



Document title	Land-based pollution sources in the HELCOM Map and Data service
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Background

All spatial datasets used and produced by HELCOM in its assessments can be accessed and downloaded from HELCOM Metadata catalogue (<http://metadata.helcom.fi>) and viewed in HELCOM Map and Data service (<http://maps.helcom.fi>).

Spatial parameters of the data reported to the PLC water database were elaborated by PLC-6 and utilized for visualization of various aspects of spatial distribution of nutrient loads on the Baltic Sea. The spatial datasets are available at HELCOM map and data service. The Secretariat took responsibility for maintaining of the spatial data in the up-to-date status. An update of the spatial information is planned in the frame of PLC-7 project. The data will be updated as they are at 2017, which was agreed as the reference year for the PLC-7 assessment.

This document contains a description of the HELCOM Map and Data service and structure of its section devoted to the land-based pollution sources (Table 1). Table 1 of the document contains also links to all maps which have already been developed for illustration of PLC-6 products endorsed for publication. Links to the maps used in the Assessment of inputs of hazardous substances are also added to the table. Nonetheless, a number of maps are still not designed.

Action requested

The Meeting is invited to consider maps illustrating land-based pollution sources of the Baltic Sea and agree on the procedure to update spatial data in line with annual and periodic reporting in the frame of PLC-7 project.

Land-based pollution sources in the HELCOM Map and Data service

All spatial datasets used and produced by HELCOM in its assessments can be accessed and downloaded from HELCOM Metadata catalogue (<http://metadata.helcom.fi>) and viewed in HELCOM Map and Data service (<http://maps.helcom.fi>).

HELCOM Map and Data service (MADS) is a graphical user interface containing a table of contents of all spatial datasets made available by HELCOM and relevant to HELCOM work. The service contains many functionalities that could be used when viewing the datasets, e.g. identify and attribute table functionalities to display information related to objects visualized on the map.

The datasets are grouped to following services, which contain a number of map layers grouped in to categories (group layers):

- **Status assessments:** Integrated assessment results, core indicator result maps and underlying datasets
- **Monitoring:** Assessment units according to HELCOM Monitoring and Assessment Strategy and monitoring stations used in HELCOM Monitoring manual
- **Pressures and human activities:** Land-based pollution as well as various human activities datasets and aggregated pressure layers used in Baltic Sea Impact and Pressure Index (BSPI and BSII).
- **Biodiversity:** Biodiversity related datasets such as Ecosystem component maps used in Baltic Sea Impact and Pressure Index (BSPI and BSII), HELCOM RED LIST species/biotope distribution maps as well as other biota related datasets.
- **Shipping:** Maritime activities related datasets, including data from HELCOM Maritime assessment such as AIS density maps by ship type.
- **Background:** Background datasets such as rivers, lakes, EEZ as well as Maritime Spatial Planning areas.

Inside the category “Pressures and human activities”, all the data related to the Baltic Sea Pollution Compilation can be accessed in the subgroup Land-based pollution, as observed in Figure 1.

