

BASEMAPS GUIDE

DETAILED INSTRUCTIONS ON HOW TO USE BASEMAPS



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What is BASEMAPS?

basemaps.helcom.fi

BASEMAPS is a map service to access Baltic Sea maritime spatial planning (MSP) data from the original source where it is stored.

The story of BASEMAPS (BALTic SEa MAP Service) dates back to 2012 when a project called BaltSeaPlan recommended building a tool to access Baltic Sea decentralized MSP data based on Marine Spatial Data Infrastructure (MSDI).

Planners realized there was a need to work with transboundary and up-to-date data that was reliable to make their own national MSP plans.

Working with centralized database solutions was (and still probably is) the best option to get a large amount of harmonized data from data providers.

However, these centralized databases do not guarantee that the data is up to date. Planners needed a solution to get data published and maintained by the original official source.

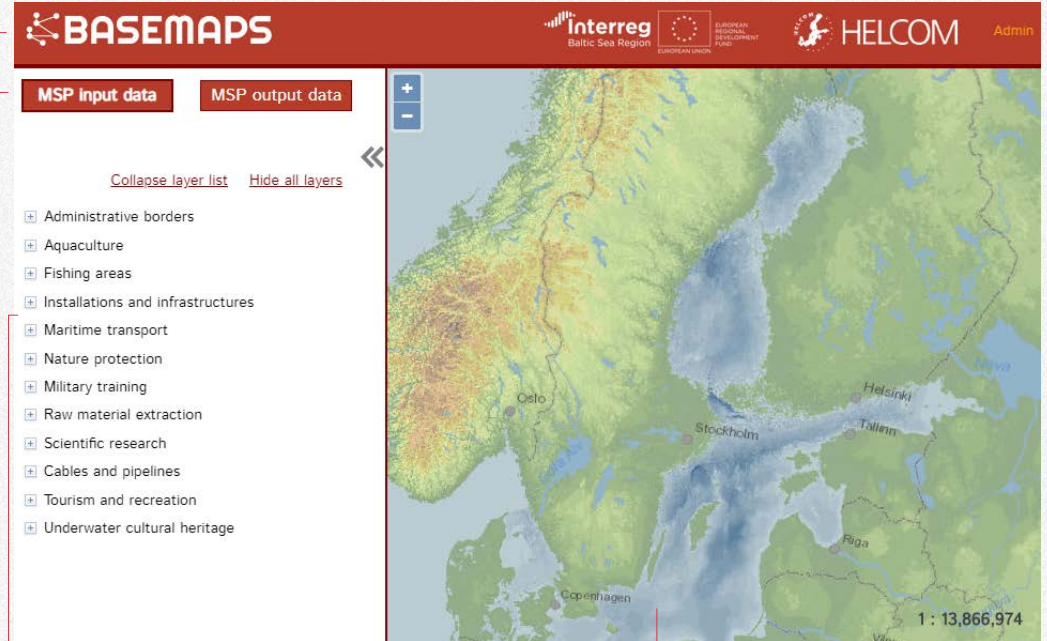
That solution is called BASEMAPS.

BASEMAPS allows users to view and download data/metadata published by national data providers through [OGC](#) open geospatial standards—[WMS](#) and [WFS](#). It is also possible to access downloadable services and ArcGIS REST Map layers.

It is aimed for planners, data providers and authorities dealing with maritime spatial planning in the Baltic Sea.

HELCOM led the development of BASEMAPS under the Interreg funded Baltic LINes project (2016-2019). This user guide is an output of the Interreg funded project platform Capacity4MSP (2019-2021) and was prepared by HELCOM.

BASEMAPS structure



BASEMAPS is organized in four parts:

1. The banner
2. The input / output data buttons
3. The layer list
4. The map viewer

The banner



- BASEMAPS: link to the map service (basemaps.helcom.fi). It is used to refresh the window if needed.
- Interreg: the funding programme. The link directs to the official Baltic LINes page hosted by VASAB.
- HELCOM: official home page of the Helsinki Commission that designed, developed and hosts BASEMAPS.
- Admin: Password protected administration panel where data providers can add and edit services. The administration rights are given by HELCOM.

