

An overview of the adequacy of Arctic sea basin data

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Introduction

Observations in the marine area are generally made with a specific purpose in mind. Costs can be reduced and marine knowledge improved when data are reused for multiple purposes. The EU is now actively moving towards this new paradigm. The Arctic Sea Basin Checkpoint (SBC) project addresses the availability of data sets, i.e. data provided in a coherent set from a specific source, describing a specific parameter and will evaluate the quality and adequacy for multiple purposes in the Arctic.



The project is organised in challenges, each dealing with their own set of questions to be answered. The objective is to find the data and knowledge gaps when answering those questions.

Challenges

- Wind Farm Siting (02)
- Marine Protected Areas (03)
- Oil Platform Leak (04)
- Climate Change (05)
- Coasts (06)
- Fisheries Management (07)
- Fisheries Impact (08)
- River Input (10)
- Bathymetry (11)
- Alien Species (12)



EMODnet

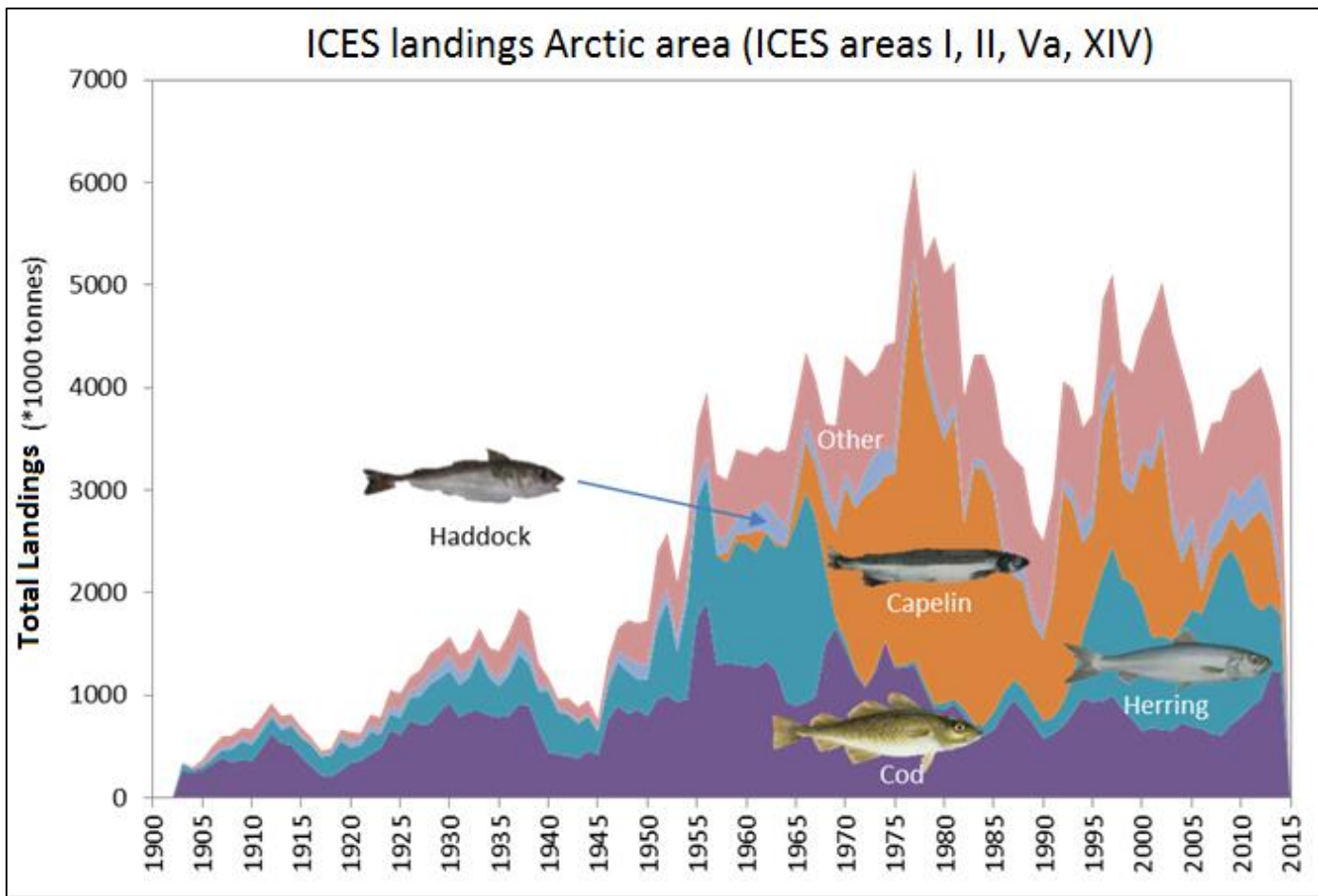
In 2007 the European Marine Observation and Data Network (EMODnet) was developed to centralise European marine data. There are six EMODnet Sea Basin Checkpoints: North Sea, Mediterranean Sea, Black Sea, Baltic Sea, Atlantic Ocean and Arctic Ocean.



