	Comment
No information was found on data delivery mechanisms	Check it on the Web of the data source if available ?	No information	1	
Manual process: Order form/invoice is requested	Check it on the Web of the data source if available ?	No information		
Online downloading services	Check the URL of the catalogue or of the dataset (should be indicated if downloading is mentioned)	Test the URL	1 If the URL is absent, result = 0	Downloading service definition : "download services, enabling copies of spatial data sets, or parts of such sets, to be downloaded and, where practicable, accessed directly" metadata [INSPIRE Directive]
Online discovery and downloading services	Here we consider the function, not how they have been coded. A discovery service , (whatever the discovery is OGC compliant or not : see comments) and a downloading service should be available. Examples of data sources of data	Test the URL of the catalogue. Case 1 : data collection. If catalogue URL is missing > value = 0; Inventory only		Discovery services definition: "making it possible to search for spatial data sets and services on the basis of the content of the corresponding metadata and to display the content of the metadata [INSPIRE Directive]" Metadata definition : "information describing spatial data sets and spatial data services and

	<p>collections : Copernicus (http://marine.copernicus.eu/services-portfolio/access-to-products/), Seadatanet (http://www.seadatanet.org/Data-Access/Common-Data-Index-CDI) Example of a single dataset : GEBCO grid (http://www.gebco.net/data_and_products/gridded_bathymetry_data/)</p>	<p>without expected metadata (either in free text or ISO 19115 metadata) > value = 0 Otherwise > value = 1</p> <p>Case 2 : single data set or very small data set collection (10 ?) URL dataset missing > , value = 0 Mandatory metadata missing > value = 0 ; Otherwise value = 1</p>	<p>making it possible to discover, inventory and use them [INSPIRE Directive]"</p> <p>Recommendation : The presence of a discovery service is obvious in the case of a data collection because this implies the existence of a catalogue (eg the CDI of SeaDataNet). For limited data collection or a unique dataset, there is a discovery service as far as there is a text on the web page providing the mandatory information expected from a discovery service (in red) with enough metadata to search the appropriate data. (cf Core metadata ISO19115_2003).</p>
<p>Online discovery + downloading + viewing services (Advanced services)</p>			<p>Here "advanced services" include the Discovery, Viewing and Downloading and any additional services such as transformation services.</p> <p>Viewing services definition : "view services making it possible, as a minimum, to display, navigate, zoom in/out, pan, or overlay viewable spatial data sets and to display legend information and any relevant content of metadata" [INSPIRE Directive];</p> <p>Transformation services definition : enabling spatial data sets to be transformed with a view to achieving interoperability" [INSPIRE Directive]</p>

Core metadata for geographic datasets (ISO19115_2003)

Dataset title (M)

(MD_Metadata >
MD_DataIdentification.citation >
CI_Citation.title)

Spatial representation type (O)

(MD_Metadata >
MD_DataIdentification.spatialRepresentationType)

Dataset reference date (M)

(MD_Metadata >
MD_DataIdentification.citation >
CI_Citation.date)

Reference system (O)

(MD_Metadata >
MD_ReferenceSystem)

Dataset responsible party (O)

(MD_Metadata >
MD_DataIdentification.pointOfContact >
CI_ResponsibleParty)

Lineage (O)

(MD_Metadata >
DQ_DataQuality.lineage > LI_Lineage)

Geographic location of the dataset (by four

coordinates or by geographic identifier) (C)

(MD_Metadata >
MD_DataIdentification.extent >
EX_Extent
> EX_GeographicExtent >
EX_GeographicBoundingBox or
EX_GeographicDescription)

On-line resource (O)

(MD_Metadata > MD_Distribution >
MD_DigitalTransferOption.onLine >
CI_OnlineResource)

Dataset language (M)

(MD_Metadata >
MD_DataIdentification.language)

Metadata file identifier (O)

(MD_Metadata.fileIdentifier)

Dataset character set (C)

(MD_Metadata >
MD_DataIdentification.characterSet)

Metadata standard name (O)

(MD_Metadata.metadataStandardName)

Dataset topic category (M)

(MD_Metadata >
MD_DataIdentification.topicCategory)

Metadata standard version (O)

(MD_Metadata.metadataStandardVersion)

Spatial resolution of the dataset (O)

(MD_Metadata >
MD_DataIdentification.spatialResolution >
MD_Resolution.equivalentScale or
MD_Resolution.distance)

Metadata language (C)

(MD_Metadata.language)

Abstract describing the dataset (M)

(MD_Metadata > MD_DataIdentification.abstract)

Metadata character set (C)

(MD_Metadata.characterSet)

Distribution format (O)

(MD_Metadata > MD_Distribution >
MD_Format.name and
MD_Format.version)

Metadata point of contact (M)

(MD_Metadata.contact > CI_ResponsibleParty)

Additional extent information for the dataset

(vertical and temporal) (O)

(MD_Metadata > MD_DataIdentification.extent >
EX_Extent
> EX_TemporalExtent or EX_VerticalExtent)

Metadata date stamp (M)

(MD_Metadata.dateStamp)

✓ *Data policy: priority 4*

Data policy				
Edited value	How to check value	Expected result	Result NA, Correct = 1, Uncorrect = 0 Verification not applicable = NA	Comment
Not or not well documented	Go to the data provider site	No info	1	
Restricted	Go to the data provider site	Confirmed	1	
Under moratorium	Go to the data provider site	Confirmed	1	
Unrestricted	Download data	Data downloaded without restriction	1	

➤ Performance

✓ *Responsiveness: priority 3*

Responsiveness				
Edited value	How to check value	Expected result	Result NA, Correct = 1, Uncorrect = 0 Verification not applicable = NA	Comment
No information on response time	Check web site of provider	No info	1	
More than 1 week for release	Search and check Service Level Agreement (SLA) or equivalent on provider site	Confirmed	1	
Less or equal one week for release	Agreement (SLA) or equivalent on provider site	Confirmed	1	
On-line downloading for release in less or equal than a few hours	Agreement (SLA) or equivalent on provider site or test	Confirmed or tested positively	1	

Organisation of QC

- 1) The review should be carried out by the same person for a given characteristic for content consistency. The table below contains the names of the responsible of the quality checks for the different PO2 categories :

EM : E. Moussat

JP : Jacques Populus

EQ : Erwann Quimbert

MV : Mickael Vasquez

LS : Laurent Soudarin (CLS)

- 2) Priorities will be carried out starting with EU data sources, international ones and all others.

Matrix	PO2	Matrix	PO2
Air	Wind stress	Fresh/Marine waters	Nitrate concentration
Biota/Biology	Invasive species	Fresh/Marine waters (physics)	Nitrite concentration
	Chlorophyll pigment concentrations		Phosphate concentration
	Habitat extent		Dissolved oxygen parameters
	Birds counts		(Currents) Horizontal velocity
	Cetacean behaviour		Sea Level
Ice	Snow and Ice Mass Thickness extent		Salinity
Human activities	Fish and shell fish catch statistics		Temperature
	Administrative units	Riverbed/seabed	Lithology
	Industrial activity		Bathymetry
	Transport activity		Terrestrial (coastline)
	Reference numbers (VMES data)		

Appendix 3: Groups of P02 used for the assessment per characteristic

Group of P02s	P02s
Wave	Wave height estimates Wave height and period statistics Wave height estimates Wave direction
Salinity	Salinity of the water column
Administrative units	Administrative units
Chemicals	Phosphate concentration parameters in the water column Nitrate concentration parameters in the water column Alkalinity, acidity and pH of the water column Dissolved inorganic nitrogen concentration in the water column Particulate total and organic nitrogen concentrations in the water column Ammonium and ammonia concentration parameters in water bodies Dissolved oxygen parameters in the water column Dissolved total or organic phosphorus concentration in the water column Nitrite concentration parameters in the water column Ammonium concentration parameters in the water column Dissolved total and organic nitrogen concentrations in the water column Density of the water column
Invasive Species	Invasive species monitoring parameters
Bird, mammals, reptiles	Bird reproduction Reptile reproduction Seal abundance Bird taxonomy-related abundance per unit area of surface Bird counts Reptile abundance Cetacean abundance Seal reproduction
Temperature	Temperature of the water column Air temperature Skin temperature of the water column
Fisheries	Fishing by-catch Fish and shellfish catch statistics Fishery characterisation
Sea level	Sedimentation flux quantification in the water column Sea level
Currents	Horizontal velocity of the water column (currents) Vertical velocity of the water column (currents)
Human activity	Hazards to navigation Man-made structures Industrial activity Transport activity Marine environment leisure usage Marine archaeology
Suspended particulate material	Suspended particulate material

Habitat	Habitat extent Habitat characterisation
Geology, Geomorphology	Lithology Coastal geomorphology
Pigments	Chlorophyll pigment concentrations in the water column Chlorophyll pigment concentrations in water bodies
Fish abundance, reproduction, behaviour	Fish abundance in water bodies Fish reproduction Fish taxonomy-related abundance per unit area of the bed
Wind	Wind strength and direction Wind speed and direction
Bathymetry and Elevation	Bathymetry and Elevation
Phytoplankton	Phytoplankton generic abundance in water bodies Phytoplankton taxonomic abundance in water bodies
River flow and discharge	River flow and discharge

Appendix 4: The Atlantic metadata base (simplified)

The dataset title is a concatenation of:

- P02 (Category of characteristics)
- P01 (Characteristic)
- EDMO identifier

Title	Challenge	Catalogue URL	Easily found	Data delivery mechanisms	Data Policy
Wave height estimates rms of bottom amplitude displacement by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Moving on the seabed	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Administrative units FAO fisheries marine areas FAO / FAO - Food and Agriculture Organization of the United Nations FAO fisheries statistical marine areas	Atlantic - CH01 - Windfarm Siting	http://www.fao.org/geonetwork/srv/en/main.home?uuid=ac02a460-da52-11dc-9d70-0017f293bd28	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wave height and period statistics Wave peak period by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS La période des vagues dominantes in the North east Atlantic	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat extent spatial distribution of Biological Zones European Commission Biological Zones - Atlantic area	Atlantic - CH01 - Windfarm Siting	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Information retrieved upon specific request to the data source	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wave height estimates Significant height of primary swell by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Significant height of primary swell	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wave height and period statistics Significant height of waves {Hs} on the water body PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Significant wave height in the North Atlantic	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Industrial activity Offshore Wind-farms Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Offshore Wind-farms	Atlantic - CH01 - Windfarm Siting	http://www.ospar.org/data	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Habitat characterisation EUNIS habitat broad map from surveys EMODNet Seabed Mapping EMODnetSBH_BroadScale_SurveyMaps_EUNIS_v20150827	Atlantic - CH01 - Windfarm Siting	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Industrial activity Submarine telecommunication cables SIGCables Information about 15 submarine telecommunication cables in the Atlantic.	Atlantic - CH01 - Windfarm Siting	http://www.sigcables.com/index.php/cableliste/liste_complexe/SGC_NOM/ASC/38	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Habitat extent OSPAR Distribution and extent of threatened and/or declining habitats Convention for the Protection of the Marine Environment of the North-East Atlantic OSPAR threatened and/or declining habitats 2014	Atlantic - CH01 - Windfarm Siting	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

Horizontal velocity of the water column (currents) rms of bottom velocity amplitudes by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Moving speed on the seabed	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wave direction Significant wave height and direction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Significant wave height and direction	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Vertical velocity of the water column (currents) current speed averaged over the water column PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Direction and Intensity of average currents over vertical	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/Courants	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wind strength and direction Wind speed (10m) in the atmosphere by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Vent_Carte-2D_Manche-Golfe-de-Gascogne_YearMonthDay-0800_YearMonthDay-0500	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/en/forecasts/winds	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Habitat characterisation Predicted broad-scale EUNIS habitats EMODNet Seabed Mapping Predicted broad-scale EUNIS habitats - Atlantic area	Atlantic - CH01 - Windfarm Siting	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation Fine scale habitat maps European Commission EUNIS habitat maps from surveys - Fine scale	Atlantic - CH01 - Windfarm Siting	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Industrial activity Inventory of Offshore Installations Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Inventory of Offshore Installations	Atlantic - CH01 - Windfarm Siting	http://www.ospar.org/data	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) rms of bottom velocity amplitudes by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Moving speed on the seabed	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Information retrieved upon specific request to the data source	Online discovery and downloading services	otherRestrictions## #Unrestricted
Habitat characterisation Medium scale habitat maps European Commission EUNIS habitat maps from surveys - Medium scale	Atlantic - CH01 - Windfarm Siting	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wave direction Mean wave direction by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS La direction des vagues dominantes North East Atlantic	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wave height estimates rms of bottom amplitude displacement by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Moving on the seabed in the North Atlantic	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wind strength and direction Wind speed (10m) in the atmosphere by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Vent_Carte-2D_Zone-arpege_YearMonthDay-0800_YearMonthDay-0500	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/en/forecasts/winds	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wave height and period statistics Significant height of primary swell by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Significant height of	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted

primary swell in the North Atlantic					
Skin temperature of the water column Sea Surface Temperature PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Sea Surface Temperature in the Channel-Bay of Biscay (10m)	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/en/forecasts/temperature_and_salinity	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wave height and period statistics Average height of waves (highest one third) on the water body ABP Marine Environmental Research Ltd Atlas of UK marine renewable energy resources-waves	Atlantic - CH01 - Windfarm Siting	http://www.renewables-atlas.info/	Information retrieved upon specific request to the data source	Online downloading services	otherRestrictions## #Restricted
Habitat extent Essential Fish habitat extent South Atlantic Fishery Management Council EFH for the SAFMC jurisdictional area	Atlantic - CH01 - Windfarm Siting	http://www.safmc.net/ecosystem-management/mapping-and-gis-data	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wind strength and direction Wind speed (gust) in the atmosphere Puertos del Estado Historical total or annual data Mean wind speed (m/s) (1958-2016) at sea surface in stations network and model points	Atlantic - CH01 - Windfarm Siting	http://www.puertos.es/en-us/oceanografia/Pages/portus.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Unspecified Kinetic Energy due to waves and currents European Commission Energy due to waves and currents - North Sea and Celtic Sea	Atlantic - CH01 - Windfarm Siting	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Bird reproduction Seabird Nesting Counts Joint Nature Conservation Committee - Marine Conservation Branch, Peterborough Seabird Nesting Counts (British Isles)	Atlantic - CH01 - Windfarm Siting	http://magic.defra.gov.uk/Dataset_Download_Summary.htm	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Bird counts Seabird distribution and abundance data Ocean Biogeographic Information System (OBIS) JNCC seabird distribution and abundance data (all trips) from ESAS database	Atlantic - CH01 - Windfarm Siting	http://seamap.env.duke.edu/datasets/detail/427	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wave height and period statistics Wave peak period by model prediction (1/peak frequency) PREVIMER - COASTAL OBSERVATIONS AND FORECASTS La période des vagues dominantes in the North Atlantic	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wave height and period statistics Significant height of waves {Hs} on the water body Puertos del Estado Historical data on Waves-significant height(m) (1958-2012) at stations (measurement network) and model points	Atlantic - CH01 - Windfarm Siting	http://www.puertos.es/en-us/oceanografia/Pages/portus.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wave direction Mean waves direction by model prediction PREVIMER - COASTAL OBSERVATIONS AND FORECASTS La période et direction des vagues dominantes	Atlantic - CH01 - Windfarm Siting	http://www.previmer.org/previsions/vagues	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Horizontal spatial co-ordinates ICES ecoregions International Council for the Exploration of the Sea (ICES) ices_ecoregions	Atlantic - CH01 - Windfarm Siting	http://geo.ices.dk/	Information retrieved upon specific request to the data source	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Horizontal spatial co-ordinates territorial sea limits IHPT, Hydrographic Institute International Territorial sea	Atlantic - CH01 - Windfarm Siting	http://www.hidrografico.pt/cedencia-dados.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} in the water body by derivation from GEBCO_08 30 arc-second global grid General Bathymetric Chart of the Oceans	Atlantic - CH01 - Windfarm Siting	http://www.gebco.net/data_and_products/gridded_bathymetry_data/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

