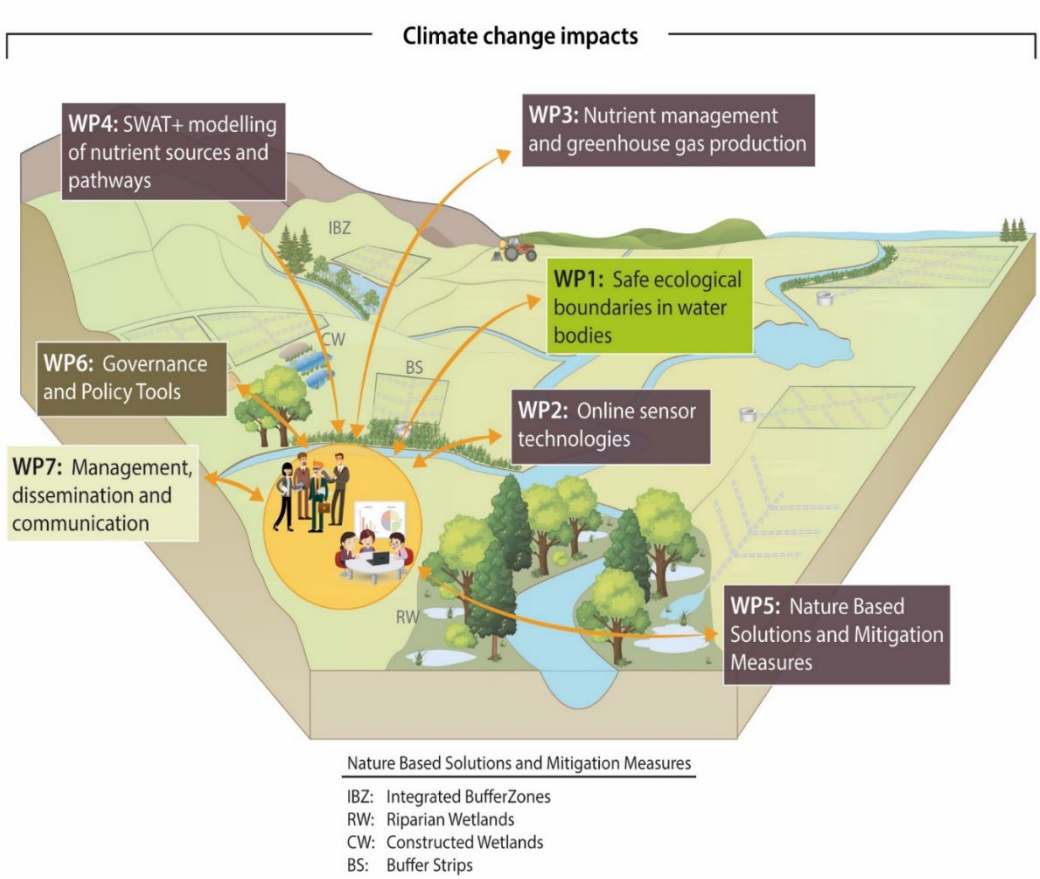


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Deliverable title: Interactive map and fact sheets on sensor demonstration sites
Deliverable number: D2.2
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Lead beneficiary: NIBIO, Norway
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Report from Deliverable 2.2:

# Interactive map and fact sheets on sensor demonstration sites

**Deliverable description from the Grant Agreement:** "*The interactive map will be displayed on the Online Networking Platform and provide functionality for users to zoom in on a specific station and access a factsheet to learn more about its instrumentation, data capture processes, databases, maintenance, and calibration procedures to promote a better understanding of the current availability as well as the pros and cons of online sensors among stakeholders, decision makers, and other end-users. Task 2.2.*"

**Interactive map**

An interactive map has been uploaded to the project website, see Figure 1. The yellow stars in the interactive map show the sensors for which real-time data are available. There are two stations each in DK, NO and FI and one in SE. By pressing a star with the cursor, the user is transported to graphs of the substances monitored in real-time at each station.