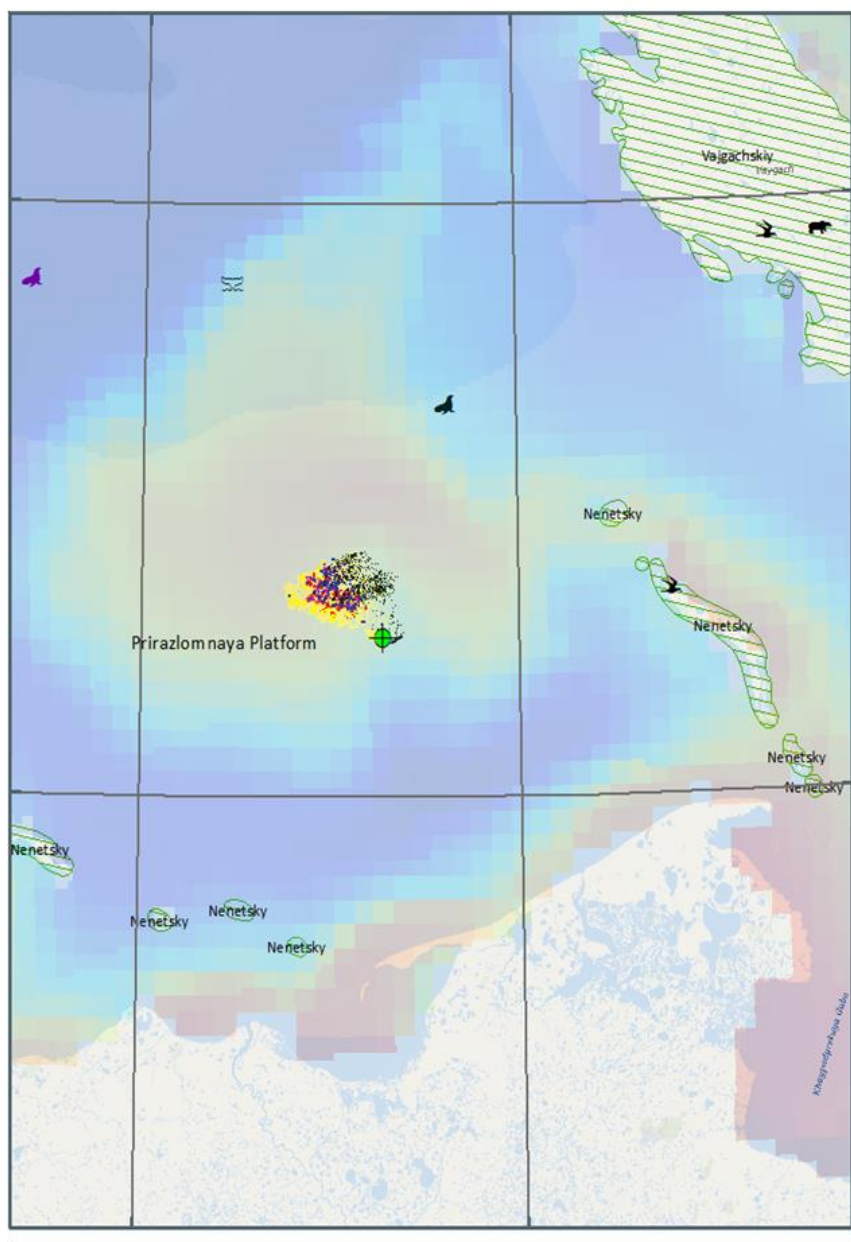
First Results of the Challenges

(Summary results of a selection of challenges)