GEBCO_2014 Grid ΓÇö a global 30 arc-second interval grid					
Horizontal spatial co-ordinates EEZ boundaries Flanders Marine Institute Exclusive Economic Zones Boundaries (EEZ)	Atlantic - CH01 - Windfarm Siting	http://www.marineregions.org/sources.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Lithology Spatial distribution of Seabed substrate types European Commission Seabed substrate map of the European marine areas	Atlantic - CH01 - Windfarm Siting	http://www.emodnet-geology.eu/geonetwark/srv/dut/catalog.search	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Current speed (Eulerian) in the water body Puertos del Estado Historical data Currents speed (cm/s) (1996/2006-2013) at stations (measurement network) and model points	Atlantic - CH01 - Windfarm Siting	http://www.puertos.es/en-us/oceanografia/Pages/portus.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Skin temperature of the water column Surface max/min water Temperature Puertos del Estado Historical data on Surface max/min Mean Water Temperature at stations (measurement network) and model points	Atlantic - CH01 - Windfarm Siting	http://www.puertos.es/en-us/oceanografia/Pages/portus.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Transport activity Vessel Traffic Density Bureau of Ocean Energy Management AIS_count_all_vessels_atl_2010_shapefile.zip	Atlantic - CH01 - Windfarm Siting	http://www.boem.gov/Renewable-Energy-GIS-Data/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Horizontal spatial co-ordinates MPA Network - spatial extent Convention for the Protection of the Marine Environment of the North-East Atlantic -OSPAR Marine Protected Areas Network(MPA) shapefile	Atlantic - CH01 - Windfarm Siting	http://www.ospar.org/data	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below Lowest Astronomical Tide datum) {bathymetric depth} in the water body Emodnet Digital terrain model	Atlantic - CH01 - Windfarm Siting	http://portal.emodnet-bathymetry.eu/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wind strength and direction Wind speed in the atmosphere ABP Marine Environmental Research Ltd Atlas of UK Marine Renewable Energy Resources-wind	Atlantic - CH01 - Windfarm Siting	http://www.renewables-atlas.info/	Information retrieved upon specific request to the data source	Online downloading services	otherRestrictions## #Restricted
Horizontal velocity of the water column (currents) Current direction in the water body Puertos del Estado Historical data Currents propagation Direction at stations (measurement network) and model points	Atlantic - CH01 - Windfarm Siting	http://www.puertos.es/en-us/oceanografia/Pages/portus.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Terrestrial mapping coastline NOAA / Wdc Marine Geology And Geophysics NGA World Vector Shoreline	Atlantic - CH01 - Windfarm Siting	http://shoreline.noaa.gov/index.html	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below Lowest Astronomical Tide datum) {bathymetric depth} in the water body IHPT, Hydrographic Institute Anexoll-Elevation	Atlantic - CH01 - Windfarm Siting	http://www.hidrografico.pt/cedencia-dados.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Marine Ecosystems Classification Flanders Marine Institute Longhurst Biogeographical Provinces	Atlantic - CH02 - Marine Protected Areas	http://www.marineregions.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted

Bird reproduction Reproduction Areas of Threatened and/or Declining Seabird Species IUCN Headquarters - International Union for Conservation of Nature <i>Sterna dougallii</i>	Atlantic - CH02 - Marine Protected Areas	http://www.iucnredlist.org/search	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Wave height and period statistics Evolution of Wave height and period European Marine Observation and Data Network ΓÇô Physics Waves	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Administrative units Management information for MPA sites Convention for the Protection of the Marine Environment of the North-East Atlantic MPA datasheets	Atlantic - CH02 - Marine Protected Areas	http://mpa.ospar.org/home_ospar	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Alkalinity, acidity and pH of the water column Evolution of ocean acidity European Marine Observation and Data Network ΓÇô Physics pH	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Variation over time of current speed value European Marine Observation and Data Network ΓÇô Physics Currents	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Administrative units Military Activities : Exercises Areas Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Military Range Complex	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Reptile reproduction Reproduction Areas of Threatened and/or Declining Reptile Species World Conservation Monitoring Centre Global Distribution of Sea Turtle Nesting Sites	Atlantic - CH02 - Marine Protected Areas	http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Hazards to navigation Submarine Cables Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Submarine Cables	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)		otherRestrictions## #Unrestricted
Concentration of suspended particulate material in the water column Variation of suspended particulate material concentration in the water column over time European Marine Observation and Data Network ΓÇô Physics Light Attenuation/ Absorption / Fluorescence/ Back Scattering	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Habitat extent Distribution of Threatened and/or Declining Species IUCN Headquarters - International Union for Conservation of Nature <i>Salmo salar</i>	Atlantic - CH02 - Marine Protected Areas	http://www.iucnredlist.org/search	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Hazards to navigation Submarine Cables Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Cable and Pipeline Areas	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Bird taxonomy-related abundance per unit area of surface Bird taxonomy-related abundance per unit area of surface European Marine Observation and Data Network - Biology Lot II <i>Uria aalge</i>	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-biology.eu/portal/index.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted

Man-made structures Aids to Navigation Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Aids to Navigation	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Habitat extent Distribution of Ospar Habitat Convention for the Protection of the Marine Environment of the North-East Atlantic Habitats ΓÇô Polygons	Atlantic - CH02 - Marine Protected Areas	http://odims.ospar.org/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Fisheries Marine Areas International Council for the Exploration of the Sea (ICES) ICES Statistical SubRectangles	Atlantic - CH02 - Marine Protected Areas	http://gis.ices.dk/sf/index.html?widget=StatRec	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Bird counts Abundance of Threatened and/or Declining Seabird Species Department for Environment, Food and Rural Affairs Vulnerable Concentrations of Seabirds to Oil Spills	Atlantic - CH02 - Marine Protected Areas	http://magic.defra.gov.uk/MagicMap.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat extent Phenology evolution and distribution of Threatened and/or Declining Species NOAA National Marine Fisheries Service (NOAA Fisheries Service) Coral EFH for All Lifestages	Atlantic - CH02 - Marine Protected Areas	http://www.habitat.noaa.gov/protection/efh/newInv/index.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Habitat extent Distribution of Threatened and/or Declining Species World Conservation Monitoring Centre Global Patterns of Marine Biodiversity	Atlantic - CH02 - Marine Protected Areas	http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Industrial activity Dredging European Marine Observation and Data Network - Human Activities Dredging	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Habitat characterisation Distribution of Seabed Habitat International Council for the Exploration of the Sea (ICES) Vulnerable Marine Ecosystems	Atlantic - CH02 - Marine Protected Areas	http://ices.dk/marine-data/dataset-collections/Pages/default.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Habitat extent Phenology evolution and distribution of Threatened and/or Declining Species NOAA National Marine Fisheries Service (NOAA Fisheries Service) Reef Fish EFH for All Lifestages	Atlantic - CH02 - Marine Protected Areas	http://www.habitat.noaa.gov/protection/efh/newInv/index.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Habitat extent Distribution of Threatened and/or Declining Species IUCN Headquarters - International Union for Conservation of Nature Acipenser sturio	Atlantic - CH02 - Marine Protected Areas	http://www.iucnredlist.org/search	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Bird taxonomy-related abundance per unit area of surface Bird taxonomy-related abundance per unit area of surface European Marine Observation and Data Network - Biology Lot II Larus fuscus fuscus	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-biology.eu/portal/index.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Bird reproduction Reproduction Areas of Threatened and/or Declining Seabird Species Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Bird Nest sites	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Air temperature Evolution of atmospheric temperature European Marine Observation and Data Network ΓÇô Physics Atmospheric temperature	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium

Administrative units Maritime Boundaries Mid-Atlantic Regional Ocean Assessment Maritime Limits and Boundaries of United States of America ΓÇô 12 NM Territorial Sea	Atlantic - CH02 - Marine Protected Areas	http://portal.midatlanticocean.org/visualize/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Chlorophyll pigment concentrations in the water column Evolution of Chlorophyll concentration in the water column European Marine Observation and Data Network (EMODNET) - Chemistry Chlorophyll pigment concentrations in water bodies	Atlantic - CH02 - Marine Protected Areas	http://emodnet-chemistry.maris2.nl/v_cdi_v3/search.asp	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Significant Marine Ecosystems Ecologically or Biologically Significant Marine Areas EBSAs Regions	Atlantic - CH02 - Marine Protected Areas	https://www.cbd.int/ebsa/ebsas	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Habitat extent Distribution of Threatened and/or Declining Species World Conservation Monitoring Centre Global Distribution of Sperm Whales	Atlantic - CH02 - Marine Protected Areas	http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Primary production in the water column Evolution of intensity and period of primary production in the water column PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Production primaire	Atlantic - CH02 - Marine Protected Areas	http://www.previmer.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Industrial activity Licence of Hydrocarbon Extraction European Marine Observation and Data Network - Human Activities Active Licenses	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Administrative units World Database on Protected Areas UNEP-WCMC World Database on Protected Areas	Atlantic - CH02 - Marine Protected Areas	http://www.unep-wcmc.org/resources-and-data/wdpa	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Sea level Amplitude over time of rising Sea Level European Marine Observation and Data Network ΓÇô Physics Sea Level	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Reptile abundance Abundance of Threatened and/or Declining Reptile Species European Marine Observation and Data Network - Biology Lot II Caretta caretta	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-biology.eu/portal/index.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Maritime Boundaries Flanders Marine Institute Exclusive Economic Zones Boundaries (EEZ)	Atlantic - CH02 - Marine Protected Areas	http://www.marineregions.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Coastal geomorphology coastline European Environment Agency EEA coastline for analysis	Atlantic - CH02 - Marine Protected Areas	http://www.eea.europa.eu/data-and-maps	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Habitat characterisation Eunis Seabed Habitat European Marine Observation and Data Network - Seabed Mapping Lot Celtic & Greater North Seas (2012)	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1974	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Industrial activity Aggregate Extraction European Marine Observation and Data Network - Human Activities Aggregate Extraction	Atlantic - CH02 - Marine Protected	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted

	Areas				
Bird reproduction Reproduction Areas of Threatened and/or Declining Seabird Species Department for Environment, Food and Rural Affairs Seabird Nesting Counts (British Isles)	Atlantic - CH02 - Marine Protected Areas	http://magic.defra.gov.uk/MagicMap.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Bird taxonomy-related abundance per unit area of surface Bird taxonomy-related abundance per unit area of surface European Marine Observation and Data Network - Biology Lot II Pagophila eburnea	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-biology.eu/portal/index.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Wind strength and direction Evolution of wind strength and direction European Marine Observation and Data Network ΓÇô Physics Winds	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Habitat characterisation Distribution of Seabed Habitat World Conservation Monitoring Centre Reefs at Risk Revisited	Atlantic - CH02 - Marine Protected Areas	http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat extent Distribution and evolution over time of habitats that function as potential carbon sinks (salt marshes, mangroves, seagrass, and kelp) Department for Environment, Food and Rural Affairs Saltmarsh (Wales)	Atlantic - CH02 - Marine Protected Areas	http://magic.defra.gov.uk/MagicMap.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Habitat extent Distribution of Ospar Habitat Convention for the Protection of the Marine Environment of the North-East Atlantic Habitats - Points	Atlantic - CH02 - Marine Protected Areas	http://odims.ospar.org/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Habitat characterisation Predicted broad-scale EUNIS habitats EMODNet Seabed Mapping	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Nitrite concentration parameters in the water column Concentration of nitrite {NO2} per unit mass of the water body [unknown phase] European Marine Observation and Data Network (EMODNET) - Chemistry Nitrite concentration parameters in the water column	Atlantic - CH02 - Marine Protected Areas	http://emodnet-chemistry.maris2.nl/v_cdi_v3/search.asp	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Restricted
Alkalinity, acidity and pH of the water column Evolution of ocean acidity European Marine Observation and Data Network (EMODNET) - Chemistry Alkalinity, acidity and pH of the water column	Atlantic - CH02 - Marine Protected Areas	http://emodnet-chemistry.maris2.nl/v_cdi_v3/search.asp	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Reptile abundance Abundance of Threatened and/or Declining Reptile Species European Marine Observation and Data Network - Biology Lot II Dermochelys coriacea	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-biology.eu/portal/index.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Dissolved oxygen parameters in the water column Dissolved oxygen Evolution in the water column European Marine Observation and Data Network (EMODNET) - Chemistry Dissolved oxygen parameters in the water column	Atlantic - CH02 - Marine Protected Areas	http://emodnet-chemistry.maris2.nl/v_cdi_v3/search.asp	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted

Habitat extent Distribution of Threatened and/or Declining Species IUCN Headquarters - International Union for Conservation of Nature <i>Puffinus mauretanicus</i>	Atlantic - CH02 - Marine Protected Areas	http://www.iucnredlist.org/search	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Administrative units Marine Protected Area Convention for the Protection of the Marine Environment of the North-East Atlantic OSPAR - Marine Protected Areas	Atlantic - CH02 - Marine Protected Areas	http://carto.mpa.ospar.org/1/ospar.map	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Wave direction Evolution of Wave direction European Marine Observation and Data Network ΓÇô Physics Waves	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Habitat extent Distribution of Threatened and/or Declining Species IUCN Headquarters - International Union for Conservation of Nature <i>Dermochelys coriacea</i>	Atlantic - CH02 - Marine Protected Areas	http://www.iucnredlist.org/search	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Fish behaviour Migratory Patterns of Threatened and/or Declining Fish Species Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Highly Migratory Species Essential Fish Habitat (EFH) Overlay	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat extent Phenology evolution and distribution of Threatened and/or Declining Species NOAA National Marine Fisheries Service (NOAA Fisheries Service) Bluefin tuna	Atlantic - CH02 - Marine Protected Areas	http://www.habitat.noaa.gov/protection/efh/newInv/index.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Administrative units Locations of Marine Protected Area the Convention on Wetlands (Ramsar, 1971) Ramsar Sites	Atlantic - CH02 - Marine Protected Areas	https://rsis.ramsar.org/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Cetacean abundance Abundance of Threatened and/or Declining Cetacean Species European Marine Observation and Data Network - Biology Lot II <i>Balaenoptera musculus</i>	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-biology.eu/portal/index.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units OSPAR Boundary Convention for the Protection of the Marine Environment of the North-East Atlantic OSPAR Boundary and Regions	Atlantic - CH02 - Marine Protected Areas	http://odims.ospar.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Concentration of phosphate {PO43- CAS 14265-44-2} per unit mass of the water body [unknown phase] European Marine Observation and Data Network (EMODNET) - Chemistry Phosphate concentration parameters in the water column	Atlantic - CH02 - Marine Protected Areas	http://emodnet-chemistry.maris2.nl/v_cdi_v3/search.asp	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Restricted
Administrative units Natura 2000 sites European Environment Agency Natura 2000 End 2015 - Shapefile	Atlantic - CH02 - Marine Protected Areas	http://www.eea.europa.eu/data-and-maps	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Habitat extent Distribution and evolution over time of habitats that function as potential carbon sinks (salt marshes, mangroves, seagrass, and kelp) World Conservation Monitoring Centre Global Distribution of Mangroves USGS	Atlantic - CH02 - Marine Protected Areas	http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

Coastal geomorphology coastline NOAA / National Geophysical Data Center Global Self-consistent Hierarchical High-resolution Shorelines	Atlantic - CH02 - Marine Protected Areas	https://www.ngdc.noaa.gov/mgg/shorelines/gshhs.html	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body European Marine Observation and Data Network ΓÇô Physics Salinity	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Temperature of the water column Temperature of the water body European Marine Observation and Data Network ΓÇô Physics Water Temperature	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Industrial activity Submarine Ocean Energy Facilities European Marine Observation and Data Network - Human Activities Ocean Energy Facilities	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Industrial activity Offshore Installations Convention for the Protection of the Marine Environment of the North-East Atlantic Offshore Renewable Energy	Atlantic - CH02 - Marine Protected Areas	http://odims.ospar.org/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Marine Ecosystems Classification Flanders Marine Institute Large Marine Ecosystems of the World	Atlantic - CH02 - Marine Protected Areas	http://www.marineregions.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Nitrate concentration parameters in the water column Concentration of nitrate {NO3} per unit mass of the water body [unknown phase] European Marine Observation and Data Network (EMODNET) - Chemistry Nitrate concentration parameters in the water column	Atlantic - CH02 - Marine Protected Areas	http://emodnet-chemistry.maris2.nl/v_cdi_v3/search.asp	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Restricted
Habitat extent Phenology evolution and distribution of Threatened and/or Declining Species NOAA National Marine Fisheries Service (NOAA Fisheries Service) Blue Marlin	Atlantic - CH02 - Marine Protected Areas	http://www.habitat.noaa.gov/protection/efh/newInv/index.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Habitat extent Phenology evolution and distribution of Threatened and/or Declining Species NOAA National Marine Fisheries Service (NOAA Fisheries Service) Basking shark	Atlantic - CH02 - Marine Protected Areas	http://www.habitat.noaa.gov/protection/efh/newInv/index.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Habitat extent Phenology evolution and distribution of Threatened and/or Declining Species NOAA National Marine Fisheries Service (NOAA Fisheries Service) Porbeagle	Atlantic - CH02 - Marine Protected Areas	http://www.habitat.noaa.gov/protection/efh/newInv/index.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Dissolved oxygen parameters in the water column Dissolved oxygen Evolution in the water column European Marine Observation and Data Network ΓÇô Physics oxygen	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Fish reproduction Reproduction Areas of Threatened and/or Declining Fish Species International Council for the Exploration of the Sea (ICES) Eggs and larvae	Atlantic - CH02 - Marine Protected Areas	http://www.ices.dk/marine-data/dataset-collections/Pages/default.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Industrial activity Active Boreholes European Marine Observation and Data Network - Human Activities Boreholes	Atlantic - CH02 - Marine Protected	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted

	Areas				
Administrative units Heritage Marine Sites Flanders Marine Institute World Marine Heritage Sites	Atlantic - CH02 - Marine Protected Areas	http://www.marineregions.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Management information for Natura 2000 sites European Environment Agency Natura 2000 Access Database	Atlantic - CH02 - Marine Protected Areas	http://www.eea.europa.eu/data-and-maps	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Anchorages areas Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Anchorage Areas	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Evolution of Current Direction European Marine Observation and Data Network ΓÇô Physics Currents	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Industrial activity Offshore oil facilities European Marine Observation and Data Network - Human Activities Offshore Installations	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Man-made structures Lighthouses European Marine Observation and Data Network - Human Activities Lighthouses	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Habitat characterisation Eunis Seabed Habitat European Marine Observation and Data Network - Seabed Mapping Lot Predicted broad-scale EUNIS habitats - Atlantic area (updated 9 December 2013)	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1974	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Regulations Areas for marine vessel traffic Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Marine Mammal Seasonal Management Areas (Marine Cadastre)	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Maritime Boundaries Mid-Atlantic Regional Ocean Assessment Maritime Limits and Boundaries of United States of America ΓÇô 24 NM Territorial Sea	Atlantic - CH02 - Marine Protected Areas	http://portal.midatlanticocean.org/visualize/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Maritime Boundaries Mid-Atlantic Regional Ocean Assessment Maritime Limits and Boundaries of United States of America - 200 NM EEZ and Maritime Boundaries	Atlantic - CH02 - Marine Protected Areas	http://portal.midatlanticocean.org/visualize/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Reptile abundance Abundance of Threatened and/or Declining Reptile Species Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Sea Turtle Sightings Per Unit Effort (Loggerhead turtle, Leatherback turtle, Green sea turtle)	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units IHO Sea Areas Flanders Marine Institute IHO Sea Areas	Atlantic - CH02 - Marine Protected	http://www.marineregions.org/sources.php	Use of open search engines, searching by name either the data provider or the	Online downloading services	otherRestrictions## #Unrestricted

	Areas		characteristics		
Bird taxonomy-related abundance per unit area of surface Bird taxonomy-related abundance per unit area of surface European Marine Observation and Data Network - Biology Lot II Puffinus assimilis baroli	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-biology.eu/portal/index.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Coastal geomorphology Coastline SHOM (SERVICE HYDROGRAPHIQUE ET OCEANOGRAPHIQUE DE LA MARINE) Trait de C te Histolitt	Atlantic - CH02 - Marine Protected Areas	http://diffusion.shom.fr/produits/bd-maritime-et-littoral.html	Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Unrestricted
Phytoplankton generic abundance in water bodies Abundance of phytoplankton per unit volume of the water body by optical microscopy PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Production primaire	Atlantic - CH02 - Marine Protected Areas	http://www.previmer.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Fish taxonomy-related abundance per unit area of the bed Fish taxonomy-related abundance per unit area of the bed European Marine Observation and Data Network - Biology Lot II Acipenser sturio	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-biology.eu/portal/index.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} in the water body by derivation from GEBCO_14 30 arc-second global grid Flanders Marine Institute GEBCO_2014 Grid (30 arc-second interval)	Atlantic - CH02 - Marine Protected Areas	http://www.marineresources.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Manual process: Order form/invoice is requested	otherRestrictions## #Unrestricted
River flow and discharge Evolution of the flow exchange between the river and the sea World Conservation Monitoring Centre Global Estuary Database	Atlantic - CH02 - Marine Protected Areas	http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Administrative units Military Activities : Restricted Areas Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Danger Zones and Restricted Areas in the United States as of July 2015	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Military Activities : Exercises Areas Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Naval Underwater Warfare Center Testing Range	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Marine Ecosystems Classification Flanders Marine Institute Marine Ecoregions of the World, MEOW (Spalding et al., 2007)	Atlantic - CH02 - Marine Protected Areas	http://www.marineresources.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Marine environment leisure usage Leisure Activity (Diving, Snorkeling) Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Recreational SCUBA Diving Areas	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Fish and Shellfish Catch Statistics International Council for the Exploration of the Sea (ICES) ICES Historical Landings 1903-1949	Atlantic - CH02 - Marine Protected Areas	http://www.ices.dk/marine-data/dataset-collections/Pages/default.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} Flanders Marine Institute ETOPO1 Global Relief Model	Atlantic - CH02 - Marine Protected Areas	http://www.marineresources.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted

	Areas				
Hazards to navigation Submarine Cables Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Submarine Cables	Atlantic - CH02 - Marine Protected Areas	http://www.northeastocean.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Man-made structures Infrastructure Types (Tourism, Industrial Ç ^a) Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Human population by Town, 2013	Atlantic - CH02 - Marine Protected Areas	http://www.northeastocean.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Transport activity Marine traffic density and trajectory : All Traffic overview Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States 2011 Vessel Density: All	Atlantic - CH02 - Marine Protected Areas	http://www.northeastocean.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Fishing by-catch Fishing by-catch FAO / FAO - Food and Agriculture Organization of the United Nations Global Production Statistics 1950-2014	Atlantic - CH02 - Marine Protected Areas	Global Production Statistics 1950-2014	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Habitat extent Phenology evolution and distribution of Threatened and/or Declining Species NOAA National Marine Fisheries Service (NOAA Fisheries Service) Angel shark	Atlantic - CH02 - Marine Protected Areas	http://www.habitat.noaa.gov/protection/efh/newInv/index.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Evolution of distribution of macroalgae and seagrass habitat (habitats that function as potential carbon sinks) World Conservation Monitoring Centre Global Seagrass Species Richness	Atlantic - CH02 - Marine Protected Areas	http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Evolution of distribution of macroalgae and seagrass habitat (habitats that function as potential carbon sinks) Department for Environment, Food and Rural Affairs Seagrass (Wales)	Atlantic - CH02 - Marine Protected Areas	http://magic.defra.gov.uk/MagicMap.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Transport activity Marine traffic density and trajectory : All Traffic overview Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States 2013 Vessel Density: All	Atlantic - CH02 - Marine Protected Areas	http://www.northeastocean.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Man-made structures Infrastructure Types (Tourism, Industrial Ç ^a) Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Tourism and Recreation Establishments by Conty	Atlantic - CH02 - Marine Protected Areas	http://www.northeastocean.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Administrative units Military Activities : Exercises Areas Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Submarine Transit Lanes	Atlantic - CH02 - Marine Protected Areas	http://www.northeastocean.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Management information for Marine Protected Area Monitoring the Atlantic Inflow towards the Arctic MAIA WEB GIS	Atlantic - CH02 - Marine Protected Areas	http://carto.maia-network.org/1/maia.map	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Administrative units Military Activities : Restricted Areas Mid-Atlantic Regional Ocean Assessment Unexploded Ordnances in US waters as of February 2014	Atlantic - CH02 - Marine Protected Areas	http://portal.midatlanticocean.org/visualize/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted

Bathymetry and Elevation Geomorphological types of features on the sea floor Flanders Marine Institute Undersea feature names	Atlantic - CH02 - Marine Protected Areas	http://www.marinerregions.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Man-made structures Infrastructure Types (Tourism, Industrial) Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Seasonal Housing	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceananddata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Marine environment leisure usage Status of Bathing Waters European Marine Observation and Data Network - Human Activities Status of Bathing Waters	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Fish and Shellfish Catch Statistics International Council for the Exploration of the Sea (ICES) Historical Nominal Catches 1950-2010	Atlantic - CH02 - Marine Protected Areas	http://www.ices.dk/marine-data/dataset-collections/Pages/default.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Administrative units Regulations Areas for marine vessel traffic Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States WhalesNorth Mandatory Ship Reporting System	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceananddata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Migratory Patterns of Threatened and/or Declining Reptile Species World Conservation Monitoring Centre Global Distribution of Sea Turtle Feeding Sites	Atlantic - CH02 - Marine Protected Areas	http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Marine environment leisure usage Leisure Activity (Diving, Snorkeling) Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Commercial Whale Watching Areas	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceananddata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Fish taxonomy-related abundance per unit area of the bed Fish taxonomy-related abundance per unit area of the bed European Marine Observation and Data Network - Biology Lot II Lamna nasus	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-biology.eu/portal/index.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Transport activity Marine traffic density and trajectory: Per Vessel Size Automatic Identification System (AIS) Type (Vessel)	Atlantic - CH02 - Marine Protected Areas	http://www.marinetraffic.com/	Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Man-made structures Planned Ocean Energy Facilities (windfarm) European Marine Observation and Data Network - Human Activities Wind Farms (Points)	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Fisheries Restricted Areas Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States (EFH) Areas Protected From Fishing	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceananddata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Evolution of distribution of macroalgae and seagrass habitat (habitats that function as potential carbon sinks) World Conservation Monitoring Centre Global Distribution of Seagrasses	Atlantic - CH02 - Marine Protected Areas	http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Fish and Shellfish Catch Statistics International Council for the Exploration of the Sea (ICES) Official Nominal Catches 2006-2014	Atlantic - CH02 - Marine Protected Areas	http://www.ices.dk/marine-data/dataset-collections/Pages/default.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted