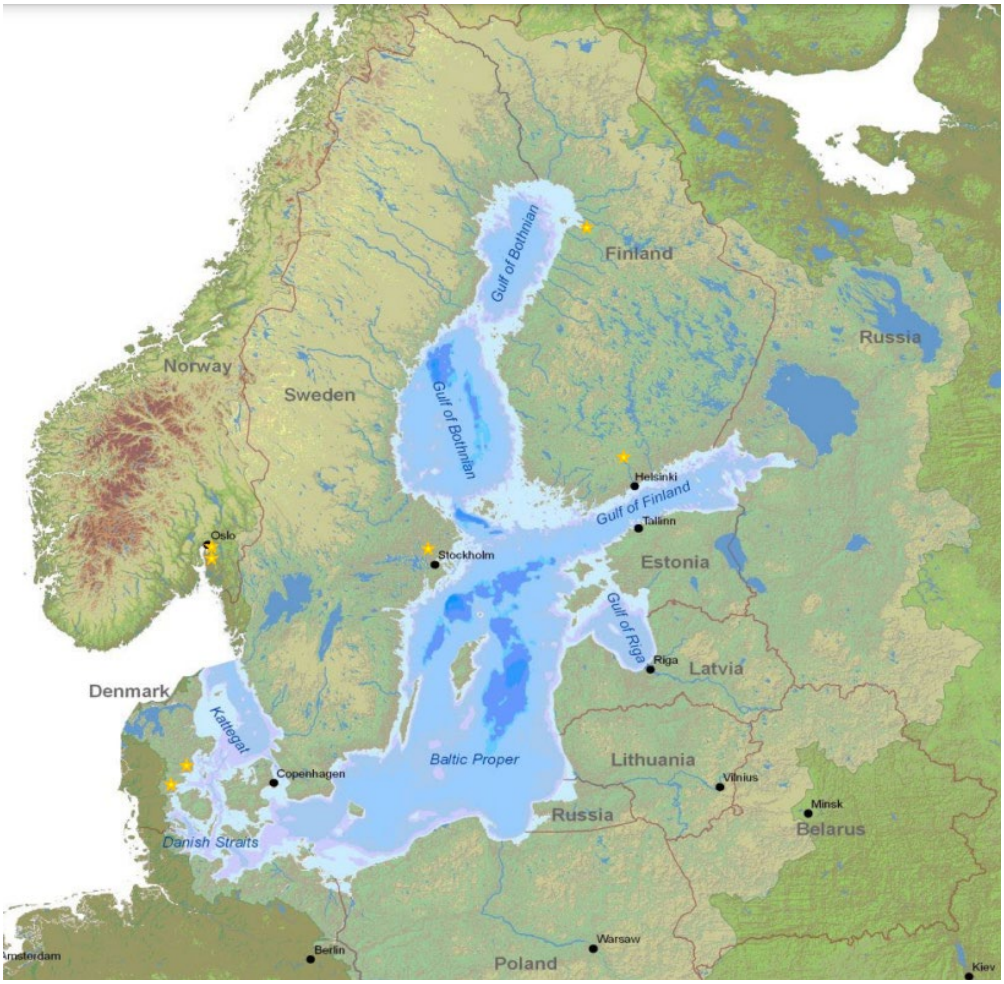


**Figure 1. Interactive map at the project's web site. By pressing on one of the stars, you are transferred directly to the sensor data (see examples in Figure 3) (see https://projects.au.dk/nordbalt-ecosafe).**

The team solved some technical issues in order to arrive at this interactive system. Most often the manufacturers of the sensors offer their own solutions, but these solutions differ, and a password is needed to access the data. We wanted the data to be available without a password, and that all data were available from the project's website. The chosen solution was to link the graphs on the NORDBALT ECOSAFE's website to national web pages with the data, so that the link goes directly to the owner institute.

NORDBALT ECOSAFE's partners in Poland and Latvia are not funded by WP2, but these partners are nevertheless following the progress of this work package, and they are looking into how sensors from their countries can be displayed on the project web site. However, some legal (related to farmers that owns the land adjacent to the sensor station) and technical issues (some sensors are not functioning well) remain to be solved.

It should also be noted that not all stations can operate during winter in our cold climates. Hence, some stations will not be in operation again before later in the spring of 2024. In our policy brief (Deliverable 2.1), we list issues such as winter operation as one of the challenges with sensor monitoring, but we also list the many advantages (https://projects.au.dk/fileadmin/projects/nordbalt-ecosafe/Filer/BriefEcoSafe_Sensor_monitoring_v10.pdf).

**Fact sheets**

In the web page, we have small fact sheets on each sensor, as shown in Figure 2. The fact sheets list information on the location of the station, which parameters are monitored, the name of the station, the upstream catchment area, dominant soil types and the land use in the catchment area, as well as the type of sensor.

Since the sensors data are given in real-time, there is no possibility to quality assure the data before they are displayed. For this reason, we have added more text and information to the website on this matter (cf. https://projects.au.dk/nordbalt-ecosafe/sensor-monitoring).