Input and output data

MSP input data

Input and output data are the terms used to differentiate between data to create plans and the plans

MSP input data opens by default and includes various thematic data layers which have been considered relevant for MSP purposes.

The section contains both national data harvested from national data providers (when available) as well as centralized dataset provided by HELCOM.

MSP planners can use input data if they want to access transboundary data.

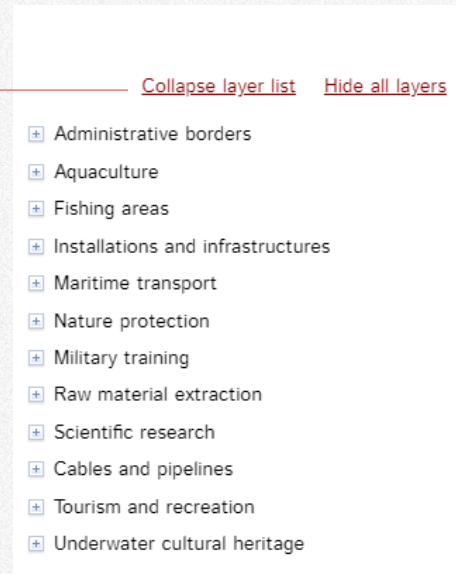
MSP output data

MSP output data, on the other hand, contains national MSP plans harmonized according to HELCOM-VASAB guidelines on transboundary MSP output data structure.

These plans were created based on various input data. MSP planners can use output data to check what other countries in the Baltic Sea have already planned.

The MSP output data section is still under development.

Layer list

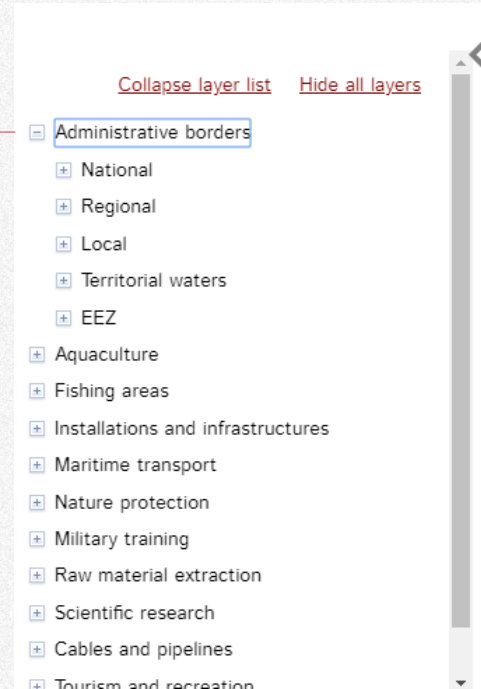



All services are stored in the layer list. The layer list is divided in thematic categories that are relevant for MSP. There are a couple of buttons to help users navigate through all categories:

Collapse layer list: it closes all the opened categories. This is useful if users have opened a lot of them and want to return to the original state.

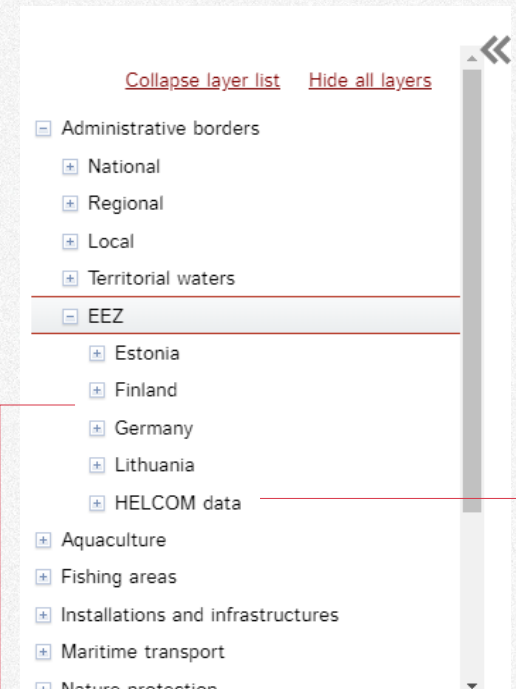
Hide all layers: it hides all the layers that users have activated. It is useful if they have activated many layers and want to see an empty map.

