EMODnet
European Marine Observation and Data Network

Your gateway to marine data in Europe

Sea Basin Checkpoints

Arctic

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Introduction

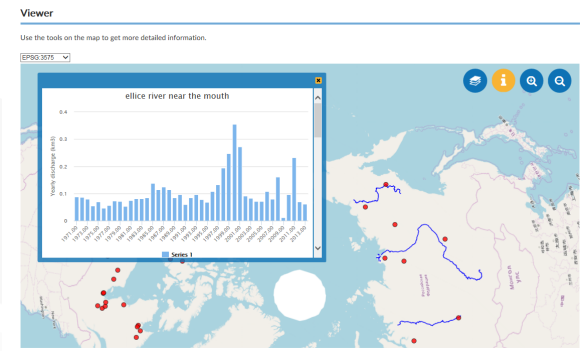
- Still a bit of an 'outsider'
- Work in progress – please check the website every now and then for updates (www.emodnet-arctic.eu)

Updates on the work so far

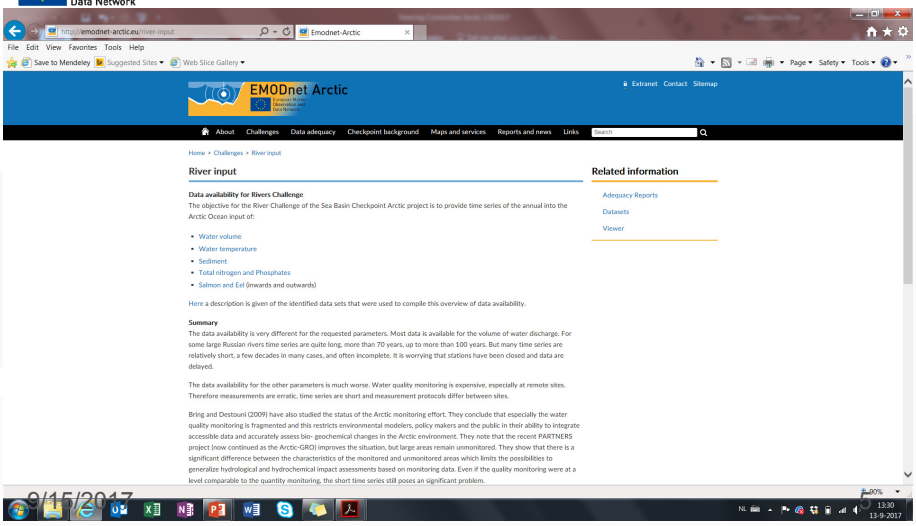
- Work done:
  - Literature survey (link to report)
  - Data Adequacy Report (DAR, link to report)
  - Challenges (See website for latest updates)
  - Expert Panel Meeting (report)
  - Stakeholder Workshop (report)
  - Kick-off Phase II
  - Svalbard visit
  - Challenge leaders meeting

Website – Phase II

- Portal is online: www.emodnet-arctic.eu
- Challenges are being updated now
- Viewer and databases are online



Website examples



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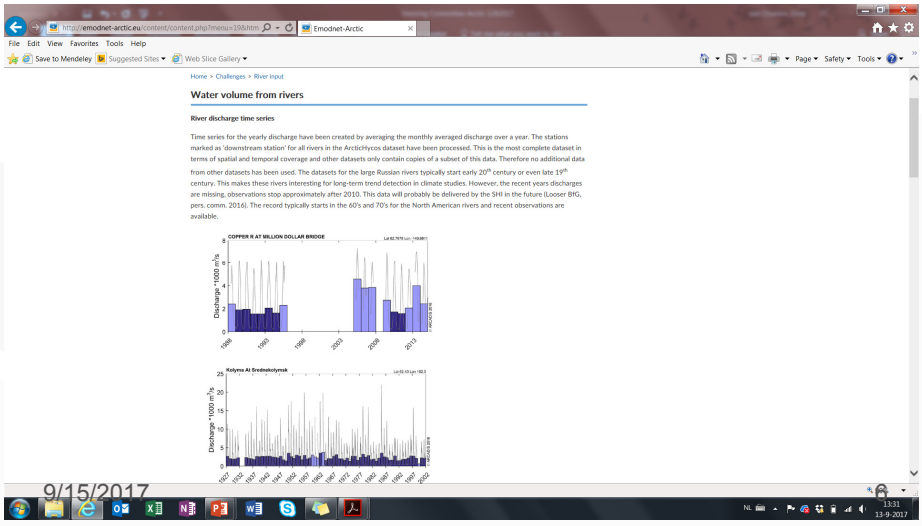