In addition to these simpler fact sheets, we, in Deliverable 2.1, prepared a brief with information on pros and cons of sensors. We referred to experiences with sensors from researchers and managers in North-European countries, and interviews with stakeholders and managers on their views of sensors, as well as showing how sensors can be used in science. Moreover, we have now translated the English policy brief to several national languages, since it was acknowledged that the brief would be read by more managers if it could be available in their own language.

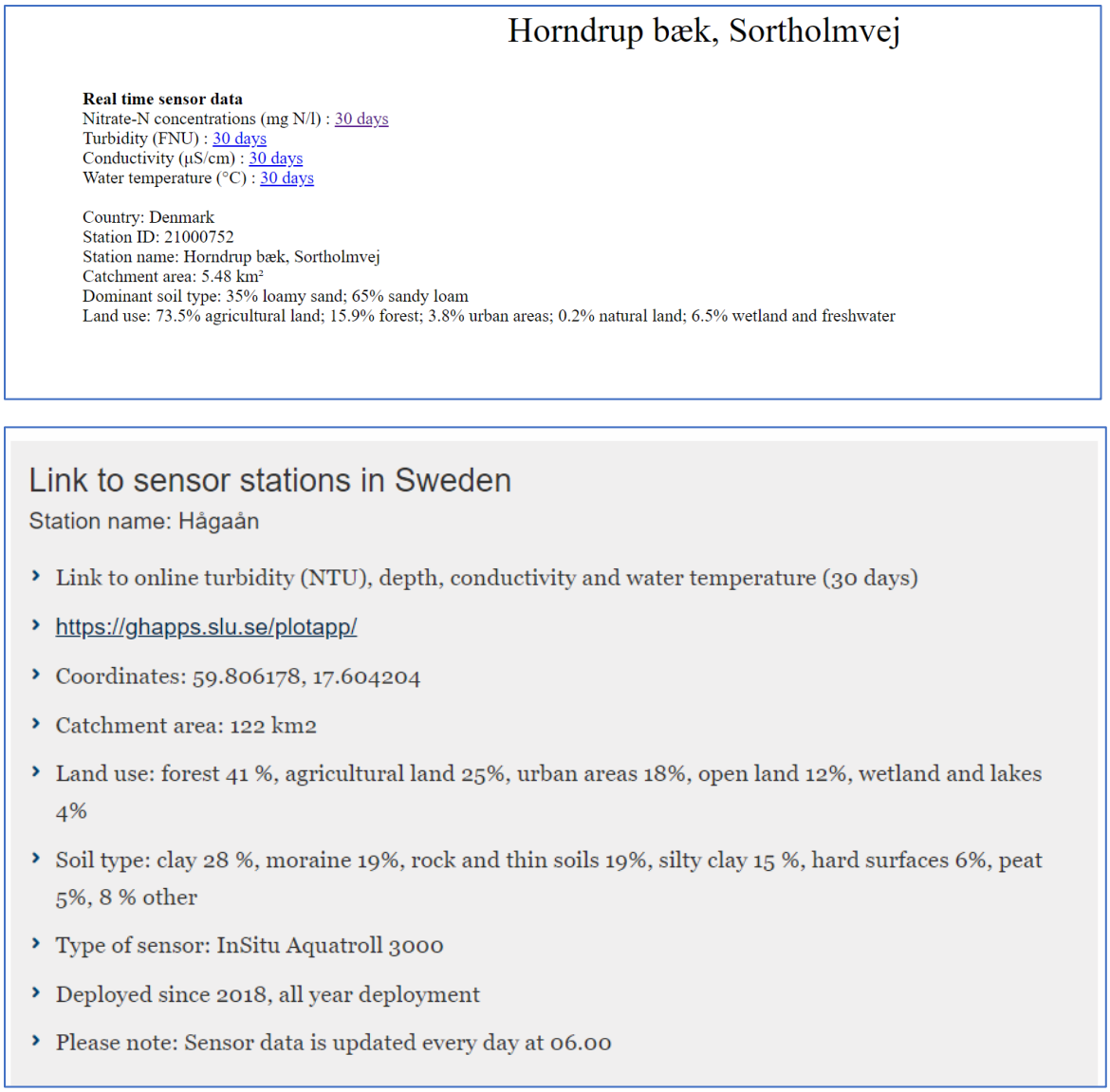


**Figure 2. Two examples of fact sheets on the web site (the examples are from Denmark (top frame) and Sweden (bottom frame)).**

## Graphs with data

The data are displayed in graphs, as illustrated in Figure 3, using examples from Finland and Denmark. The team has decided that we as a general rule will show the data for the last month, but Finland has also given an option for shorter and longer time series.