Categories



A tree is opened by clicking on the cross button 

Most root categories, the ones users see when BASEMAPS is opened, contain subcategories as in the case of Administrative borders.



When users open those subcategories they see the countries that have provided data to BASEMAPS.

HELCOM data contains links to services from its centralized and harmonized database. It is useful in case there are gaps in the data.

Types or services

The screenshot displays the BASEMAPS web application. The top navigation bar includes logos for Interreg Baltic Sea Region, European Regional Development Fund, and HELCOM. The main interface is divided into three sections: a left-hand layer list, a central map, and a right-hand metadata panel. The layer list shows 'Administrative borders' and 'Territorial waters' categories. Under 'Territorial waters', the 'Territorial Sea' layer is selected and marked with a 'WMS' icon. The metadata panel provides details for this layer, including its WMS URL and description. The map shows a green territorial sea boundary around a landmass in the Baltic Sea.

There can be up to four types of services available in BASEMAPS. A small icon is displayed besides the layer name: WMS, WFS, AGS or DLD.

To view a layer users click on the WMS checkbox which also opens the metadata window.

- **WMS (Web Map Service):** it shows the georeferenced image published through a standard OGC WMS

- **WFS (Web Feature Services):** These services provide data in GML format.
- **AGS (ArcGIS REST services):** data providers might want to publish ArcGIS Rest services instead of or in addition to WMS
- **DLD (Downloadable services):** there is also the option for data providers to publish download services instead of WFS

Metadata

Metadata information comes from GetCapabilities and contains the following information:

| Administrative borders -> Territorial waters -> Estonia -> Territorial Sea | |
|---|---|
| Resource type: | WMS layer |
| Host organization: | Estonian Land Board |
| Access constraints: | None |
| Fees: | None |
| WMS url: | http://inspire.maaamet.ee/arcgis/rest/services/public/au/MapServer/exprts/InspireView/service |
| WMS layer name: | AU.TerritorialSea |
| WMS layer title: | Territorial Sea |
| WMS layer description: | Territorial sea data originates from Estonian Maritime Administration. |
| Language support: | est,eng |
| Identification support: | true |
| Max display scale: | No max display scale limit or information about it is not provided |
| Min display scale: | No min display scale limit or information about it is not provided |
| Metadata: | |
| Metadata format: | XML |
| URL: | http://inspire.maaamet.ee/geoportal/csw/disc/overly?service=CSW&version=2.0.2&request=GetRecordByld&outputschema=http://www.isotc211.org/2005/gmd&elementsetname=full&id=%7B051244FB-709F-4268-B565-7A0A10B0F633%7D |

Type of service (WMS, WFS, AGS or DLD)

Data provider

Any kind of rights restrictions

Possible fees to access data

Link to the layer's link. To view GetCapabilities in browser users must paste the URL and add this string at the end: `?request=GetCapabilities&service=WMS`

Name of layer as the data provider has published it

Title of layer

A short description of layer

All languages supported by the service

(Only for WMS) If `true` users can click on the map and get information

(Only for WMS) Above this scale the layer will not be displayed

(Only for WMS) Below this scale the layer will not be displayed

Link to metadata. It may come from GetCapabilities or be provided by data provider

Tag translation

The screenshot shows the BASEMAPS web application interface. The top navigation bar includes logos for Interreg Baltic Sea Region, the European Union, HELCOM, and an Admin link. The main content area is divided into three sections: a left sidebar for layer management, a central map, and a right sidebar for metadata.

MSP input data | **MSP output data**

[Collapse layer list](#) | [Hide all layers](#)

Administrative borders
 Aquaculture
 Fishing areas
 Installations and infrastructures
 Maritime transport
 Nature protection
 Denmark
 Finland
 Natura2000 Erityinen suojelualue (SPA) WMS
 Erityisten suojelutoimien alue (SAC) WMS
 Ehdotus erityisten suojelutoimien alueeksi (SCI) WMS
 Ehdotus erityiseksi suojelualueeksi (SPA) WMS
 Erityisten suojelutoimien alue (SAC), viivamainen WMS
 Latvia
 Poland
 Sweden

The central map displays a topographic view of Finland with Natura 2000 Special Protection Areas (SPA) overlaid as dark grey polygons. A red box highlights a specific area on the map, which is magnified in the metadata window.