The fisheries management challenge focused on vital fisheries data, i.e. removal by fisheries, in the Arctic region. The Figure below shows the catches in the ICES areas that cover the Arctic part of the Northeast Atlantic. Interesting is the alternating pattern in catches of two competing species, i.e. Capelin and Herring, that dominate the fisheries on small pelagics.



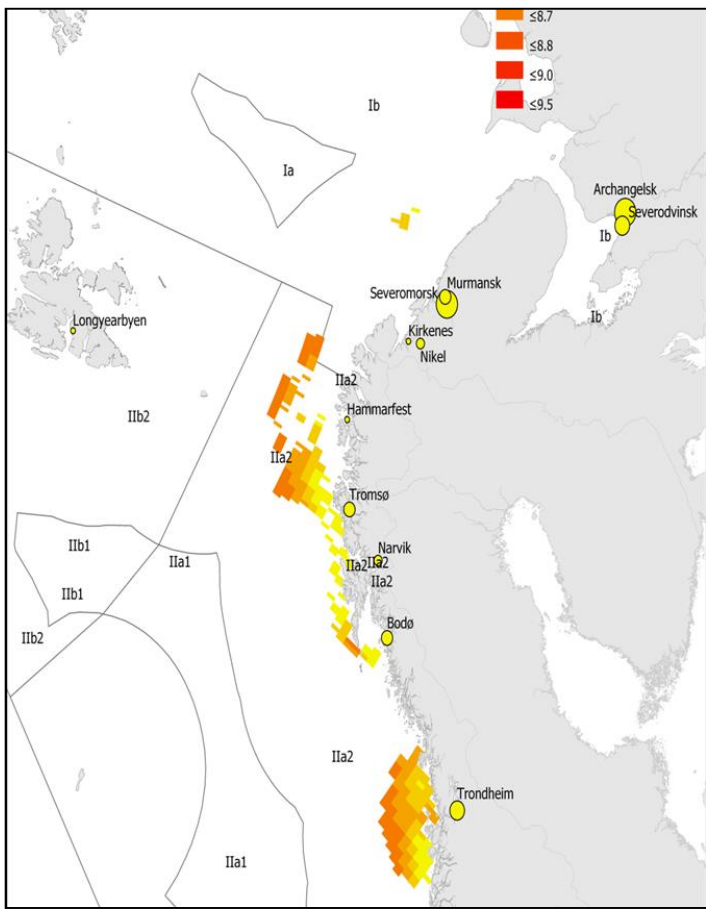
Source
<http://www.ices.dk/marine-data/dataset-collections/Pages/Fish-catch-and-stock-assessment.aspx>



The oil leak exercise simulated an oil spill after an explosion on the Prirazlomnaya Platform in the Pechora Sea. The map shows the distribution and resources at risk.