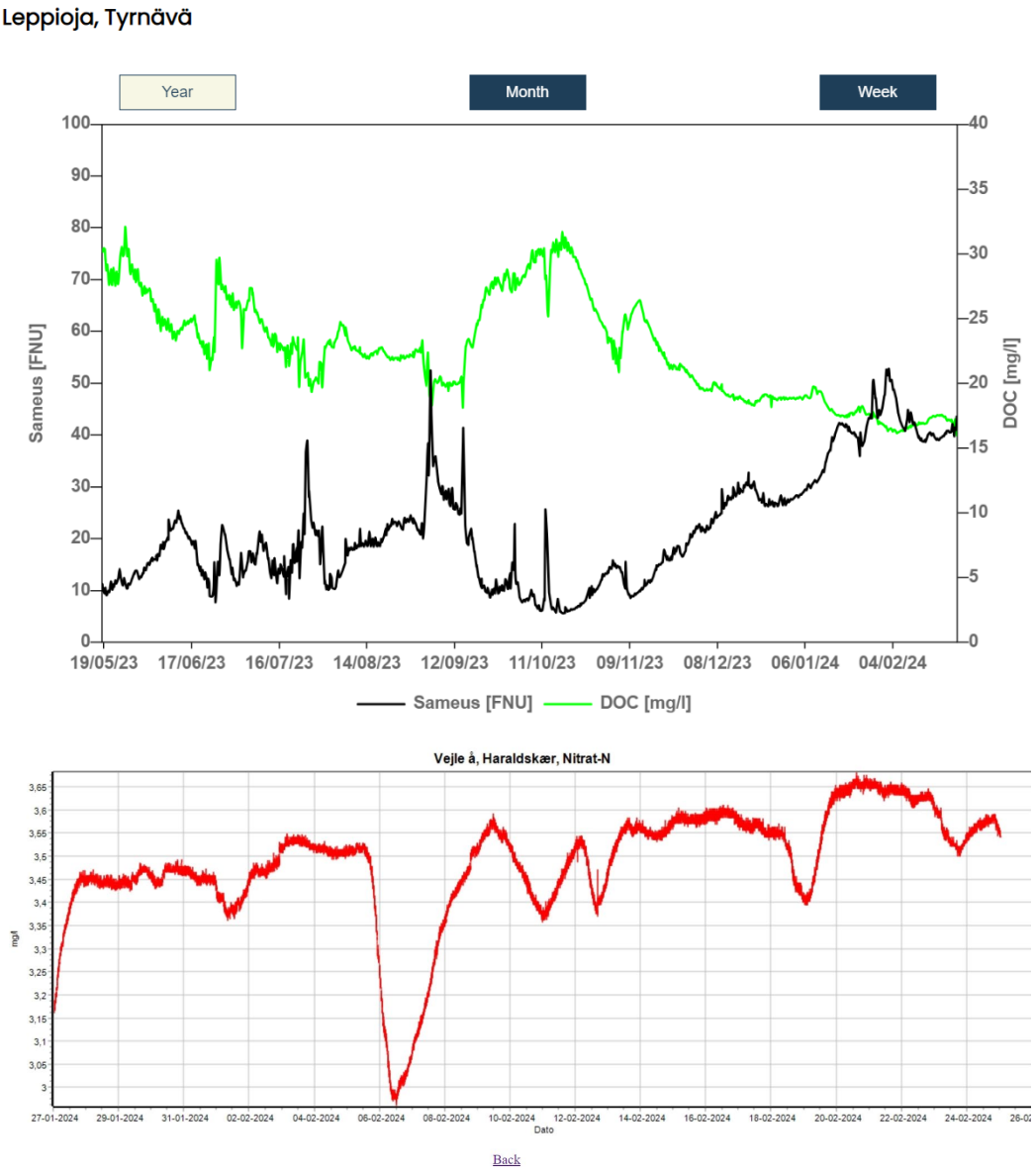


**Figure 3. Example graphs from the web page: Top panel: turbidity (Sameus) and dissolved organic carbon (DOC) from Leppioja station in Finland; Bottom panel: Nitrate recordings from Vejle Å in Denmark.**

## Next steps

Although our deliverable is now fulfilled in practice and within the deadline, we will continue to develop the web page to make it increasingly accessible, and to assess to which extent citizens and managers find this on-line display of real-time data useful.

Some partners are also opening national pages on sensor monitoring, with links to the real-time data in the respective countries, since it may be easier to access the real-time data from ‘familiar’ national webpages.