Hazards to navigation Pipe lines and cables European Marine Observation and Data Network - Human Activities BSH CONTIS Cables	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Military Activities : Exercises Areas Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Cape Cod Torpedo Exercise (TORPEX) Boxes	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Administrative units Fisheries Marine Areas International Council for the Exploration of the Sea (ICES) ICES Statistical rectangles	Atlantic - CH02 - Marine Protected Areas	http://ices.dk/marine-data/dataset-collections/Pages/default.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Fishery characterisation Finfish farming European Marine Observation and Data Network - Human Activities Finfish farming sites	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} European Marine Observation and Data Network - Bathymetry EMODnet Digital Terrain Model (DTM)	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-bathymetry.eu/content/content.asp?menu=0040000_000000	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Transport activity Marine traffic density and trajectory: Per Vessel Type Automatic Identification System (AIS) Capacity (Vessel)	Atlantic - CH02 - Marine Protected Areas	http://www.marinetraffic.com/	Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Hazards to navigation Wrecks Site Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Wrecks and Obstructions	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units OSPAR List of Threatened and/or Declining Species and Habitats Convention for the Protection of the Marine Environment of the North-East Atlantic list of threatened and/or declining species and habitats	Atlantic - CH02 - Marine Protected Areas	http://www.ospar.org/work-areas/bdc/species-habitats	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Names of features on the sea floor Flanders Marine Institute Undersea feature names	Atlantic - CH02 - Marine Protected Areas	http://www.marineregions.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Transport activity Marine traffic density and trajectory : All Traffic overview Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States 2011 Vessel Density: All	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Official Dredge Spoil Dumping sites Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Ocean Disposal Sites	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Hazards to navigation Pipe lines and cables European Marine Observation and Data Network - Human Activities Telecommunication Cables (schematic routes)	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Marine archaeology Marine Archaeology Site European Marine Observation and Data Network - Human Activities Submerged Prehistoric Archaeology and Landscapes	Atlantic - CH02 - Marine Protected	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium

	Areas				
Fishery characterisation Shellfish farming European Marine Observation and Data Network - Human Activities Shellfish Production	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
River flow and discharge Evolution of the flow exchange between the river and the sea PREVIMER - COASTAL OBSERVATIONS AND FORECASTS Production primaire	Atlantic - CH02 - Marine Protected Areas	http://www.previmer.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Administrative units Fisheries Marine Areas International Council for the Exploration of the Sea (ICES) ICES Statistical areas	Atlantic - CH02 - Marine Protected Areas	http://ices.dk/marine-data/dataset-collections/Pages/default.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Administrative units Regulations Areas for marine vessel traffic Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Shipping Fairways, Lanes, and Zones for US waters as of June 2013	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Transport activity Marine traffic density and trajectory : All Traffic overview Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States 2012 Vessel Density: All	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Administrative units Dumped Munitions areas European Marine Observation and Data Network - Human Activities Dumped Munitions (Polygons)	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Man-made structures Ports European Marine Observation and Data Network - Human Activities Main Ports	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Man-made structures Infrastructure Types (Tourism, Industrial) Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Marinas by County	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Administrative units Dumped Munitions areas European Marine Observation and Data Network - Human Activities Dumped Munitions (Points)	Atlantic - CH02 - Marine Protected Areas	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Hazards to navigation Pipe lines and cables Northeast Ocean Data : Map and Data for ocean planning in the Northeastern United States Submarine Cables	Atlantic - CH02 - Marine Protected Areas	http://www.northeastoceandata.org/data-explorer/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Industrial activity Oil and Gas Offshore installations (localisation and characteristics) European Marine Observation and Data Network - Human Activities Hydrocarbon Extraction	Atlantic - CH03 - Oil Platform Leaks	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Eastward current velocity in the water body Copernicus Marine Environment Monitoring Service Global Ocean 1/12 ^T Physics Analysis and Forecast updated Daily	Atlantic - CH03 - Oil Platform Leaks	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

Administrative units EEZ Flanders Marine Institute Exclusive Economic Zones Boundaries (EEZ)	Atlantic - CH03 - Oil Platform Leaks	http://www.marinerregions.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body Copernicus Marine Environment Monitoring Service Global Ocean 1/12 th Physics Analysis and Forecast updated Daily	Atlantic - CH03 - Oil Platform Leaks	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat extent Marine Protected Areas National Ocean and Atmospheric Administration, National Marine Protected Areas Center MPA Inventory	Atlantic - CH03 - Oil Platform Leaks		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Habitat extent Threatened and/or declining Habitats European Marine Observation and Data Network - Seabed Habitats OSPAR Threatened and/or Declining Habitats 2014	Atlantic - CH03 - Oil Platform Leaks	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat extent Protected Areas Protected Planet World Database on Protected Areas	Atlantic - CH03 - Oil Platform Leaks		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Habitat extent Marine Protected Areas Network Convention for the Protection of the Marine Environment of the North-East Atlantic Marine Protected Areas Network	Atlantic - CH03 - Oil Platform Leaks	http://www.ospar.org/data	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation Predicted broad-scale EUNIS Habitats European Marine Observation and Data Network - Seabed Habitats Predicted broad-scale EUNIS habitats - Atlantic area	Atlantic - CH03 - Oil Platform Leaks	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Industrial activity Oil and Gas Offshore installations (localisation, classification and characteristics) Convention for the Protection of the Marine Environment of the North-East Atlantic Inventory of Offshore Installations	Atlantic - CH03 - Oil Platform Leaks	http://www.ospar.org/data	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Industrial activity Oil and Gas Offshore installations National Geospatial-Intelligence Agency Mobile Offshore Drilling Units	Atlantic - CH03 - Oil Platform Leaks		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Habitat extent Environmental Sensitivity Index National Oceanic and Atmospheric Administration Environmental Sensitivity Index (ESI) Maps	Atlantic - CH03 - Oil Platform Leaks		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Horizontal velocity of the water column (currents) Eastward current velocity in the water body IFREMER/CENTRE DE BRETAGNE Previsions hydrodynamiques (MARS3D) pour la façade Manche/ Golfe de Gascogne	Atlantic - CH03 - Oil Platform Leaks	http://www.previmer.org/content/download/7493/39975/file/2014_11_05_catalogue-previmer_v2.3.pdf	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Manual process: Order form/invoice is requested	otherRestrictions## #Accessible under moratorium
Horizontal velocity of the water column (currents) Eastward current velocity in the water body Copernicus Marine Environment Monitoring Service Atlantic - European North West Shelf - Ocean Physics Analysis and Forecast	Atlantic - CH03 - Oil Platform Leaks	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Integrated eastward current velocity (Eulerian) in the water body IFREMER/CENTRE DE BRETAGNE Previsions hydrodynamiques (MARS2D) pour la façade Atlantique Nord Est	Atlantic - CH03 - Oil Platform Leaks	http://www.previmer.org/content/download/7493/39975/file/2014_11_05_catalogue-previmer_v2.3.pdf	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Manual process: Order form/invoice is requested	otherRestrictions## #Accessible under moratorium

Horizontal velocity of the water column (currents) Eastward current velocity in the water body Copernicus Marine Environment Monitoring Service Global Ocean 1/4° Physics Analysis and Forecast updated Daily	Atlantic - CH03 - Oil Platform Leaks	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Eastward current velocity in the water body Copernicus Marine Environment Monitoring Service Atlantic-Iberian Biscay Irish- Ocean Physics Analysis and Forecast	Atlantic - CH03 - Oil Platform Leaks	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body Copernicus Marine Environment Monitoring Service Global Ocean 1/12° Physics Analysis and Forecast updated Daily	Atlantic - CH03 - Oil Platform Leaks	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation Lithology National Environmental Satellite, Data, and Information Service Seabed Descriptions from Hydrographic Surveys	Atlantic - CH03 - Oil Platform Leaks	http://www.ngdc.noaa.gov/mgg/geology/geology.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Integrated eastward current velocity (Eulerian) in the water body IFREMER/CENTRE DE BRETAGNE Prévisions hydrodynamiques (MARS2D) pour la façade Manche/ Golfe de Gascogne	Atlantic - CH03 - Oil Platform Leaks	http://www.previmer.org/content/download/7493/39975/file/2014_11_05_catalogue-previmer_v2.3.pdf	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Manual process: Order form/invoice is requested	otherRestrictions## #Accessible under moratorium
Habitat characterisation Large Marine Ecosystems NOAA National Marine Fisheries Service Large Marine Ecosystems of the World	Atlantic - CH03 - Oil Platform Leaks	http://www.marinerregions.org/sources.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Habitat extent Coastal Protected Areas European Marine Observation and Data Network - Human Activities Natura 2000	Atlantic - CH03 - Oil Platform Leaks	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Industrial activity Wind Farms offshore installations (localisation) European Marine Observation and Data Network - Human Activities Wind Farms	Atlantic - CH03 - Oil Platform Leaks	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wind speed and direction Wind velocity (10m along y-axis) in the atmosphere by model prediction METEO France Données de modèle atmosphérique global	Atlantic - CH03 - Oil Platform Leaks	https://donneespubliques.meteofrance.fr/?fond=rubrique&id_rubrique=51	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wind speed and direction Wind velocity (10m along y-axis) in the atmosphere by model prediction European Center for Medium-Range Weather Forecasts Atmospheric Model High Resolution 10-day forecast	Atlantic - CH03 - Oil Platform Leaks	http://www.ecmwf.int/en/forecasts/datasets/catalogue-ecmwf-real-time-products	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Manual process: Order form/invoice is requested	otherRestrictions## #Accessible under moratorium
Horizontal velocity of the water column (currents) Eastward current velocity in the water body National Centers for Environmental Prediction Global RTOFS	Atlantic - CH03 - Oil Platform Leaks	http://www.nco.ncep.noaa.gov/pmb/products/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Fishery characterisation Benthic fisheries footprint Food and Agriculture Organization of the United Nations Vulnerable Marine Ecosystems	Atlantic - CH03 - Oil Platform Leaks		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wind speed and direction Wind velocity (10m along y-axis) in the atmosphere by model prediction METEO France Données de modèle atmosphérique à haute résolution	Atlantic - CH03 - Oil Platform Leaks	https://donneespubliques.meteofrance.fr/?fond=rubrique&id_rubrique=51	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Terrestrial mapping Coastlines National Environmental Satellite, Data, and Information Service US Coastal Relief Model	Atlantic - CH03 - Oil Platform Leaks	https://www.ngdc.noaa.gov/mgg/bathymetry/relief.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

Terrestrial mapping Coastlines Natural Earth Coastlines	Atlantic - CH03 - Oil Platform Leaks	http://www.naturalearthdata.com/downloads/10m-physical-vectors/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wind speed and direction Wind velocity (10m along y-axis) in the atmosphere by model prediction National Centers for Environmental Prediction, Central Operations Global Forecast System	Atlantic - CH03 - Oil Platform Leaks	http://www.nco.ncep.noaa.gov/pmb/products/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Integrated eastward current velocity (Eulerian) in the water body AVISO Global Tide - Fes2012	Atlantic - CH03 - Oil Platform Leaks	http://www.aviso.altimetry.fr/en/data/products/auxiliary-products.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} National Environmental Satellite, Data, and Information Service ETOPO1 Global Relief Model	Atlantic - CH03 - Oil Platform Leaks	https://www.ngdc.noaa.gov/mgg/bathymetry/relief.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Eastward current velocity in the water body National Ocean Partnership Program GOFS 3.0 HYCOM+NCODA Global 1/12 Analysis	Atlantic - CH03 - Oil Platform Leaks	https://hycom.org/ocean-prediction	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Fish and shellfish catch statistics Fish Catch geospatial statistics European Marine Observation and Data Network - Human Activities Fish catches by FAO statistical area	Atlantic - CH03 - Oil Platform Leaks	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Transport activity Port Localisation National Geospatial-Intelligence Agency World Port Index	Atlantic - CH03 - Oil Platform Leaks		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Restricted
Marine environment leisure usage State of bathing waters European Marine Observation and Data Network - Human Activities State of Bathing Waters	Atlantic - CH03 - Oil Platform Leaks	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Fishery characterisation Mariculture sites European Marine Observation and Data Network - Human Activities Finfish production	Atlantic - CH03 - Oil Platform Leaks	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Eastward current velocity in the water body National Ocean Partnership Program HYCOM Gulf of Mexico 1/25 Analysis	Atlantic - CH03 - Oil Platform Leaks	https://hycom.org/ocean-prediction	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Fishery characterisation Mariculture sites European Marine Observation and Data Network - Human Activities Shellfish production	Atlantic - CH03 - Oil Platform Leaks	http://www.emodnet-humanactivities.eu/view-data.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Wind speed and direction Wind velocity (10m along y-axis) in the atmosphere by model prediction METEO France Données de modèle atmosphérique global	Atlantic - CH03 - Oil Platform Leaks	https://donneespubliques.meteofrance.fr/?fond= rubrique&id_rubrique=51	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} European Marine Observation and Data Network - Bathymetry Digital Terrain Model	Atlantic - CH03 - Oil Platform Leaks		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} in the water body by derivation from GEBCO_08 30 arc-second global grid Natural Earth Bathymetry	Atlantic - CH03 - Oil Platform Leaks	http://www.naturalearthdata.com/downloads/10m-physical-vectors/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted

Horizontal velocity of the water column (currents) Eastward current velocity in the water body Naval Oceanographic Office NCOM Hi-Res US East Coast and Gulf Stream Regions	Atlantic - CH03 - Oil Platform Leaks	http://www.opc.ncep.noaa.gov/Current_fcasts.shtml	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Marine environment leisure usage Urban density Natural Earth Urban areas	Atlantic - CH03 - Oil Platform Leaks	http://www.naturalearthdata.com/downloads/10m-cultural-vectors/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wind speed and direction Wind velocity (10m along y-axis) in the atmosphere by model prediction Global Ocean Data Assimilation Experiment Coupled Ocean Atmosphere Mesoscale Prediction System	Atlantic - CH03 - Oil Platform Leaks	http://www.usgodae.org/cgi-bin/datalist.pl?generate=summary	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Wind speed and direction Wind velocity (10m along y-axis) in the atmosphere by model prediction Global Ocean Data Assimilation Experiment Navy Global Environmental Model	Atlantic - CH03 - Oil Platform Leaks	http://www.usgodae.org/cgi-bin/datalist.pl?generate=summary	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) (bathymetric depth) in the water body by derivation from GEBCO_08 30 arc-second global grid British Oceanographic Data Centre General Bathymetry Chart of the Oceans	Atlantic - CH03 - Oil Platform Leaks	https://www.bodc.ac.uk/data/online_delivery/gebco/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Terrestrial mapping Coastlines National Environmental Satellite, Data, and Information Service Global Shelf-consistent, Hierarchical, High-resolution Geography Database	Atlantic - CH03 - Oil Platform Leaks	https://www.ngdc.noaa.gov/mgg/bathymetry/relief.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Horizontal velocity of the water column (currents) Northward current velocity in the water body Copernicus Marine Environment Monitoring Service GLOBAL OCEAN 1/12 ^T PHYSICS ANALYSIS AND FORECAST UPDATED DAILY	Atlantic - CH04 - Climate	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Density of the water column Sigma-theta of the water body by computation from salinity and potential temperature using UNESCO algorithm Copernicus Marine Environment Monitoring Service GLOBAL OCEAN 1/12 ^T PHYSICS ANALYSIS AND FORECAST UPDATED DAILY	Atlantic - CH04 - Climate	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Snow and ice mass, thickness and extent Coverage (by area) of ice on the water body by model prediction Copernicus GLOBAL OCEAN 1/12 ^T PHYSICS ANALYSIS AND FORECAST UPDATED DAILY	Atlantic - CH04 - Climate	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body EMODNET - Physics EModNEt Physics- Temperature	Atlantic - CH04 - Climate	http://www.emodnet-physics.eu/map/DefaultMap.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Snow and ice mass, thickness and extent Coverage (by area) of ice on the water body by Advanced Microwave Scanning Radiometer for EOS (AMSRE-E) National Snow and Ice Data Centre NSIDC Passive Microwave Sea Ice Products	Atlantic - CH04 - Climate	http://nsidc.org/data/seaice/pm.html	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
CH4_012 National Oceanic and Atmospheric Administration Heat Content Global analyzed fields	Atlantic - CH04 - Climate	http://www.nodc.noaa.gov/OC5/3M_HEAT_CONTENT/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body National Oceanic and Atmospheric Administration World Ocean Database 2013 - Hydrography	Atlantic - CH04 - Climate	http://www.nodc.noaa.gov/OC5/WOD13/	Use of open search engines, searching by name either the data provider or the	Online discovery and downloading services	otherRestrictions## #Unrestricted

			characteristics		
Snow and ice mass, thickness and extent Coverage (by area) of ice on the water body by image analysis National Snow and Ice Data Centre NSIDC Visible and Infrared Sea Ice Products & Field Observations and Operational Charts	Atlantic - CH04 - Climate	http://nsidc.org/data/seaice/data_summaries.html	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Snow and ice mass, thickness and extent Coverage (by area) of ice on the water body by image analysis Hadley Centre for Climate Prediction and Research HADISST	Atlantic - CH04 - Climate	http://www.metoffice.gov.uk/hadobs/hadisst/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Restricted
Phytoplankton generic abundance in water bodies Abundance of phytoplankton per unit volume of the water body by optical microscopy National Oceanic and Atmospheric Administration World Ocean Database 2013 - Biology	Atlantic - CH04 - Climate	http://www.nodc.noaa.gov/OC5/WOD13/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body Hadley Centre for Climate Prediction and Research EN4: quality controlled subsurface ocean temperature and salinity profiles and objective analyses	Atlantic - CH04 - Climate	http://www.metoffice.gov.uk/hadobs	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Restricted
Temperature of the water column Temperature of the water body Hadley Centre for Climate Prediction and Research HADISST	Atlantic - CH04 - Climate	http://www.metoffice.gov.uk/hadobs/hadisst/	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Restricted
Temperature of the water column Temperature of the water body Hadley Centre for Climate Prediction and Research EN4: quality controlled subsurface ocean temperature and salinity profiles and objective analyses	Atlantic - CH04 - Climate	http://www.metoffice.gov.uk/hadobs	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Restricted
Temperature of the water column Temperature of the water body International Council for the Exploration of the Sea (ICES) IROC TimeSeries	Atlantic - CH04 - Climate		Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Phytoplankton generic abundance in water bodies Abundance of phytoplankton per unit volume of the water body by optical microscopy National Oceanic and Atmospheric Administration COPEPOD North Atlantic Plankton Data	Atlantic - CH04 - Climate	http://www.st.nmfs.noaa.gov/copepod/content/region_natl.html	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Phytoplankton taxonomic abundance in water bodies CH4_015 Sir Alister Hardy Foundation for Ocean Science	Atlantic - CH04 - Climate		Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Sedimentation flux quantification in the water column Sedimentation mass flux standard deviation of suspended particulate material {SPM} per unit time per unit area of the water body by sediment trapping and gravimetry USGS River discharges	Atlantic - CH05 - Coasts	http://cida.usgs.gov/sediment/	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Coastal geomorphology not known Maryland shoreline surveys conducted by CCI	Atlantic - CH05 - Coasts	http://ccrm.vims.edu/gis_data_maps/shoreline_inventories/index.html	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented

Sea level Surface elevation daily mean (unspecified datum) of the water body The Virginia Base Mapping Program	Atlantic - CH05 - Coasts	http://www.vita.virginia.gov/isp/default.aspx?id=8412	Cited in peer reviewed paper or grey literature but no info on how to access	Online downloading services	otherRestrictions## #Not or not well documented
Sea level Surface elevation (unspecified datum) of the water body National Oceanic and Atmospheric Administration (NOAA) Hydrographic surveys by NOAA	Atlantic - CH05 - Coasts	http://www.ngdc.noaa.gov/mgg/bathymetry/hydro.html	Cited in peer reviewed paper or grey literature but no info on how to access	Online downloading services	otherRestrictions## #Not or not well documented
Sedimentation flux quantification in the water column Sedimentation mass flux standard deviation of suspended particulate material (SPM) per unit time per unit area of the water body by sediment trapping and gravimetry total suspended solids (TSS) Virginia and Maryland water quality monitoring stations	Atlantic - CH05 - Coasts	unknown	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Sea level Surface elevation (unspecified datum) of the water body by infra-red laser rangefinder (infra-red LIDAR) Maryland LIDAR	Atlantic - CH05 - Coasts	http://imap.maryland.gov/Pages/lidar.aspx	Cited in peer reviewed paper or grey literature but no info on how to access	Online downloading services	otherRestrictions## #Not or not well documented
Coastal geomorphology not known Maryland Geological Survey (MGS) study	Atlantic - CH05 - Coasts	http://www.mgs.md.gov	Cited in peer reviewed paper or grey literature but no info on how to access	Online downloading services	otherRestrictions## #Not or not well documented
Sedimentation flux quantification in the water column Sedimentation volume flux of suspended particulate material (SPM) per unit time per unit area of the water body by sediment trapping and physical measurement Joint Research Centre (JRC) European atlas of the seas	Atlantic - CH05 - Coasts	https://ec.europa.eu/jrc/en/scientific-tool/european-atlas-seas###http://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/#lang=EN;bkgd=5:0.75;mode=1;pos=11.754:54.605:4;theme=2:0.75:1;	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Sea level Height above sea level European Commission - DG for Maritime Affairs and Fisheries European Atlas of the Seas	Atlantic - CH05 - Coasts		Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Sea level Height above sea level EMODnet Physics Near real time sea level data	Atlantic - CH05 - Coasts	http://www.emodnet-physics.eu/map/Service/Catalogue.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Sea level Height above sea level Copernicus Marine Environment Monitoring Service Sea level	Atlantic - CH05 - Coasts	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Sea level Height above sea level National Oceanic and Atmospheric Administration (NOAA) NOAA Sea Level Trends	Atlantic - CH05 - Coasts	http://tidesandcurrents.noaa.gov/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #
Sea level Height above sea level Syst�me d'Observation du Niveau des Eaux Littorales Sea level	Atlantic - CH05 - Coasts	http://www.sonel.org/ftpWeb/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Sea level Height above sea level Copernicus Marine Environment Monitoring Service GLOBAL OCEAN GRIDDED SEA LEVEL ANOMALIES NOISE REPROCESSED	Atlantic - CH05 - Coasts	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

Sea level Surface elevation daily mean (unspecified datum) of the water body AVISO AVISO ODES (ONLINE DATA EXTRACTION SERVICE)	Atlantic - CH05 - Coasts	http://www.aviso.altimetry.fr/en/data.html	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Sedimentation flux quantification in the water column Sedimentation mass flux standard deviation of suspended particulate material (SPM) per unit time per unit area of the water body by sediment trapping and gravimetry Chesapeake Bay hydrodynamic model	Atlantic - CH05 - Coasts	unknown	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Sea level Height above sea level British Oceanographic Data Centre International Sea Level	Atlantic - CH05 - Coasts	https://www.bodc.ac.uk/data/online_delivery/international_sea_level/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Sea level Surface elevation daily mean (unspecified datum) of the water body AVISO CNES altimetry products	Atlantic - CH05 - Coasts	https://aviso-data-center.cnes.fr/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Sea level Height above sea level School of Ocean and Earth Science and Technology, University of Hawai'i at Manoa UHSLC real-time sea level data	Atlantic - CH05 - Coasts	http://uhslc.soest.hawaii.edu/data/download/fd	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Sea level Height above sea level Permanent Service for Mean Sea Level PSMSL sea level data	Atlantic - CH05 - Coasts	http://www.psmsl.org/data/obtaining/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Sea level Height above sea level Physical Oceanography Distributed Active Archive Centre RECON_SEA_LEVEL_OST_L4_V1	Atlantic - CH05 - Coasts	http://podaac.jpl.nasa.gov/datasetlist	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor height (above NAP datum) (bathymetric height) in the water body by multi-beam echo sounder EMODnet Bathymetry from EMODnet	Atlantic - CH05 - Coasts	http://www.emodnet.eu/bathymetry	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor height (above NAP datum) (bathymetric height) in the water body by multi-beam echo sounder GEBCO bathymetry data	Atlantic - CH05 - Coasts	http://www.gebco.net/data_and_products/gridded_bathymetry_data/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor height (above NAP datum) (bathymetric height) in the water body by multi-beam echo sounder Seazone Seazone Hydrospatial One Bathymetry and Elevation	Atlantic - CH05 - Coasts	http://www.seazone.com/marine-maps/product/hydrospatial-one	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Fishing by-catch Weight and number of fish and by-catch by species and year discarded European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fishing by-catch Weight and number of fish and by-catch by species and year discarded European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fishing by-catch Weight and number of fish and by-catch by species and year landed Food and Agriculture Organization of the United Nations (FAO)	Atlantic - CH06 - Fisheries Management	NA	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted

Fishing by-catch Weight and number of fish and by-catch by species and year discarded European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics International Council for the Exploration of the Seas ICES Historical landings 1903 - 1949	Atlantic - CH06 - Fisheries Management	NA	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics International Council for the Exploration of the Seas ICES Official Landings 2006-2013	Atlantic - CH06 - Fisheries Management	NA	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics International Commission for the Conservation of Atlantic Tunas (ICCAT)	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted

Fish and shellfish catch statistics Fish and shellfish catch statistics Food and Agriculture Organisation of the United Nations (FAO)	Atlantic - CH06 - Fisheries Management	NA	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Fish and shellfish catch statistics International Commission for the Conservation of Atlantic Tunas (ICCAT)	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and fisheries catch statistics Department for Environment, Food and Rural Affairs	Atlantic - CH06 - Fisheries Management	NA			otherRestrictions## #
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics International Commission for the Conservation of Atlantic Tunas (ICCAT)	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics International Council for the Exploration of the Seas ICES Historical landings 1950 - 2010	Atlantic - CH06 - Fisheries Management	NA	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Fish and shellfish catch statistics Fish and shellfish catch statistics European Commission DCF landings and discards by species	Atlantic - CH06 - Fisheries Management	NA	Information retrieved upon specific request to the data source	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
Habitat characterisation Predicted Broad Scale EUNIS Habitat Map European Marine Observation and Data Network Predicted broad-scale EUNIS habitats - Atlantic area (updated 9 December 2013)	Atlantic - CH07 - Fisheries Impact	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation EUSeaMap Predicted Habitats European Marine Observation and Data Network EUSeaMap Atlantic Habitats	Atlantic - CH07 - Fisheries Impact	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation Seabed substrate map European Marine Observation and Data Network EMODnet Seabed substrate (250k)	Atlantic - CH07 - Fisheries Impact	http://www.emodnet-geology.eu/geonetwark/srv/eng/catalog.search	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