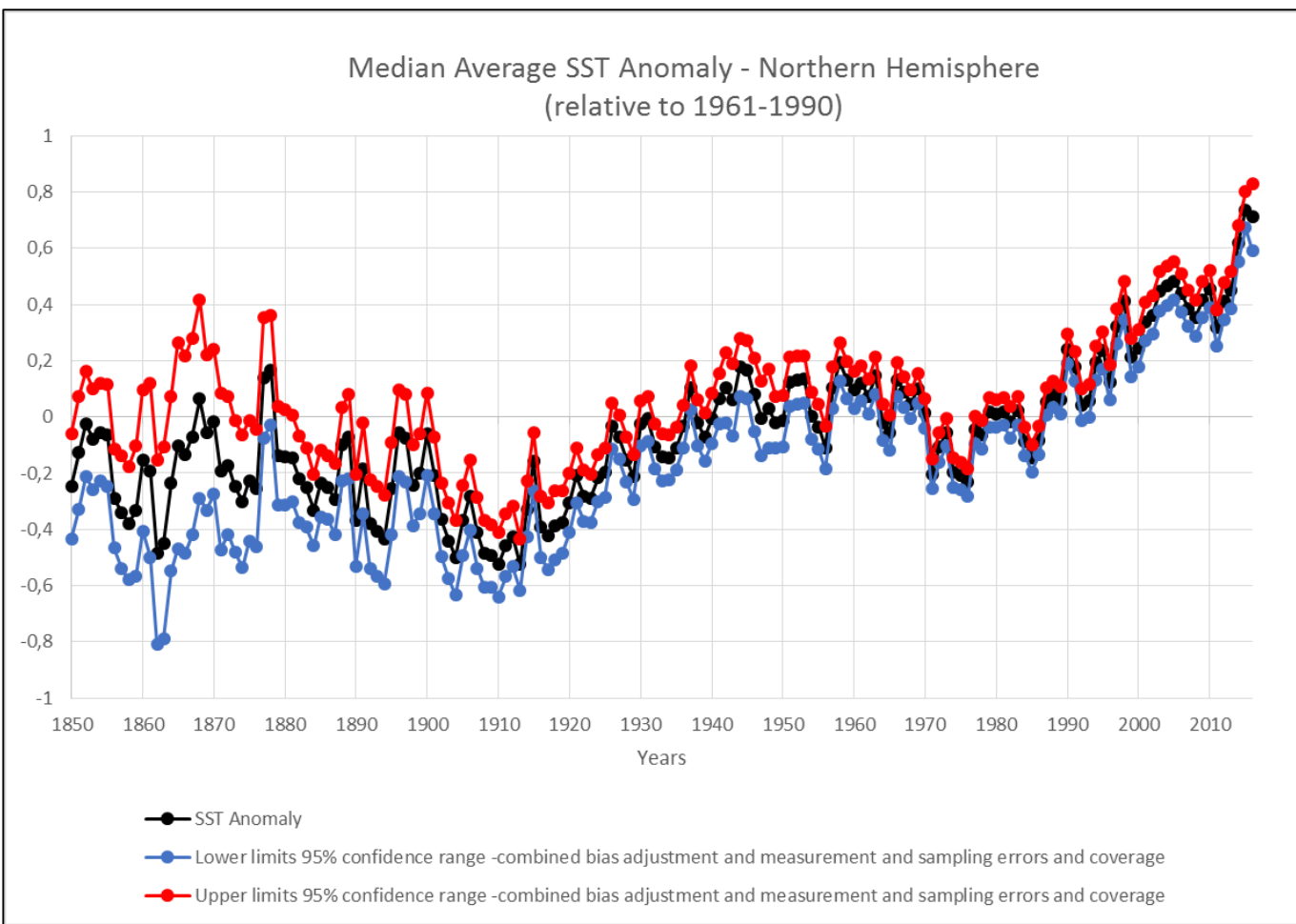
We were able to respond to this spill within 24 hours, and deliver a full risk estimate after 72 hours.