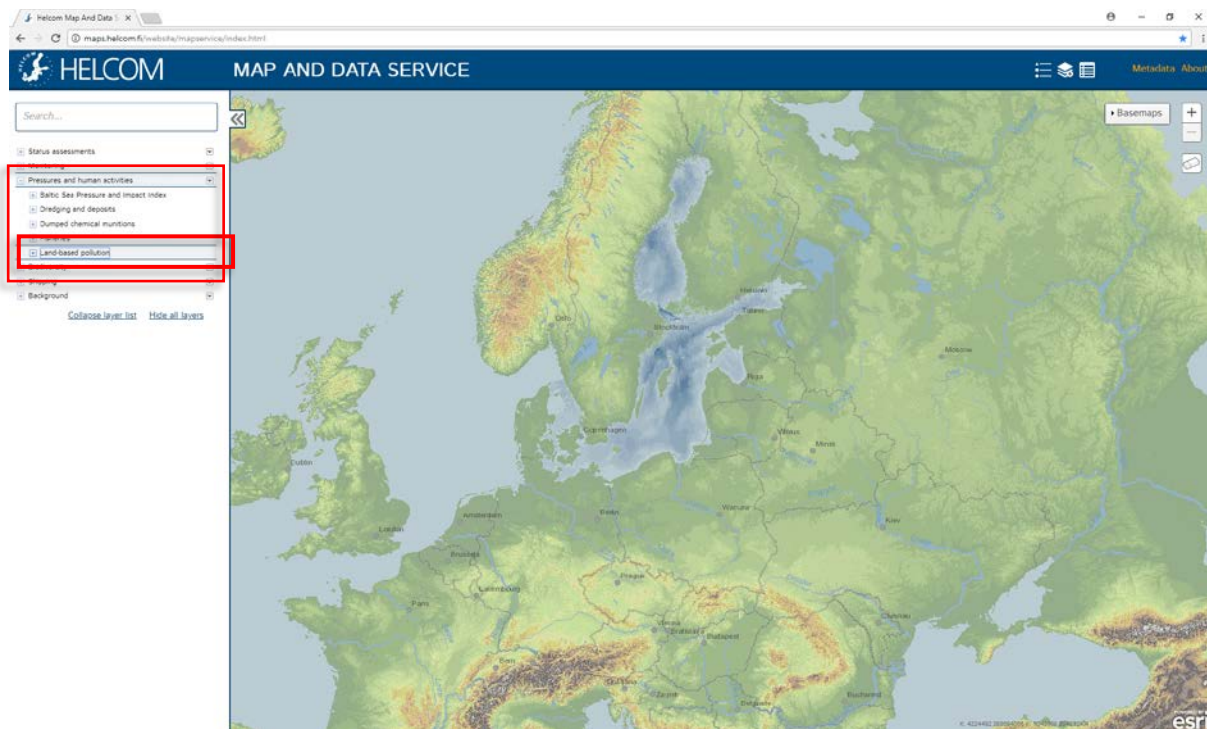


Figure 1: Accessing PLC data in HELCOM Map and Data service.

Using MADS is very intuitive. By clicking in the data intended to be visualized in the layer list, the selected map layer will be drawn in the map viewer, as observed in Figure 2.

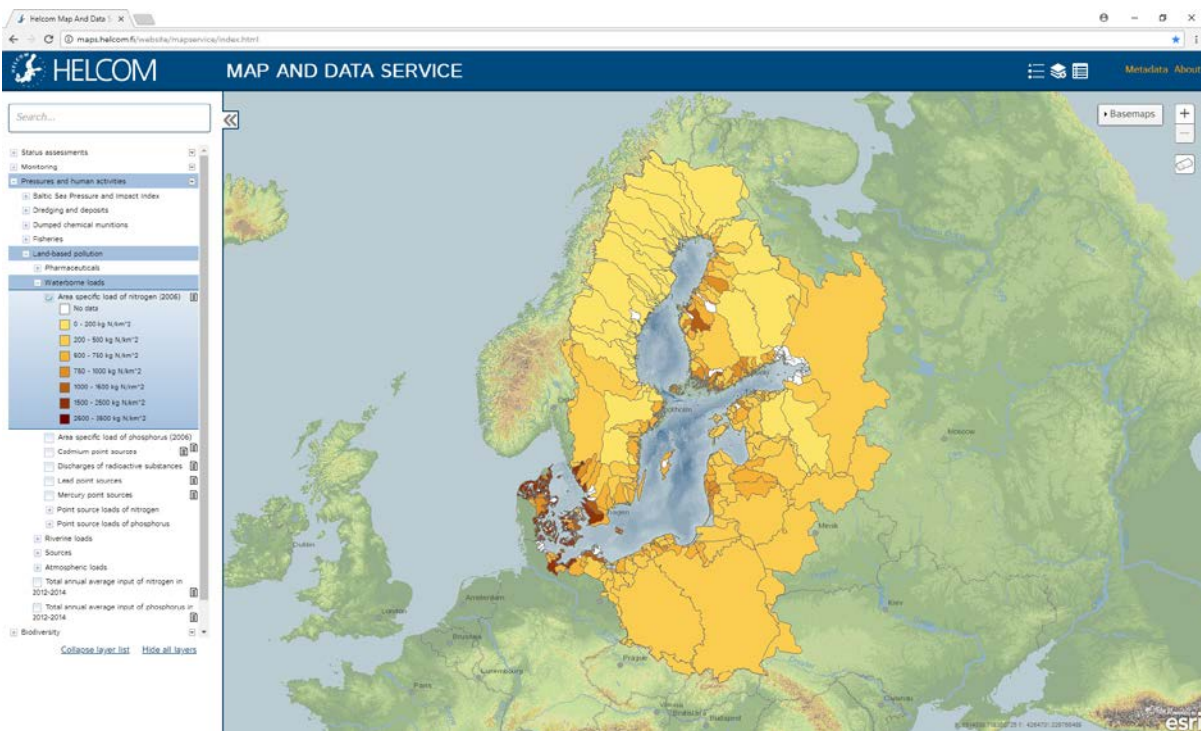


Figure 2: Visualization of map in MADS.