Nature protection -> Natura 2000 -> Finland -> Natura2000 Erityinen suojelualue (SPA)

Resource type: WMS layer
Host organization: Suomen ympäristökeskus
Access constraints: [License](#)
Fees: [Free](#)
WMS url: http://paikkatieto.ymparisto.fi/arcgis/services/INSPIRE/SYKE_SuojellutAlueet/MapServer/WmsServer
WMS layer name: PS.ProtectedSitesSpecialProtectionArea
WMS layer title: [Natura2000 Special Protection Area \(SPA\)](#)
WMS layer description: [Natura2000 Special Protection Area \(SPA\)](#)

Language support: [Original text:](#)
Identification support: [Natura2000 Erityinen suojelualue \(SPA\)](#)
Max display scale: [Translated by Microsoft](#)
Min display scale: [Translated by Microsoft](#)

Metadata:

1 : 13,866,974

Some data providers publish data in their original language which makes it difficult to understand for users from other countries.

Therefore, some tags in the metadata are automatically translated by BASEMAPS. They are displayed in [underlined blue text](#):

- Access constraints
- Fees

- WMS layer name
- WMS layer description

When the user hovers over the translated tag a small window shows the original text.

Legend (only for WMS)

The screenshot displays the BASEMAPS web application interface. The top navigation bar includes logos for Interreg Baltic Sea Region, HELCOM, and an Admin link. The main content area is divided into three sections:

- Left Panel (Legend):** A tree view of layers under 'MSP input data'. The 'Dredging' category is expanded, showing 'Lithuania' and 'Grunto_savarta' (checked and marked as WMS). Other categories include Shipping traffic density, IMO routes, Restricted areas for shipping, Ports, Fairways, Ferry lines / routes / Motorways of the seas, Roadsteads / port raid protection zones, Anchorages, HELCOM data, Dumping, Nature protection, Military training, and Raw material extraction.
- Center Panel (Map):** A map of the Baltic Sea region showing shipping routes and coastal features. A scale of 1:866,686 is visible in the bottom right corner.
- Right Panel (Metadata):** A panel titled 'Maritime transport -> Dredging -> Lithuania -> Grunto_savarta'. It displays the following information:

| | |
|-------------------------|--|
| Resource type: | WMS layer |
| Host organization: | No information |
| WMS url: | https://www.geoportal.lt/arcgis/services/geoportal_public/Corps/MapServer/WMS/Server |
| WMS layer name: | 9 |
| WMS layer title: | Grunto_savarta |
| Language support: | No information |
| Identification support: | true |
| Max display scale: | No max display scale limit or information about it is not provided |
| Min display scale: | No min display scale limit or information about it is not provided |
| Metadata: | No metadata provided |

The legend of the layer is available only for WMS services and it is below the layer name. It comes from the provided GetCapabilities.

Identification (only for WMS)

The screenshot shows the BASEMAPS web application interface. At the top, there are logos for Interreg Baltic Sea Region, European Union, and HELCOM. Below the logos, there are two tabs: "MSP input data" and "MSP output data". The main area is a map of the Baltic Sea region, showing various geographical features and administrative boundaries. A pop-up window titled "PS N2K Habitatdirektivet" is open over the map, displaying the following attributes:

| | |
|--------------|---|
| KOMMUN: | Mörbylånga, Gotland |
| AREA_HA: | 1051111,2 |
| OMRADESNAMN: | Hoburgs bank och Midsjöbankarna |
| SPA_DATUM: | 201612 |
| OMRADESKOD: | SE0330308 |
| ARTER: | Alfågel, Ejder, Tobisgrissla, Tumlare Hoburgs bank och Midsjöbankarna ligger centralt i egentliga Östersjön och omfattar |

The map also shows a scale of 1 : 6,933,487 in the bottom right corner.

Users can click on the displayed layer to see its attributes.

A pop-up window will display all features' attributes. When the list of attributes is long users can scroll it down using the scroll bar.

The pop-up window can be closed either by clicking on the cross on the top-right corner or clicking somewhere else on the screen.

The displayed information may be in national language.