Source:
OSCAR spill model

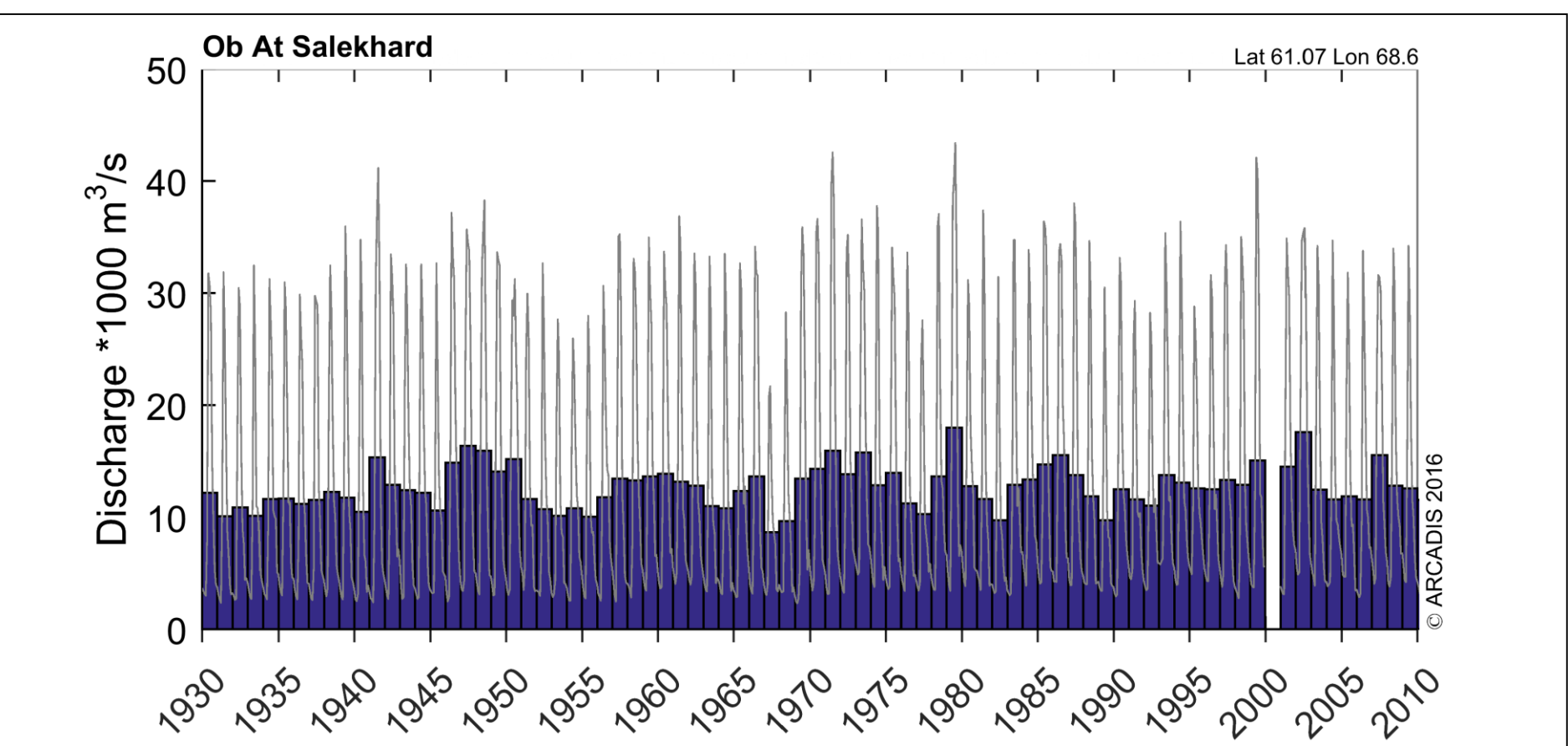


The challenge Wind Farm Siting determined suitable areas for floating wind parks along the Norwegian shores. The maps shows suitable areas based parameters like ice-free area, distance to the shore, wind, depth.

The Climate Change Challenge focuses on climate change in the Arctic area and it's consequences. A lot of data is available, sometimes making it difficult to gather all necessary components because all data can be very scattered and spread-out.