Zoom in and zoom out are done by scrolling the mouse or clicking + / - buttons on the top right corner. By clicking a spatial object in the map, the attribute table information related to the object will appear, as observed in Figure 3.

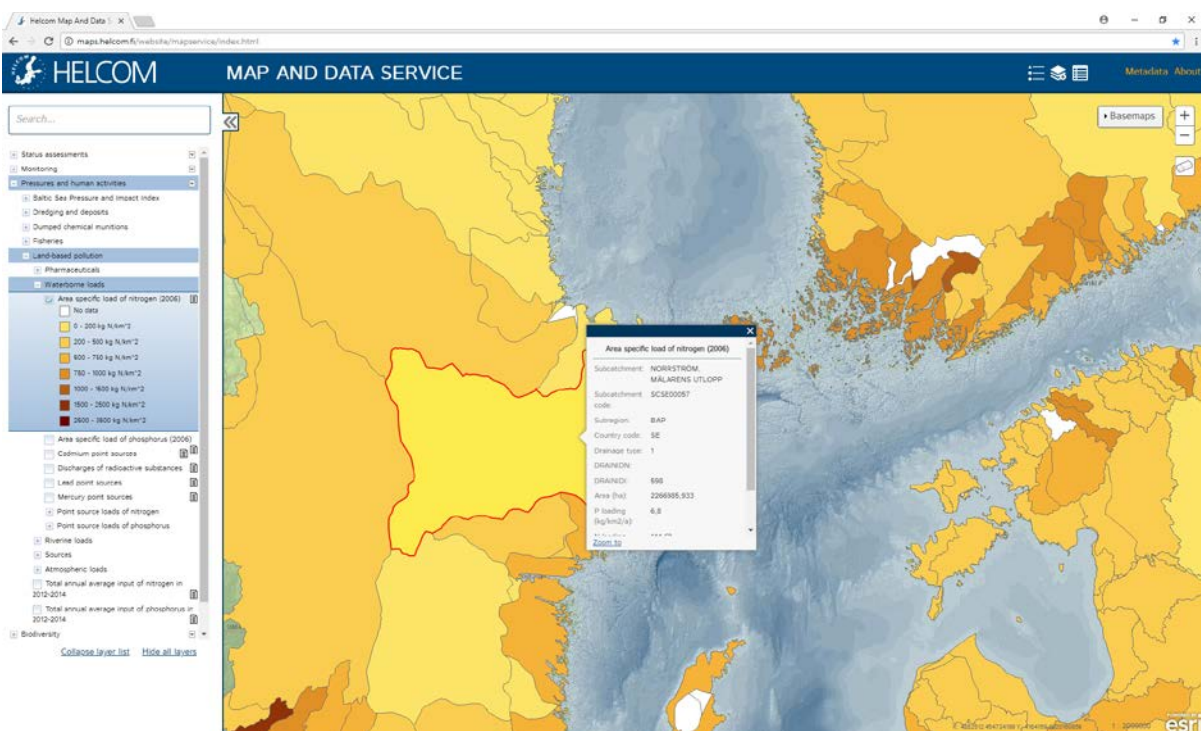


Figure 3: Attributes for selected spatial object in MADS.

All HELCOM datasets are also listed in HELCOM Metadata catalogue, which contains INSPIRE compliant metadata record of the dataset, download functionality (zip package containing shapefile / TIFF) and URL to view the dataset in HELCOM Map and Data service.

The metadata cards can be accessed by clicking in the metadata symbol in the table, as observed in Figure 4.