The screenshot shows the BASEMAPS web interface. At the top, there are logos for Interreg Baltic Sea Region, HELCOM, and Admin. Below the logos are two tabs: 'MSP input data' and 'MSP output data'. The main area is a map of the Baltic Sea region. On the left, there is a layer list with categories: Administrative borders, Territorial waters, and Local. Under 'Territorial waters', the 'mu:MaritimeBoundary' layer is selected and has a 'WFS' icon next to it. On the right, a metadata window is open for the 'mu:MaritimeBoundary' layer. The metadata includes: Resource type: WFS feature type; Host organization: Estonian Land Board; Access constraints: None; Fees: None; WFS url: http://inspire.maaamet.ee/arcgis/rest/services/public/au/MapServer/exts/InspireFeatureDownload/service; WFS feature type name: mu:MaritimeBoundary; WFS feature type title: mu:MaritimeBoundary; WFS feature type description: Estonian Land Board INSPIRE Download Service that provides Maritime Zones and Administrative Units.; Language support: est,eng,est; Metadata format: XML. A red line connects the 'WFS' icon in the layer list to the 'Get features of WFS feature type' link in the metadata window.

To get the data from WFS services users click on the checkbox corresponding to that service.

No layer is displayed. Instead, users get data by clicking on the link in the metadata window “Get features of WFS feature type”

The metadata is similar to WMS. Only the fields about identification and scale are missing.

Downloading can be time-consuming depending on the size of the layer and the internet connection.

ArcGIS REST services

BASEMAPS Interreg Baltic Sea Region HELCOM Admin

MSP input data MSP output data

- Administrative borders
 - National
 - Regional
 - Denmark
 - Estonia
 - Finland
 - Germany
 - Lithuania
 - HELCOM data
 - Administrative boundaries **AGS**
 - Administrative boundaries **DLO**
 - Administrative boundaries **WMS**
 - Local
 - Territorial waters
 - EEZ
 - Aquaculture
 - Fishing areas
 - Installations and infrastructures
 - Maritime transport
 - Nature protection
 - Military training
 - Raw material extraction

Administrative borders -> Regional -> HELCOM data -> Administrative boundaries

Resource type: ArcGIS REST MapServer layer

ArcGIS MapServer url: <https://maps.helcom.fi/arcgis/rest/services/MADS/Background/MapServer/2>

Metadata:

Metadata format: HTML

URL: <http://metadata.helcom.fi/geonetwork/srv/en/catalog/search#metadata/b58b0b56-1a98-41d9-9bf4-5dc76f5069d3>

1 : 13.866/974

BASEMAPS allows users to view ArcGIS REST mapserver layers. Data providers might want to publish this type of services if WMS services are not available.

The metadata contains:

- Resource type: to check that it's a REST service.
- ArcGIS MapServer url: link to the REST url

- Metadata format: the format can be HTML or XLM
- URL: link to metadata

Download services

The screenshot shows the BASEMAPS web application. The top navigation bar includes logos for Interreg Baltic Sea Region, HELCOM, and Admin. The left sidebar contains a layer list under 'MSP input data' and 'MSP output data'. The 'Administrative borders' section is expanded to show 'Regional' data, with 'Administrative boundaries' selected. The main map area displays a topographic map of the Baltic Sea region with administrative boundaries overlaid. The right-hand panel shows the metadata for the selected layer, including a 'Downloadable resource' section with a REST URL and a 'Metadata' section with an HTML URL.

Administrative borders -> Regional -> HELCOM data -> Administrative boundaries

Download this resource

Resource type: Downloadable resource

Downloadable resource URL: http://metadata.helcom.fi/geonetwork/srv/eng/resources.get?uuid=b58b0b56-1a98-41d9-9bf4-5dc76f5069d3&fname=Administrative_borders_1.zip&access=public

Metadata:

Metadata format: HTML

URL: http://metadata.helcom.fi/geonetwork/srv/eng/catalog_search#metadata/b58b0b56-1a98-41d9-9bf4-5dc76f5069d3