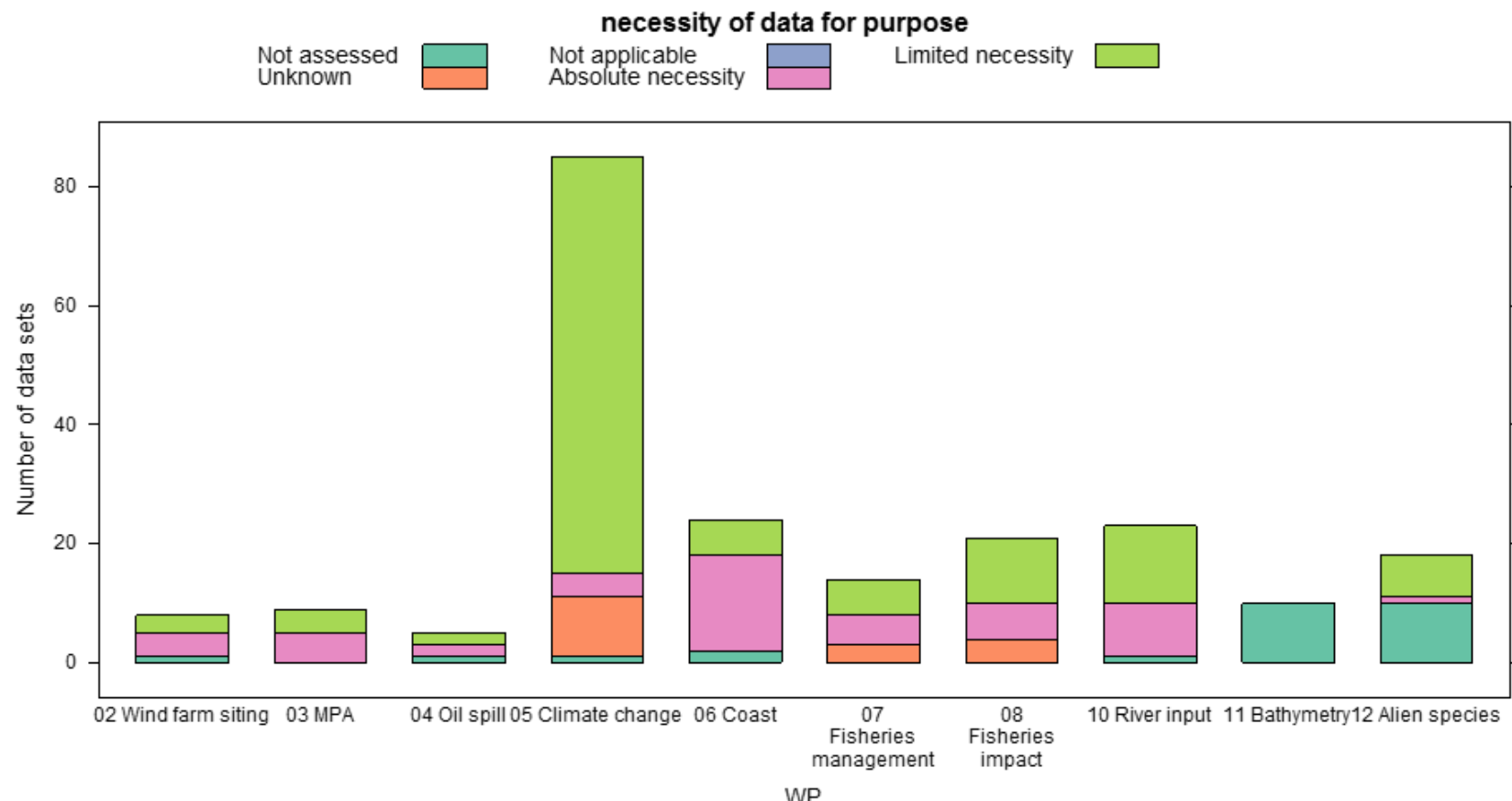
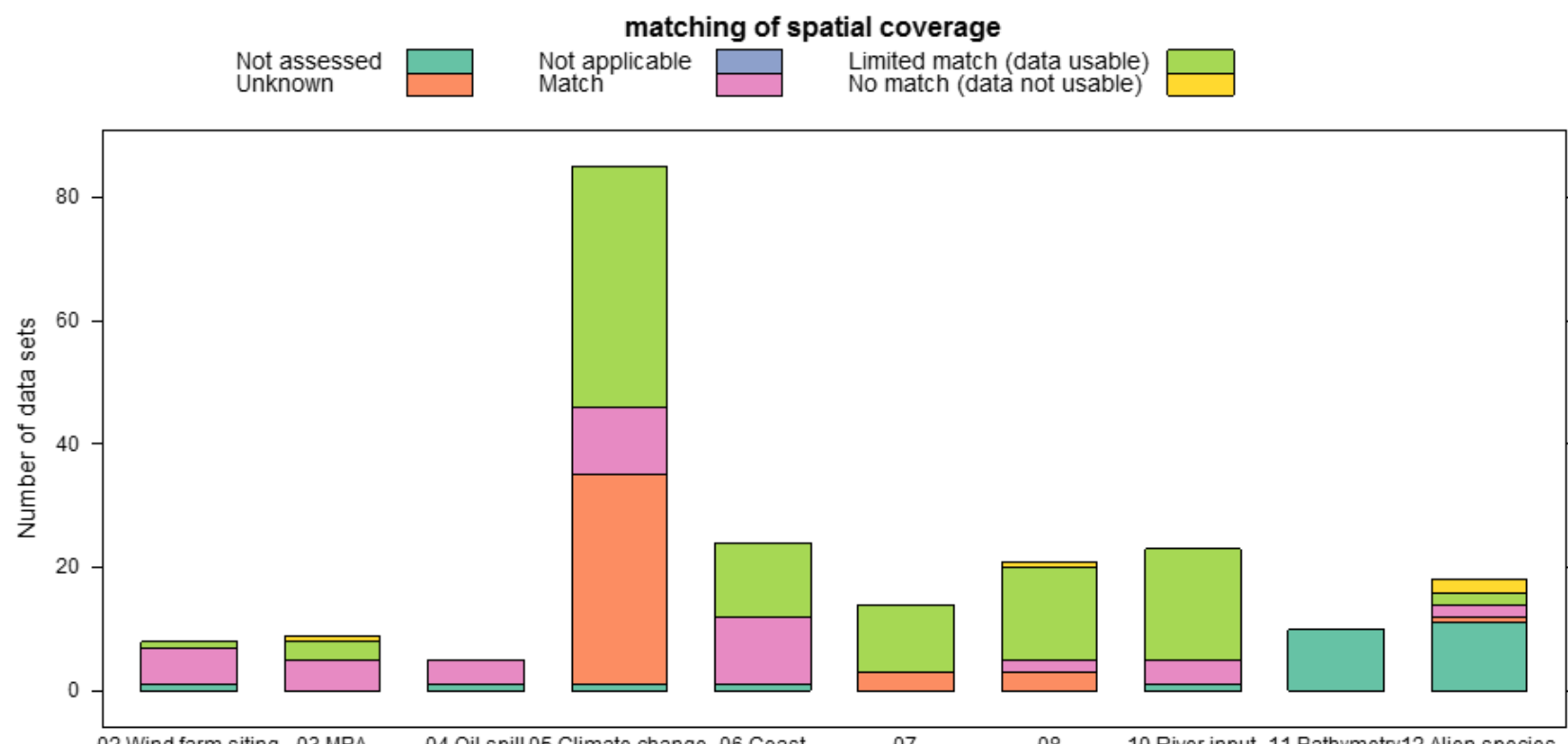
The River input challenge collects information water, sediment, and nutrients discharging into the Arctic Ocean, and on migration of eel and salmon. The time series shows the annual discharge of the River Ob.