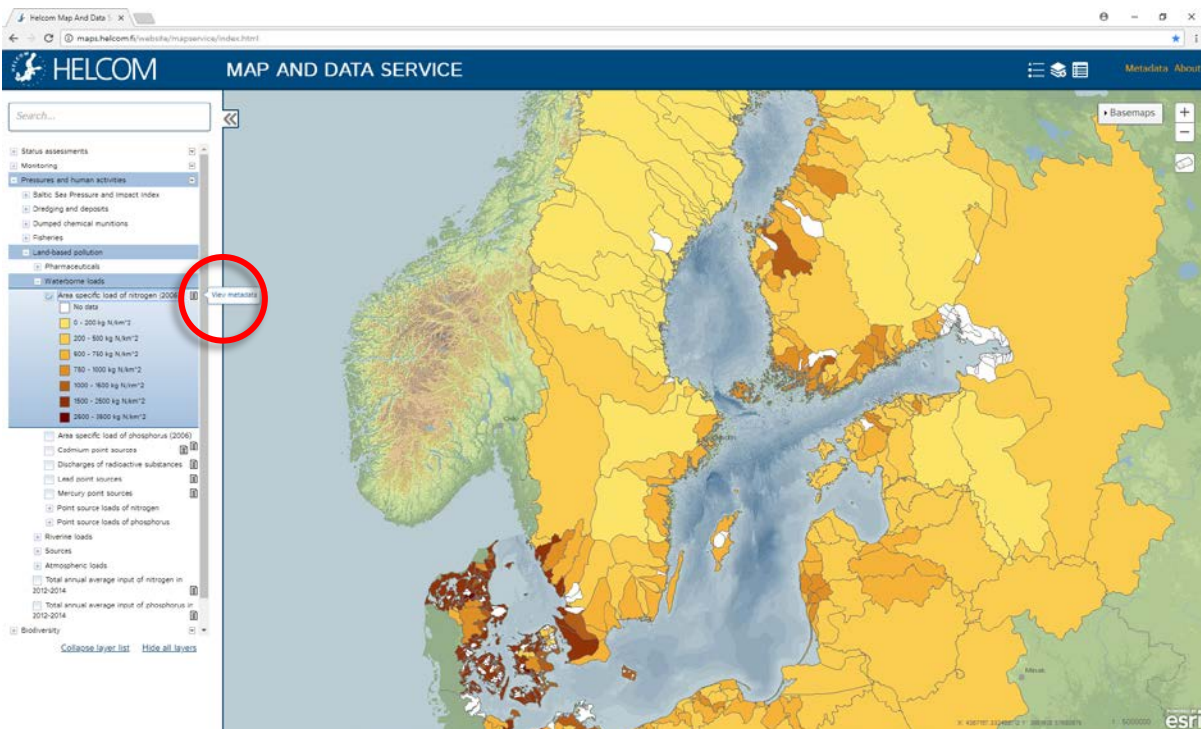


Figure 4: Access to metadata catalogue in MADS.

In the metadata catalogue, all the information related to the selected layer will be available, as well as the ZIP file which stores dataset SHP or TIFF for download, as observed in Figure 5.

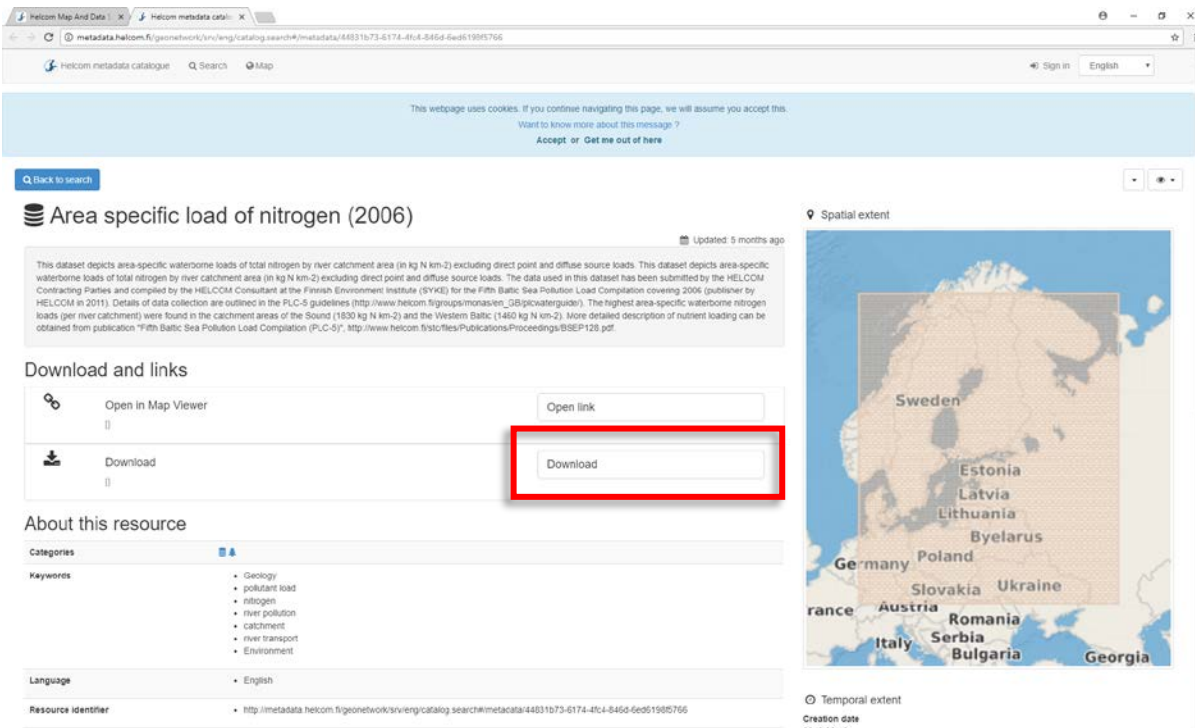


Figure 5: Downloading data in metadata catalogue.