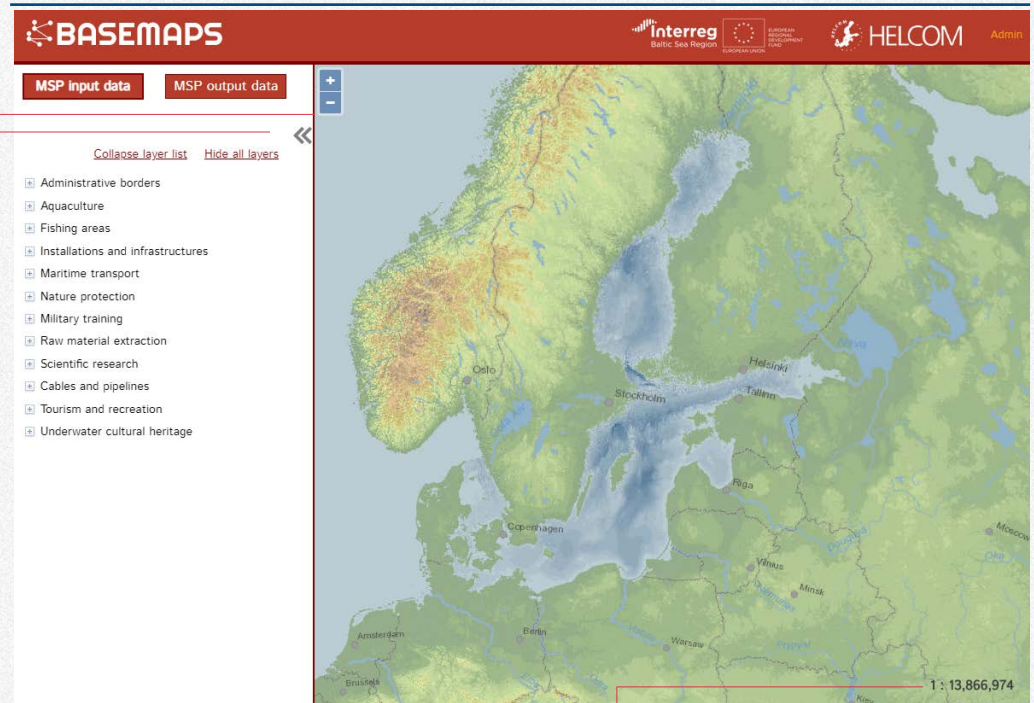
Data providers might want to publish download services in addition to or instead of WFS. Download services contain a link to the layer usually as zip file.

BASEMAPS does not display the layer when clicking on the checkbox. Instead, a link is provided to download the file.

The metadata contains:

- Downloadable resource url: link to the REST url
- Metadata format: the format can be HTML or XLM
- URL: link to metadata
- Resource type: to check that it's a REST service.

Map viewer



The map viewer shows a map in Lambert projection where all layers are displayed.

There are three elements to help users view data:

- Collapse tree to close the tree categories and make the map bigger.
- Zoom buttons to zoom in and out. Also the wheel mouse is supported.

- Scale: some layers have scale restrictions so users can check here and in the layer's metadata in case they are not displayed.

The maximum scale is almost 1:450.000.000 and the minimum 1:2

Frequently Asked Questions

Why are there empty categories?

Some categories are empty because no country has provided data.

Why is the layer not showing?

Check that you have ticked the WMS or ArcGIS REST services checkbox as they are the only services that are displayed. Also, be sure that the layer does not have any maximum or minimum display scale (check Max and Min display scale in metadata). If so, zoom in or out accordingly with the help of the scale at the bottom-right map corner.

Some tags are weirdly translated, why?

BASEMAPS uses a translator service that can occasionally output a not so accurate translation.

Why is the layer name not in English?

All services in BASEMAPS come from national data providers who may want to publish data in their language. BASEMAPS only translates some tags in the metadata (see page 11)

What kind of services are available in BASEMAPS?

BASEMAPS can display WMS and ArcGIS REST services. Datasets can be downloaded thorough WFS and download services.

Contact information and credits

For support about BASEMAPS functionality and getting users rights: data@helcom.fi

For support about national data contact the national provider whose contact information can be found in the host organization tag in the metadata.

BASEMAPS has been developed by HELCOM during the Interreg funded Baltic LINES project (2016-2019). This user guide is an output of the Interreg funded project platform Capacity4MSP (2019-2021) and was prepared by HELCOM.

The code is open source and is available in [GitHub](#).