Source: Arctic Runoff Database (ARDB)
http://www.bafg.de/GRDC/EN/04_spcldbss/41_ARDB/ardb.html

Preliminary Results Data Adequacy

In the first year the project collected 279 datasets and 693 assessment reports reporting data. All datasets used in the challenges are assessed on their usefulness and adequacy. The figures on the right hand give some preliminary results. The figures show for each work packages the number of datasets found and scored. The examples presented here show the matching with the spatial coverage, and the scoring of the data format. The adequacy shown here only list the data sets used/considered to be used in the challenges. This will be supplemented with adequacy scores for data sets used in other literature sources.



Second year

In the next project year more data sets will be assessed on the usefulness and adequacy. This will lead to an overview of gaps in and problems with data, encountered while answering the challenges.

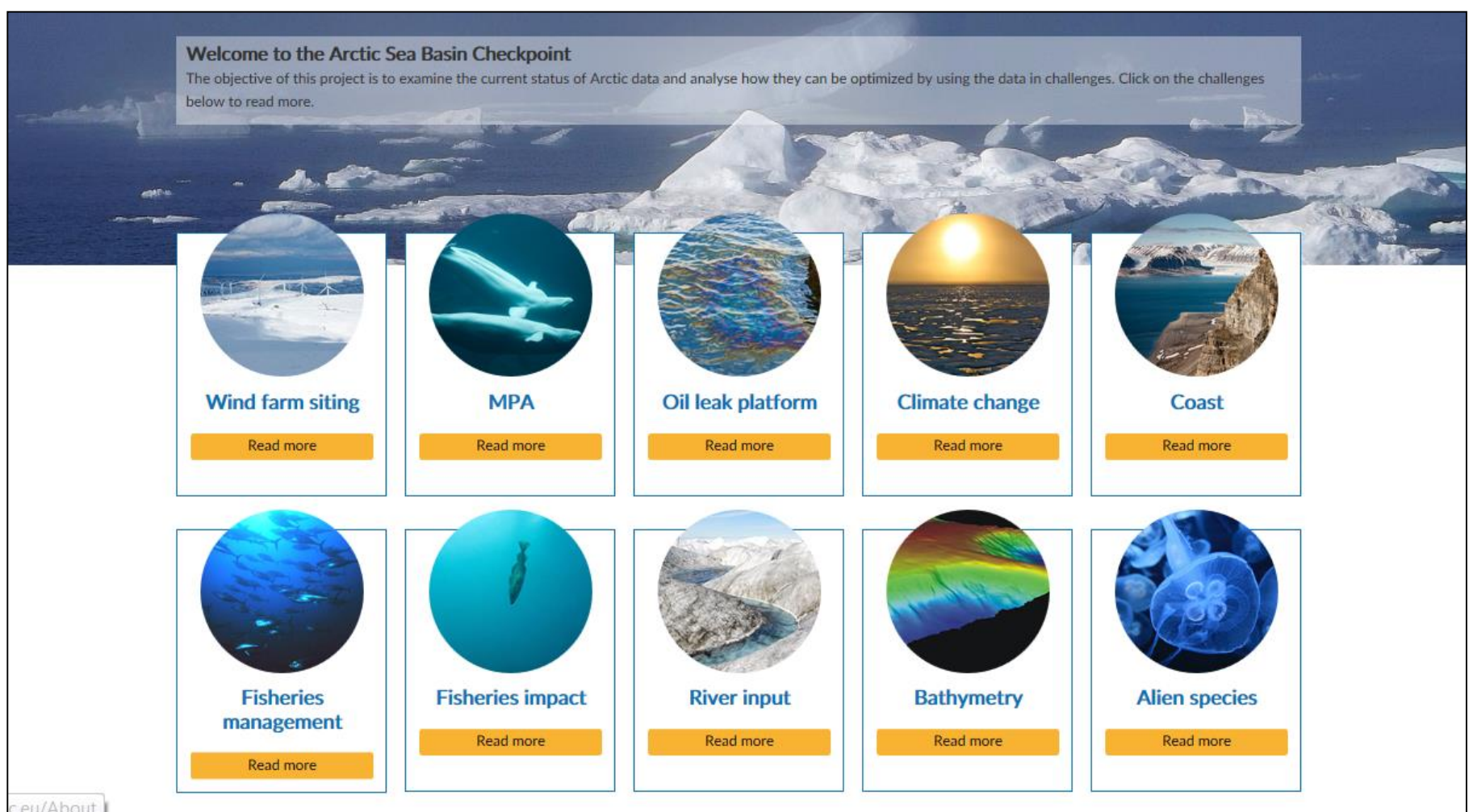
Portal

To find out more about the Arctic Sea Basin Checkpoint, visit the portal:

www.emodnet-arctic.eu



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