The PLC data compilation and metadata links of the available PLC layers were organized in Table 1. Table 2 contains the links to the available map links.

Table 1: Land-based pollution sources (PLC-6 data) map links and metadata links.

Level 1	Level 2	Level 3	Level 4	Map	Map link	Metadata link
Background data for the HELCOM pollution load compilation						
1				Monitored and unmonitored sub-catchment areas	Map published	Metadata card published
2				Sub-catchments of transboundary and border rivers	Map published	Metadata card published
3				Pollution load monitoring stations (hydrological)	Map published	Metadata card published
3				Pollution load monitoring stations (chemical)	Map published	Metadata card published
3				Pollution load monitoring stations (combined)	Not published	Not published
4				Specific water flow	Not published	Not published
Waterborne land-based pollution						
	Input of nitrogen and phosphorus					
		Loads from sub-catchments				
		Nitrogen				
5				Specific load of Nitrogen	Map published	Metadata card published
6				Background load of Nitrogen	Map published	Metadata card published
7				Diffuse load of Nitrogen	Map published	Metadata card published
8				Agricultural load of Nitrogen	Map published	Metadata card published
9				Retention of Nitrogen in percent	Map published	Metadata card published
		Phosphorus				
10				Specific load of Phosphorus	Map published	Metadata card published
11				Background load of Phosphorus	Map published	Metadata card published
12				Diffuse load of Phosphorus	Map published	Metadata card published
13				Agricultural load of Phosphorus	Map published	Metadata card published
14				Retention of Phosphorus in percent	Map published	Metadata card published
		Direct point sources				
		Nitrogen				
15				Direct Nitrogen load from industry	Map published	Metadata card published
16				Direct municipal Nitrogen load	Map published	Metadata card published
17				Direct Nitrogen load from aquaculture	Map published	Metadata card published
		Phosphorus				
18				Direct Phosphorus load from Industry	Map published	Metadata card published
19				Direct municipal Phosphorus load	Map published	Metadata card published
20				Direct Phosphorus load from aquaculture	Map published	Metadata card published
		Riverine input of nutrients				
		Nitrogen				
21				Top 40 rivers with highest nitrogen concentrations	Not published	Not published

2			Top 40 rivers by annual total nitrogen loads	Not published	Not published
2			All observed nitrogen loads and flows in rivers	Not published	Not published
2			Phosphorus		
2			Top 40 rivers with highest phosphorus concentrations	Not published	Not published
2			Top 40 rivers by annual total phosphorus loads	Not published	Not published
2			All observed phosphorus loads and flows in rivers	Not published	Not published
6			Input of hazardous substances		
			Riverine input		
			Data coverage		
2			Data coverage of Mercury	Map published	Metadata card
7			Data coverage of Cadmium	Map published	Metadata card
2			Data coverage of Lead	Map published	Metadata card
2			Loads by rivers		
9			Load of Mercury	Not published	Not published
3			Load of Cadmium	Not published	Not published
0			Load of Lead	Not published	Not published
3			Point sources		
1			Data Coverage		
3			Availability of data on industrial input of Mercury	Map published	Metadata card
3			Availability of data on industrial input of Cadmium	Map published	Metadata card
4			Availability of data on industrial input of Lead	Map published	Metadata card
3			Availability of data on municipal input of Mercury	Map published	Metadata card
5			Availability of data on municipal input of Cadmium	Map published	Metadata card
3			Availability of data on municipal input of Lead	Map published	Metadata card
6			Industrial		
3			Industrial Mercury load	Map published	Metadata card
9			Industrial Cadmium load	Map published	Metadata card
4			Industrial Lead load	Map published	Metadata card
0			Municipal		
4			Municipal Mercury load	Map published	Metadata card
4			Municipal Cadmium load	Map published	Metadata card
3			Municipal Lead load	Map published	Metadata card
4			HELCOM hot spots		
4			HELCOM hotspots (current status)	Map published	Metadata card
5					