Fish and shellfish catch statistics Fishing intensity International Council for the Exploration of the Sea Fishing Intensity in the OSPAR and HELCOM regions	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Habitat characterisation EUNIS Habitat Map European Marine Observation and Data Network Medium scale EUNIS habitat maps from surveys	Atlantic - CH07 - Fisheries Impact	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation EUNIS habitat map European Marine Observation and Data Network Broad scale EUNIS habitat maps from surveys	Atlantic - CH07 - Fisheries Impact	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation Biological samples European Marine Observation and Data Network EMODnet Biology	Atlantic - CH07 - Fisheries Impact	http://www.emodnet-biology.eu/portal/index.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation EUNIS habitat map European Marine Observation and Data Network Fine scale EUNIS habitat maps from surveys	Atlantic - CH07 - Fisheries Impact	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation Distribution of threatened and/or declining habitats Convention for the Protection of the Marine Environment of the North-East Atlantic OSPAR habitat point data	Atlantic - CH07 - Fisheries Impact	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Habitat characterisation Distribution of threatened and/or declining habitats Convention for the Protection of the Marine Environment of the North-East Atlantic OSPAR habitat polygon data	Atlantic - CH07 - Fisheries Impact	http://www.emodnet-seabedhabitats.eu/default.aspx?page=1953	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Effort data European Commission. Directorate-General for Maritime Affairs and Fisheries EU Logbook - UK	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Fish and shellfish catch statistics Effort data European Commission. Directorate-General for Maritime Affairs and Fisheries EU Logbook - Norway	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} European Marine Observation and Data Network EMODnet Bathymetry	Atlantic - CH07 - Fisheries Impact	http://portal.emodnet-bathymetry.eu/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Effort data European Commission. Directorate-General for Maritime Affairs and Fisheries EU Logbook - Ireland	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} General Bathymetric Chart of the Oceans Gridded bathymetric data	Atlantic - CH07 - Fisheries Impact	http://www.gebcos.org/data_and_products/gridded_bathymetry_data/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Fish and shellfish catch statistics Effort data European Commission. Directorate-General for Maritime Affairs and Fisheries EU Logbook - Sweden	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Fish and shellfish catch statistics Effort data European Commission. Directorate-General for Maritime Affairs and Fisheries EU Logbook - Netherlands	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented

Fish and shellfish catch statistics Effort data European Commission. Directorate-General for Maritime Affairs and Fisheries EU Logbook - Belgium	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Fish and shellfish catch statistics Effort data European Commission. Directorate-General for Maritime Affairs and Fisheries EU Logbook - Germany	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Fish and shellfish catch statistics Effort data European Commission. Directorate-General for Maritime Affairs and Fisheries EU Logbook - France	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Fish and shellfish catch statistics Fishing effort International Council for the Exploration of the Sea Fishing Effort in the OSPAR and HELCOM regions	Atlantic - CH07 - Fisheries Impact	N/A	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Salinity of the water column Salinity of the water body EMODNET - Chemistry, EMODNET Physics EMODNET - Chemistry - Salinity datasets	Atlantic - CH08 - Eutrophication	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp , http://www.emodnet-physics.eu/map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Nitrate concentration parameters in the water column Concentration of nitrate {NO3} per unit mass of the water body [unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Nitrate concentration parameters in the water column Concentration of nitrate {NO3} per unit mass of the water body [unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Concentration of phosphate {PO4} per unit mass of the water body [unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body Copernicus Marine Environment Monitoring Service Atlantic- European North West Shelf- Ocean In-Situ Near Real Time observations	Atlantic - CH08 - Eutrophication	http://marine.copernicus.eu/web/69-interactive-catalogue.php?option=com_csw&task=results&goback=1	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Particulate total and organic nitrogen concentrations in the water column Concentration of total nitrogen {total_N} per unit volume of the water body [particulate >unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Chlorophyll pigment concentrations in the water column Concentration of chlorophyll per unit volume of the water body Copernicus Marine environment monitoring service (CMEMS) Atlantic Iberian Biscay Irish Ocean- In-Situ Near Real Time Observations	Atlantic - CH08 - Eutrophication	http://marine.copernicus.eu/web/69-interactive-catalogue.php?option=com_csw&task=results&goback=1	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body Copernicus Marine environment monitoring service (CMEMS) Atlantic Iberian Biscay Irish Ocean- In-Situ Near Real Time Observations	Atlantic - CH08 - Eutrophication	http://marine.copernicus.eu/web/69-interactive-catalogue.php?option=com_csw&task=results&goback=1	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Dissolved oxygen parameters in the water column Concentration of oxygen {O2} per unit mass of the water body [dissolved plus reactive particulate phase] Copernicus Marine environment monitoring service (CMEMS)	Atlantic - CH08 - Eutrophication	http://marine.copernicus.eu/web/69-interactive-catalogue.php?option=com_csw&task=r	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

Atlantic Iberian Biscay Irish Ocean- In-Situ Near Real Time Observations		results&goback=1			
Nitrate concentration parameters in the water column Concentration of nitrate {NO3} per unit mass of the water body [unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Concentration of phosphate {PO4} per unit mass of the water body [unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Dissolved total or organic phosphorus concentration in the water column Concentration of total phosphorus {total_P CAS 7723-14-0} per unit volume of the water body [particulate >unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Dissolved oxygen parameters in the water column Concentration of oxygen {O2} per unit mass of the water body [dissolved plus reactive particulate phase] Copernicus Marine environment monitoring service (CMEMS) Atlantic- European North West Shelf- Ocean In-Situ Near Real Time observations	Atlantic - CH08 - Eutrophication	http://marine.copernicus.eu/web/69-interactive-catalogue.php?option=com_csw&task=results&goback=1	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Nitrate concentration parameters in the water column Concentration of nitrate {NO3} per unit mass of the water body [unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Nitrate concentration parameters in the water column Concentration of nitrate {NO3} per unit mass of the water body [unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body Copernicus Marine environment monitoring service (CMEMS) Atlantic Iberian Biscay Irish Ocean- In-Situ Near Real Time Observations	Atlantic - CH08 - Eutrophication	http://marine.copernicus.eu/web/69-interactive-catalogue.php?option=com_csw&task=results&goback=1	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Dissolved inorganic nitrogen concentration in the water column Concentration of nitrate+nitrite {NO3+NO2} per unit mass of the water body [unknown phase] Centre for Environment, Fisheries and Aquaculture Science, Lowestoft Laboratory CEFAS Sapphire/LIMS	Atlantic - CH08 - Eutrophication	https://www.cefas.co.uk/cefas-data-hub/	Information retrieved upon specific request to the data source	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Particulate total and organic nitrogen concentrations in the water column Concentration of total nitrogen {total_N} per unit volume of the water body [particulate >unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Particulate total and organic nitrogen concentrations in the water column Concentration of total nitrogen {total_N} per unit volume of the water body [particulate >unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted

Phosphate concentration parameters in the water column Concentration of phosphate {PO4} per unit mass of the water body [unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Dissolved oxygen parameters in the water column Concentration of oxygen {O2 CAS 7782-44-7} per unit volume of the water body [dissolved plus reactive particulate phase] International Council for the Exploration of the Sea (ICES) ICES Oceanography - CTD and Bottle	Atlantic - CH08 - Eutrophication	http://ocean.ices.dk/HydChem/HydChem.aspx?plot=yes	Information retrieved upon specific request to the data source	Online discovery and downloading services	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Concentration of phosphate {PO43- CAS 14265-44-2} per unit volume of the water body [unknown phase] EMODnet - Chemistry	Atlantic - CH08 - Eutrophication	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Nitrate concentration parameters in the water column Concentration of nitrate {NO3- CAS 14797-55-8} per unit volume of the water body [unknown phase] EMODnet - Chemistry EMODNET Chemistry - Nitrate datasets	Atlantic - CH08 - Eutrophication	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Dissolved oxygen parameters in the water column Concentration of oxygen {O2 CAS 7782-44-7} per unit volume of the water body [dissolved plus reactive particulate phase] EMODNET - Chemistry EMODNET - Chemistry - Oxygen datasets	Atlantic - CH08 - Eutrophication	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body EMODnet - Chemistry, EMODNET Physics Multiple	Atlantic - CH08 - Eutrophication	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp , http://www.emodnet-physics.eu/map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Nitrite concentration parameters in the water column Concentration of nitrite {NO2} per unit volume of the water body [dissolved plus reactive particulate phase] EMODnet - Chemistry EMODNET Chemistry - Nitrite datasets	Atlantic - CH08 - Eutrophication	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Dissolved total or organic phosphorus concentration in the water column Concentration of total phosphorus {total_P CAS 7723-14-0} per unit volume of the water body [particulate >unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body Copernicus Marine Environment Monitoring Service Atlantic- European North West Shelf- Ocean In-Situ Near Real Time observations	Atlantic - CH08 - Eutrophication	http://marine.copernicus.eu/web/69-interactive-catalogue.php?option=com_csw&task=results&goback=1	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Chlorophyll pigment concentrations in the water column Concentration of chlorophyll per unit volume of the water body Copernicus Marine Environment Monitoring Service Atlantic- European North West Shelf- Ocean In-Situ Near Real Time observations	Atlantic - CH08 - Eutrophication	http://marine.copernicus.eu/web/69-interactive-catalogue.php?option=com_csw&task=results&goback=1	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Particulate total and organic nitrogen concentrations in the water column Concentration of total nitrogen {total_N} per unit volume of the water body [particulate >unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted

Dissolved total or organic phosphorus concentration in the water column Concentration of total phosphorus {total_P CAS 7723-14-0} per unit volume of the water body [particulate >unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Chlorophyll pigment concentrations in water bodies Concentration of chlorophyll-a epimer per unit volume of the water body [particulate >unknown phase] EMODnet - Chemistry EMODNET Chemistry - Chlorophyll datasets	Atlantic - CH08 - Eutrophication	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Concentration of phosphate {PO4} per unit mass of the water body [unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Particulate total and organic nitrogen concentrations in the water column Concentration of total nitrogen {total_N} per unit volume of the water body [particulate >unknown phase] OSPAR Riverine Inputs and Direct Discharges to Convention Waters	Atlantic - CH08 - Eutrophication	http://www.ospar.org/about/publications?q=Riverine&a=&y=&s=	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body International Council for the Exploration of the Sea (ICES) ICES Oceanography - CTD and Bottle	Atlantic - CH08 - Eutrophication	http://ocean.ices.dk/HydChem/HydChem.aspx?plot=yes	Information retrieved upon specific request to the data source	Online discovery and downloading services	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body International Council for the Exploration of the Sea (ICES) ICES Oceanography - CTD and Bottle	Atlantic - CH08 - Eutrophication	http://ocean.ices.dk/HydChem/HydChem.aspx?plot=yes	Information retrieved upon specific request to the data source	Online discovery and downloading services	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Concentration of total phosphorus British Oceanographic Data Centre	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Nitrate concentration parameters in the water column Concentration of nitrate IEO/Spanish Oceanographic Institute	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body IFREMER	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Concentration of total phosphorus IEO/Spanish Oceanographic Institute	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Concentration of total phosphorus IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Concentration of suspended particulate material in the water column Turbidity Instituto Hidrografico	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Dissolved inorganic nitrogen concentration in the water column Concentration of total inorganic nitrogen [mg/l N] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the	Online downloading services	otherRestrictions## #Unrestricted

			characteristics		
Nitrate concentration parameters in the water column Concentration of nitrite IEO/Spanish Oceanographic Institute	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Ammonium and ammonia concentration parameters in water bodies Concentration of ammonia IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Salinity of the water column Salinity of the water body IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Restricted
Nitrate concentration parameters in the water column Concentration of nitrate BODC North of Ireland Joint Agency Coastal Monitoring Programme (NIJACMP)	Atlantic - CH09 - River Inputs	https://www.bodc.ac.uk/data/information_and_inventories/edmed/report/911/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Concentration of suspended particulate material in the water column Suspended particle matter [kt/a] OSPAR Commission Comprehensive Study on Riverine Inputs and Direct Discharges	Atlantic - CH09 - River Inputs	http://www.ospar.org/work-areas/hasec/chemicals/rid	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #
Fish abundance in water bodies Eel abundance International Council for the Exploration of the Sea	Atlantic - CH09 - River Inputs		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Ammonium and ammonia concentration parameters in water bodies Concentration of ammonia British Oceanographic Data Centre	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Salinity of the water column Salinity of the water body IFREMER	Atlantic - CH09 - River Inputs		Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Not or not well documented
Ammonium and ammonia concentration parameters in water bodies Concentration of ammonia IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Ammonium and ammonia concentration parameters in water bodies Concentration of ammonium IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Concentration of total phosphorus [mg/l P] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Nitrate concentration parameters in the water column Concentration of nitrate [mg/l N] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Nitrate concentration parameters in the water column Concentration of nitrate IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted

Particulate total and organic nitrogen concentrations in the water column Concentration of total organic nitrogen [mg/l N] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body IFREMER	Atlantic - CH09 - River Inputs		Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Not or not well documented
Temperature of the water column Temperature of the water body IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Restricted
Nitrate concentration parameters in the water column Total nitrogen IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Restricted
Temperature of the water column Temperature of the water body IFREMER	Atlantic - CH09 - River Inputs		Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Not or not well documented
Nitrite concentration parameters in the water column Concentration of nitrite [mg/l N] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Concentration of suspended particulate material in the water column Mean turbidity over one year BODC Decision support system for water quality management in the Tagus estuary, Portugal	Atlantic - CH09 - River Inputs	https://www.bodc.ac.uk/data/information_and_inventories/edmed/report/2163/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Phosphate concentration parameters in the water column Concentration of phosphate [kt/a] OSPAR Commission Comprehensive Study on Riverine Inputs and Direct Discharges	Atlantic - CH09 - River Inputs	http://www.ospar.org/work-areas/hasec/chemicals/rid	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Phosphate concentration parameters in the water column Concentration of total phosphorus IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Temperature of the water column Temperature of the water body IFREMER	Atlantic - CH09 - River Inputs		Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Not or not well documented
Salinity of the water column Salinity of the water body IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Ammonium concentration parameters in the water column Concentration of ammonium {NH4} per unit mass of the water body [unknown phase] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Restricted

Temperature of the water column Temperature of the water body IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Ammonium concentration parameters in the water column Concentration of ammonium [mg/l N] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Dissolved total and organic nitrogen concentrations in the water column Concentration of total nitrogen [kt/a] OSPAR Commission Comprehensive Study on Riverine Inputs and Direct Discharges	Atlantic - CH09 - River Inputs	http://www.ospar.org/work-areas/hasec/chemicals/rid	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Ammonium concentration parameters in the water column Concentration of nitrate [kt/a] OSPAR Commission Comprehensive Study on Riverine Inputs and Direct Discharges	Atlantic - CH09 - River Inputs	http://www.ospar.org/work-areas/hasec/chemicals/rid	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Phosphate concentration parameters in the water column Concentration of total phosphorus IFREMER	Atlantic - CH09 - River Inputs		Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Not or not well documented
Ammonium and ammonia concentration parameters in water bodies Concentration of ammonium British Oceanographic Data Centre	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Concentration of total oxidised nitrogen [mg/l N] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Concentration of Kjeldahl nitrogen [mg/l N] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Nitrite concentration parameters in the water column Concentration of nitrite BODC North of Ireland Joint Agency Coastal Monitoring Programme (NIJACMP)	Atlantic - CH09 - River Inputs	https://www.bodc.ac.uk/data/information_and_inventories/edmed/report/911/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Phosphate concentration parameters in the water column Concentration of orthophosphates [mg/l P] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Restricted
Concentration of suspended particulate material in the water column Mean turbidity over one year IFREMER European Directory of Marine Environmental Data Sets	Atlantic - CH09 - River Inputs		Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Not or not well documented
Particulate total and organic nitrogen concentrations in the water column Concentration of total nitrogen [mg/l N] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted

Ammonium and ammonia concentration parameters in water bodies Concentration of ammonium IFREMER	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Concentration of suspended particulate material in the water column Turbidity IEO/Spanish Oceanographic Institute	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Fish abundance in water bodies Salmon abundance Emodnet biology	Atlantic - CH09 - River Inputs				otherRestrictions## #
Fish abundance in water bodies Eel abundance International Council for the Exploration of the Sea ICES Trawl Survey Datasets (DATRAS)	Atlantic - CH09 - River Inputs		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
River flow and discharge Riverine discharge (Flow rate [1000m3/d]) OSPAR Commission Comprehensive Study on Riverine Inputs and Direct Discharges	Atlantic - CH09 - River Inputs	http://www.ospar.org/work-areas/hasec/chemicals/rid	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Ammonium and ammonia concentration parameters in water bodies Mole concentration of nitrate and nitrite [mmole/m3] IFREMER	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Fish abundance in water bodies Eel abundance International Council for the Exploration of the Sea	Atlantic - CH09 - River Inputs		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body IEO/Spanish Oceanographic Institute	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body Xunta de Galicia-Conselleria de Medio Ambiente e Desenvolvemento sostible	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body (mean over one year) [T _{avg} C] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body British Oceanographic Data Centre	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Salinity of the water column Salinity of the water body Marine Institute	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)		otherRestrictions## #Accessible under moratorium
Temperature of the water column Temperature of the water body Instituto Hidrografico	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
River flow and discharge Flow rate [1000m3/d] METOFFICE	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/			otherRestrictions## #
Fish abundance in water bodies Eel abundance International Council for the Exploration of the Sea	Atlantic - CH09 - River Inputs		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

Temperature of the water column Temperature of the water body British Oceanographic Data Centre	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Salinity of the water column Salinity of the water body Instituto Hidrografico	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body METOFFICE	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/			otherRestrictions## #
Temperature of the water column Temperature of the water body Marine Institute	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Accessible under moratorium
Salinity of the water column Salinity of the water body Oceanic and Continental Environments and Paleoenvironments	Atlantic - CH09 - River Inputs	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
River flow and discharge Riverine discharge of water Oak Ridge National Laboratory	Atlantic - CH09 - River Inputs	http://daac.ornl.gov/RIVDIS/guides/rivdis_guide.html	Cited in peer reviewed paper or grey literature but no info on how to access	Online downloading services	otherRestrictions## #Restricted
Fish abundance in water bodies Eel abundance Lochaber Fisheries Trust	Atlantic - CH09 - River Inputs	http://www.lochaberfish.org.uk/cust_images/Lochaber_eel_report_2010%5B1%5D.pdf	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
River flow and discharge Riverine discharge of water Federal Institute of Hydrology (BFG)	Atlantic - CH09 - River Inputs	http://www.bafg.de/GRDC/EN/02_srvcs/21_tmsrs/riverdischarge_node.html	Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Restricted
River flow and discharge Flow rate [1000m3/d] BODC	Atlantic - CH09 - River Inputs	https://www.bodc.ac.uk/data/information_and_inventories/edmed/report/2250/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Manual process: Order form/invoice is requested	otherRestrictions## #Not or not well documented
Fish abundance in water bodies Eel escapement Each member state	Atlantic - CH09 - River Inputs	http://ec.europa.eu/fisheries/marine_species/wild_species/eel/management_plans/index_en.htm	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Fish abundance in water bodies Salmon abundance National Biodiversity Network	Atlantic - CH09 - River Inputs				otherRestrictions## #
Fish abundance in water bodies Eel abundance Iberian Society of Ichthyology Carta Piscícola España	Atlantic - CH09 - River Inputs	www.cartapiscicolas.es	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Salinity of the water column Salinity of the water body METOFFICE	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/			otherRestrictions## #
Salinity of the water column Salinity of the water body IEO/Spanish Oceanographic Institute	Atlantic - CH09 - River Inputs	http://emodnet-chemistry.maris2.nl/v_cdi_v3/result.asp	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted

Concentration of suspended particulate material in the water column Mean annual sediment yield [t/km2/yr] FAO / FAO - Food and Agriculture Organization of the United Nations Global River Sediment Yields Database	Atlantic - CH09 - River Inputs	http://www.fao.org/nr/water/aquastat/main/index.stm		Online downloading services	otherRestrictions## #Restricted
Fish abundance in water bodies Salmon abundance International Atlantic Salmon Research Board	Atlantic - CH09 - River Inputs				otherRestrictions## #
Temperature of the water column Temperature of the water body Xunta de Galicia-Consellería de Medio Ambiente e Desenvolvemento sostible	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body BODC North of Ireland Joint Agency Coastal Monitoring Programme (NIJACMP)	Atlantic - CH09 - River Inputs	https://www.bodc.ac.uk/data/information_and_inventories/edmed/report/911/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Temperature of the water column Temperature of the water body Oceanic and Continental Environments and Paleoenvironments	Atlantic - CH09 - River Inputs	http://marine.copernicus.eu/web/69-interactive-catalogue.php	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Salinity of the water column Salinity of the water body IFREMER	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Phosphate concentration parameters in the water column Mole concentration of phosphate [mmole/m3] IFREMER	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Concentration of suspended particulate material in the water column Turbidity of the water body IFREMER	Atlantic - CH09 - River Inputs	http://www.emodnet-physics.eu/Map/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online downloading services	otherRestrictions## #Unrestricted
Salinity of the water column Salinity BODC North of Ireland Joint Agency Coastal Monitoring Programme (NIJACMP)	Atlantic - CH09 - River Inputs	https://www.bodc.ac.uk/data/information_and_inventories/edmed/report/911/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Fish abundance in water bodies Eel abundance Emodnet biology	Atlantic - CH09 - River Inputs		Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
River flow and discharge Mean long term river discharge [m3/s] European Environment Agency Water Data Centre	Atlantic - CH09 - River Inputs	http://www.eea.europa.eu/themes/water/dc	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Fish abundance in water bodies Salmon abundance Iberian Society of Ichthyology Carta Piscícola Española	Atlantic - CH09 - River Inputs	www.cartapiscicola.es			otherRestrictions## #
Sea level Sea Level anomalies MyOcean MyOcean - GLOBAL OCEAN GRIDDED SEA LEVEL ANOMALIES REFERENCE CHANGE CORRECTION	Atlantic - CH10 - Bathymetry	marine.copernicus.eu/web/69-myocean-interactive-catalogue.php?option=com_csw&view=details&product_id=SEALEVEL_GLO_REF20YTO7Y_L4_OBSERVATIONS_008_034	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium

Sea level Sea Level Trends National Oceanic and Atmospheric Administration NOAA - Sea Level Trends	Atlantic - CH10 - Bathymetry	tidesandcurrents.noaa.gov/sltrends/sltrends.html	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Sea level Height above sea level University of Hawaii UHSLC Data	Atlantic - CH10 - Bathymetry	uhslc.soest.hawaii.edu/data/download/fd	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Sea level Sea Level anomalies MyOcean MyOcean - GLOBAL OCEAN ALONG-TRACK SEA LEVEL ANOMALIES REPROCESSED (1993-ONGOING)	Atlantic - CH10 - Bathymetry	marine.copernicus.eu/web/69-myoccean-interactive-catalogue.php?option=com_csw&view=details&product_id=SEALEVEL_GLO_SLA_L3_REP_OBSE RVATIONS_008_018	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Administrative units Dredged areas SeaZone Solutions Seazone Hydrospatial One Bathymetry and Elevation	Atlantic - CH10 - Bathymetry	www.seazone.com/marine-maps/product/hydro-spatial-one	Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Accessible under moratorium
Sea level Surface elevation (UK Admiralty Chart Datum) of the water body by radar water level recorder United Kingdom Hydrographic Office Admiralty Tide Tables	Atlantic - CH10 - Bathymetry	http://www.ukho.gov.uk/easytide/EasyTide/index.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Restricted
Sea level Surface elevation annual mean (unspecified datum) of the water body Permanent Service for Mean Sea Level Permanent Service for Mean Sea Level	Atlantic - CH10 - Bathymetry	www.psmsl.org/data/obtaining/complete.php	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Sea level Height above sea level MyOcean MyOcean - Global Ocean- CORA- In-situ Observations Yearly Delivery in Delayed Mode (1950-2013)	Atlantic - CH10 - Bathymetry	marine.copernicus.eu/web/69-myoccean-interactive-catalogue.php?option=com_csw&view=details&product_id=INSITU_GLO_TS_REP_OBSERVATION_013_001_b	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Sea level Height above sea level EMODNET Secretariat EMODNET Physics portal for sea level	Atlantic - CH10 - Bathymetry	www.emodnet-physics.eu/map/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Accessible under moratorium
Sea level Height above sea level Physical Oceanography Distributed Active Archive Centre PODAAC - Reconstructed Sea Level Version 1	Atlantic - CH10 - Bathymetry	podaac.jpl.nasa.gov/dataset/RECON_SEA_LEVEL_OST_L4_V1	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Sea level Height above sea level European Commission - DG for Maritime Affairs and Fisheries European Atlas of the Seas - Sea level change	Atlantic - CH10 - Bathymetry		Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} Not applicable Global sea floor topography from satellite altimetry and ship depth soundings	Atlantic - CH10 - Bathymetry	Smith, W.H.F. and D.T. Sandwell, 1997: Global sea floor topography from satellite altimetry and ship depth soundings. Science, 277, 1956-	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted

		1962.			
Transport activity Navigation Not applicable Report of the Investigation into the Grounding of Passenger Vessel QUEEN ELIZABETH 2 on 7 August 1992	Atlantic - CH10 - Bathymetry	Marine Investigation Branch 1992, Report of the Investigation into the Grounding of Passenger Vessel QUEEN ELIZABETH 2 on 7 August 1992 (https://assets.publishing.service.gov.uk/media/54c1529bed915d1594000015/MAlBReport_QueenElizabeth2-1992.pdf)	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} Not applicable Connections Between Ocean Bottom Topography and Earth's Climate	Atlantic - CH10 - Bathymetry	Jayne, S. R., St. Laurent, L. C. and Gille, S. T. 2004. Connections between ocean bottom topography and Earth's climate, Oceanography Special Issue - Bathymetry from Space, Vol. 17, No 1/2004, doi 10.5670/oceanog.2004.68.	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Lithology Type of Sediment SeaZone Solutions Hydrosatial One - Natural and Physical Features	Atlantic - CH10 - Bathymetry	www.seazone.com/marine-maps/product/hydro-spatial-one	Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Accessible under moratorium
Bathymetry and Elevation Depth Uncertainty National Oceanic and Atmospheric Administration NOAA ESRI Grid - depth uncertainty predictions in New York offshore planning area from Biogeography Branch bathymetry model	Atlantic - CH10 - Bathymetry	catalog.data.gov/dataset/noaa-esri-grid-depth-uncertainty-predictions-in-new-york-offshore-planning-area-from-biogeogra	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Accessible under moratorium
Transport activity Port Capacity information Port Authority of New York and New Jersey Developer resources Port Authority of New York and New Jersey Developer resources	Atlantic - CH10 - Bathymetry	www.panynj.gov/pat-h/developers.html	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} SeaZone Solutions Seazone Hydrosatial One Bathymetry and Elevation	Atlantic - CH10 - Bathymetry	www.seazone.com/marine-maps/product/hydro-spatial-one	Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Accessible under moratorium
Bathymetry and Elevation Confidence in the bathymetric measurements (ENC quality flag) EMODNET EMODNET Bathymetry	Atlantic - CH10 - Bathymetry	http://portal.emodnet-bathymetry.eu/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Hazards to navigation Navigation United Kingdom Hydrographic Office British Admiralty Chart	Atlantic - CH10 - Bathymetry	http://www.ukho.gov.uk/ProductsandServices/ADCatalogue/Pages/Home.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted

Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} European Marine Observation and Data Network EMODNET Bathymetry	Atlantic - CH10 - Bathymetry	http://portal.emodnet-bathymetry.eu/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} General Bathymetric Chart of the Oceans GEBCO Bathymetry	Atlantic - CH10 - Bathymetry	www.gebco.net/data_and_products/gridded_bathymetry_data/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Transport activity Shipping routes European Commission - DG for Maritime Affairs and Fisheries European Atlas of the Seas - Motorways of the sea	Atlantic - CH10 - Bathymetry		Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} US Government Open Data Source NOAA ESRI Grid - depth uncertainty predictions in New York offshore planning area from Biogeography Branch bathymetry model	Atlantic - CH10 - Bathymetry	catalog.data.gov/dataset/noaa-esri-grid-depth-uncertainty-predictions-in-new-york-offshore-planning-area-from-biogeogra	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Accessible under moratorium
Transport activity Port Capacity Information Port Authority of New York and New Jersey Developer resources Port Authority of New York and New Jersey Developer resources	Atlantic - CH10 - Bathymetry	www.panynj.gov/pat-h/developers.html	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Transport activity Shipping passage information Anatec Ltd Anatec Automatic Identification System Tracker database	Atlantic - CH10 - Bathymetry	www.anatec.com/products/ais-tracker	Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Accessible under moratorium
Bathymetry and Elevation Standard deviation of measurements (for repeat surveys) EMODNET EMODNET Bathymetry	Atlantic - CH10 - Bathymetry	http://portal.emodnet-bathymetry.eu/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Hazards to navigation Navigation National Oceanic and Atmospheric Administration US National Oceanic and Atmospheric Administration Charts	Atlantic - CH10 - Bathymetry	http://www.charts.noaa.gov/InteractiveCatalog/nrc.shtml?rnc=13238	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Transport activity Shipping routes European Commission - DG for Maritime Affairs and Fisheries European Atlas of the Seas - Ferry Routes	Atlantic - CH10 - Bathymetry		Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Bathymetry and Elevation Sea-floor depth (below mean sea level) {bathymetric depth} Not applicable Global sea floor topography from satellite altimetry and ship depth soundings	Atlantic - CH10 - Bathymetry	Smith, W.H.F. and D.T. Sandwell, 1997: Global sea floor topography from satellite altimetry and ship depth soundings. Science, 277, 1956-1962.	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Bathymetry and Elevation Seabed topography Scripps Institution of Oceanography MEASURED AND ESTIMATED SEAFLOOR TOPOGRAPHY	Atlantic - CH10 - Bathymetry	topex.ucsd.edu/marine_topo/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Date and time Age of bathymetry measurement EMODNET EMODNET Bathymetry	Atlantic - CH10 - Bathymetry	http://portal.emodnet-bathymetry.eu/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted

Transport activity Shipping routes Anatec Ltd Anatec ShipRoutes database	Atlantic - CH10 - Bathymetry	https://www.anatec.com/products/	Use of open search engines, searching by name either the data provider or the characteristics	Manual process: Order form/invoice is requested	otherRestrictions## #Accessible under moratorium
Hazards to navigation Navigation United Kingdom Hydrographic Office British Admiralty Chart	Atlantic - CH10 - Bathymetry	http://www.ukho.gov.uk/ProductsandServices/ADCatalogue/Pages/Home.aspx	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Unrestricted
Transport activity Navigation Report of the Investigation into the Grounding of Passenger Vessel QUEEN ELIZABETH 2 on 7 August 1992 Report of the Investigation into the Grounding of Passenger Vessel QUEEN ELIZABETH 2 on 7 August 1992	Atlantic - CH10 - Bathymetry	https://assets.publishing.service.gov.uk/media/54c1529bed915d159400015/MAIBReport_QueenElizabeth2-1992.pdf	Use of open search engines, searching by name either the data provider or the characteristics	Online downloading services	otherRestrictions## #Unrestricted
Reference numbers Type of instrument used for bathymetry readings EMODNET EMODNET Bathymetry	Atlantic - CH10 - Bathymetry	http://portal.emodnet-bathymetry.eu/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Transport activity Shipping routes European Commission - DG for Maritime Affairs and Fisheries European Atlas of the Seas - Motorways of the sea	Atlantic - CH10 - Bathymetry		Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Hazards to navigation Navigation National Oceanic and Atmospheric Administration US National Oceanic and Atmospheric Administration Charts	Atlantic - CH10 - Bathymetry	http://www.charts.noaa.gov/InteractiveCatalog/nmc.shtml?rnc=13238	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Estrategias marinas, Demarcation marina Canaria : evaluacion inicial y buen estado ambiental para el descriptor 2 (especies aloctonas)	Atlantic - CH11 - Alien Species				otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Pathway/Vector of Non-Indigenous Species Introduction Coastal Research and Planning Institute AquaNIS - Information system on aquatic non-indigenous and cryptogenic species	Atlantic - CH11 - Alien Species	http://www.corpi.ku.lt/databases/index.php/aquanis/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Invasive species monitoring parameters Alien species taxonomy European Network on Invasive Alien Species European Network on Invasive Alien Species	Atlantic - CH11 - Alien Species	https://www.nobanis.org/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos Estratégia Marinha para a subdivisão dos Açores	Atlantic - CH11 - Alien Species				otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Pathway/Vector of Non-Indigenous Species Introduction GB Non-Native Species Secretariat Great Britain Non-Native Species Information Portal	Atlantic - CH11 - Alien Species	http://www.nonnativespecies.org/search.cfm	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Pathway/Vector of Non-Indigenous Species Introduction JRC - Institute for Environment and Sustainability (IES) European Alien Species Information Network	Atlantic - CH11 - Alien Species	http://easin.jrc.ec.europa.eu/Services/SpeciesSearch	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted

Invasive species monitoring parameters MSFD Descriptor 2 Strategy Estrategias marinas, Demarcation marina sudatlantica : evaluacion inicial y buen estado ambiental para el descriptor 2 (especies aloctonas)	Atlantic - CH11 - Alien Species				otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Alien species taxonomy JRC - Institute for Environment and Sustainability (IES) European Alien Species Information Network	Atlantic - CH11 - Alien Species	http://easin.jrc.ec.europa.eu/Services/SpeciesSearch	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Invasive species monitoring parameters Alien species taxonomy Coastal Research and Planning Institute AquaNIS - Information system on aquatic non-indigenous and cryptogenic species	Atlantic - CH11 - Alien Species	http://www.corpi.ku.lt/databases/index.php/aquanis/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos Estratégia Marinha para a subdivisão da Plataforma Continental Estendida	Atlantic - CH11 - Alien Species				otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Alien species taxonomy GB Non-Native Species Secretariat Great Britain Non-Native Species Information Portal	Atlantic - CH11 - Alien Species	http://www.nonnative-species.org/search.cfm	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Direction interrégionale de la mer Nord Atlantique - Manche Ouest DCSMM : sous-région marine golfe de Gascogne	Atlantic - CH11 - Alien Species	http://www.dirm.nord-atlantique-manche-ouest.developpement-durable.gouv.fr/plans-d-action-pour-le-milieu-marin-etapes-cles-r165.html			otherRestrictions## #Not or not well documented
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos Estratégia Marinha para a subdivisão do Continente	Atlantic - CH11 - Alien Species				otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Pathway/Vector of Non-Indigenous Species Introduction JRC - Institute for Environment and Sustainability (IES) European Alien Species Information Network	Atlantic - CH11 - Alien Species	http://easin.jrc.ec.europa.eu/Services/SpeciesSearch	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Restricted
Invasive species monitoring parameters Alien species taxonomy Smithsonian Environmental Research Center National Exotic Marine and Estuarine Species Information System	Atlantic - CH11 - Alien Species	http://invasions.si.edu/nemesis/index.jsp	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Year of First Record European Network on Invasive Alien Species European Network on Invasive Alien Species	Atlantic - CH11 - Alien Species	https://www.nobanis.org/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Pathway/Vector of Non-Indigenous Species Introduction European Network on Invasive Alien Species European Network on Invasive Alien Species	Atlantic - CH11 - Alien Species	https://www.nobanis.org/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Year of First Record International Council for the Exploration of the Sea (ICES) WGITMO Expert Group Reports	Atlantic - CH11 - Alien Species	http://www.ices.dk/publications/library/Pages/default.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented

Invasive species monitoring parameters MSFD Descriptor 2 Strategy Direction interrégionale de la mer Manche est - mer du Nord DCSMM : sous-région marine Manche - mer du Nord	Atlantic - CH11 - Alien Species	http://www.dirm-memn.developpement-durable.gouv.fr/plan-d-action-pour-le-milieu-marin-pamm-r10.html			otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Pathway/Vector of Non-Indigenous Species Introduction International Council for the Exploration of the Sea (ICES) WGITMO Expert Group Reports	Atlantic - CH11 - Alien Species	http://www.ices.dk/publications/library/Pages/default.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Alien species taxonomy Center for Ecology and Hydrology Delivering Alien Invasive Species Inventories for Europe	Atlantic - CH11 - Alien Species	http://www.europealiens.org/speciesSearch.do	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Direção-Geral de Recursos Naturais, Segurança e Serviços Marítimos Estratégia Marinha para a subdivisão da Madeira	Atlantic - CH11 - Alien Species				otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Alien species taxonomy International Council for the Exploration of the Sea (ICES) WGITMO Expert Group Reports	Atlantic - CH11 - Alien Species	http://www.ices.dk/publications/library/Pages/default.aspx	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Department for Environment, Food and Rural Affairs UK Initial Assessment and Good Environmental Status	Atlantic - CH11 - Alien Species				otherRestrictions## #Not or not well documented
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Estrategias marinas, Demarcación marina Nordatlántica : Evaluación inicial, buen estado ambiental y objetivos ambientales	Atlantic - CH11 - Alien Species				otherRestrictions## #Not or not well documented
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Estrategias marinas, Demarcación marina Canaria : evaluación inicial y buen estado ambiental para el descriptor 2 (especies aloctonas)	Atlantic - CH11 - Alien Species				otherRestrictions## #Not or not well documented
Invasive species monitoring parameters MSFD Descriptor 2 Strategy Direction interrégionale de la mer Nord Atlantique - Manche Ouest DCSMM : sous-région marine mers celtiques	Atlantic - CH11 - Alien Species	http://www.dirm.nord-atlantique-manche-ouest.developpement-durable.gouv.fr/plans-d-action-pour-le-milieu-marin-etapes-cles-r165.html			otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Year of First Record GB Non-Native Species Secretariat Great Britain Non-Native Species Information Portal	Atlantic - CH11 - Alien Species	http://www.nonnative-species.org/search.cfm	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Year of Introduction of non-indigenous species (including citation) Coastal Research and Planning Institute AquaNIS - Information system on aquatic non-indigenous and cryptogenic species	Atlantic - CH11 - Alien Species	http://www.corpi.ku.lt/databases/index.php/aquanis/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery and downloading services	otherRestrictions## #Unrestricted
Invasive species monitoring parameters Alien species taxonomy Centre for Agriculture and Biosciences International Invasive Species Compendium	Atlantic - CH11 - Alien Species	http://www.europealiens.org/speciesSearch.do	Use of open search engines, searching by name either the data provider or the	Online discovery and downloading services	otherRestrictions## #Unrestricted

			characteristics		
Invasive species monitoring parameters Introduced Marine Species Taxonomy Flanders Marine Institute World Register of Introduced Marine Species (WRIMS)	Atlantic - CH11 - Alien Species	http://www.marinespecies.org/introduced/	Use of open search engines, searching by name either the data provider or the characteristics	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Alien Species Taxonomy Basque Government - Eusko Jauriaritza BIZKAIA: PROGRAMA DE VIGILANCIA Y CONTROL DE LA INTRODUCCIÓN DE ESPECIES INVASORAS EN LOS ECOSISTEMAS LITORALES DE LA COSTA	Atlantic - CH11 - Alien Species		Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Alien Species Taxonomy Basque Government - Eusko Jauriaritza BIZKAIA: PROGRAMA DE VIGILANCIA Y CONTROL DE LA INTRODUCCIÓN DE ESPECIES INVASORAS EN LOS ECOSISTEMAS LITORALES DE LA COSTA	Atlantic - CH11 - Alien Species		Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Invasive species monitoring parameters Alien Species Catalogue Hellenic Centre for Marine Research European Seas Keystone Species Catalogue	Atlantic - CH11 - Alien Species	http://www.devotes-project.eu/wp-content/uploads/2014/07/DEVOTES-D6-1-Keystones.pdf	Cited in peer reviewed paper or grey literature but no info on how to access	No information was found on data delivery mechanisms	otherRestrictions## #Not or not well documented
Sedimentation flux quantification in the water column Sedimentation mass flux standard deviation of suspended particulate material (SPM) per unit time per unit area of the water body by sediment trapping and gravimetry Estuarine Suspended Sediment Loads and Sediment Budgets in Tributaries of Chesapeake Bay	BlackSea - CH05 - Coasts	http://ccrm.vims.edu/publications/projreps/Sediment_Loads_Budget_Final_Report.pdf			otherRestrictions## #
Bathymetry and Elevation Sea-floor height (above NAP datum) {bathymetric height} in the water body by echo sounder GEBCO GEBCO_2014 Grid	MedSea - CH01 - Windfarm Siting##Atlantic - CH10 - Bathymetry	www.gebco.net/data_and_products/gridded_bathymetry_data/	Use of open search engines, searching by name either the data provider or the characteristics	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Temperature of the water body Istituto Nazionale di Geofisica e Vulcanologia ICGO ING V, Sede di Bologna Mediterranean Sea Physics Reanalysis (1987-2011)	MedSea - CH04 - Climate and Coastal Protection	http://marine.copernicus.eu/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
Seal abundance Abundance of Threatened and/or Declining Seal Species European Marine Observation and Data Network - Biology Lot II Halichoerus grypus		http://www.emodnet-biology.eu/portal/index.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted
					###otherRestrictions#####
					###otherRestrictions#####
Seal abundance Abundance of Threatened and/or Declining Seal Species European Marine Observation and Data Network - Biology Lot II Phoca vitulina		http://www.emodnet-biology.eu/portal/index.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery + downloading + viewing services (Advanced services)	otherRestrictions## #Unrestricted

AquaNIS - Information system on aquatic non-indigenous and cryptogenic species					###otherRestrictions#####Unrestricted
Seal reproduction Reproduction Areas of Threatened and/or Declining Seal Species Department for Environment, Food and Rural Affairs Grey Seal Breeding Colonies (GB)		http://magic.defra.gov.uk/MagicMap.aspx	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Restricted
Seal abundance Abundance of Threatened and/or Declining Seal Species World Conservation Monitoring Centre Global Distribution of Grey Seals		http://data.unep-wcmc.org/	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #Unrestricted
Temperature of the water column Temperature of the water body MERCATOR OCEAN		http://marine.copernicus.eu/web/69-interactive-catalogue.php	Search via reference catalogue (e.g. MyOcean, GEOSS Geoportal)	Online discovery and downloading services	otherRestrictions## #
Emodnet Checkpoint template for data product specification					
Horizontal velocity of the water column (currents) Eastward current velocity in the water body					otherRestrictions## #