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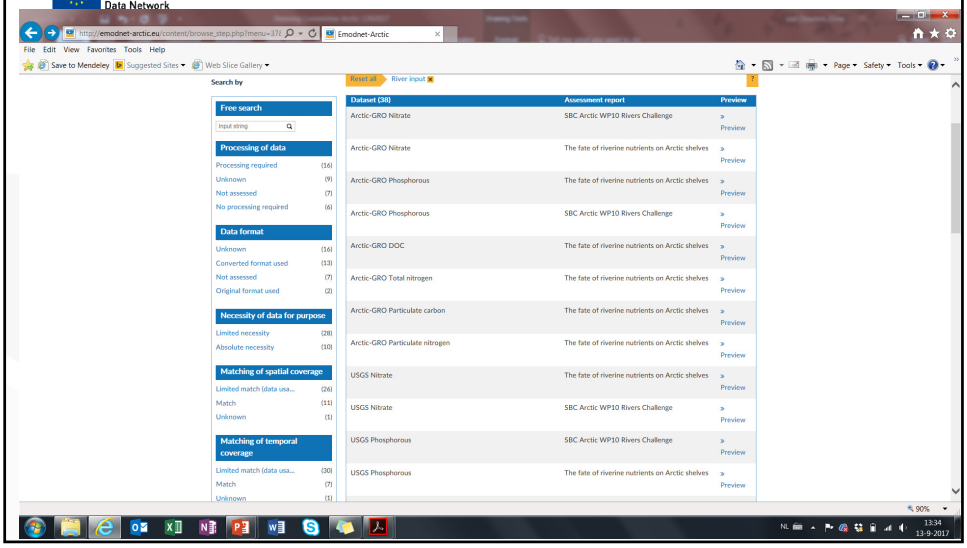

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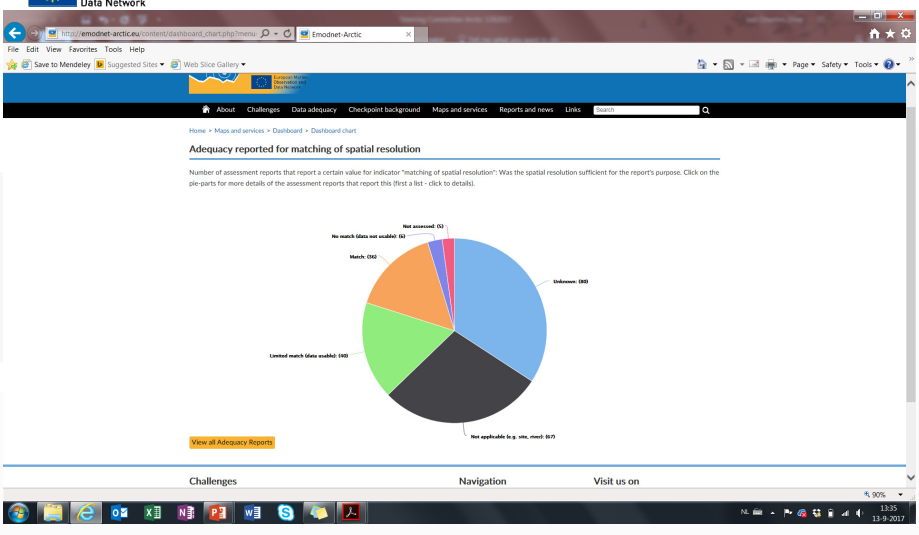

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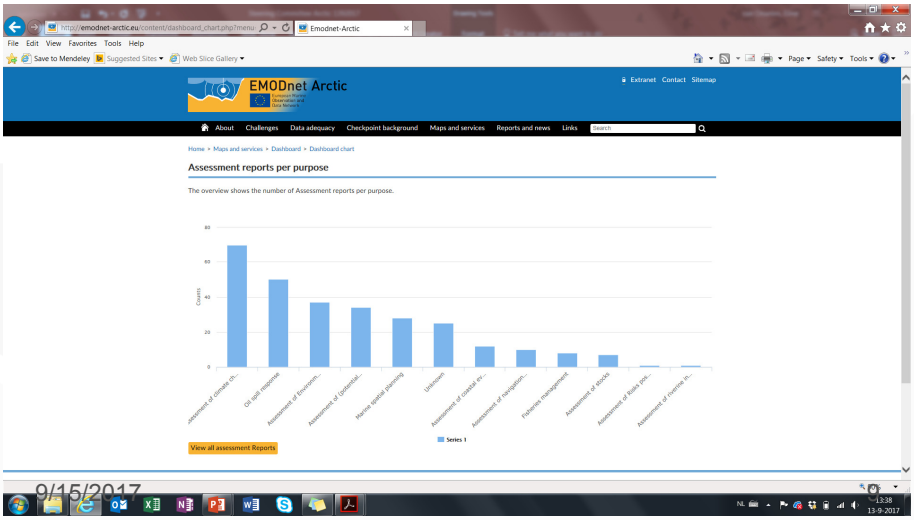

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Svalbard visit

- Norwegian Grant
- Field visit
- Workshop (2 days)
- University visit
- Work-sessions

Highlights

- Connected to interesting people and projects related to the Arctic.
- All challenges were discussed and expert inputs were given on the topic, as well as recommendations for the future.

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Example: Fisheries

Recommendations for science

- Collect information on bycatch of fisheries in the Arctic (on short time series are available and information for Arctic Ocean is lacking)
- Get a better understanding of fisheries in the Arctic Ocean and set up mechanisms how to monitor it (including a current baseline). No statistics on stocks in Arctic Ocean because current fisheries here is close to none. But the ocean is opening up due to climate change. Make sure monitoring is in place to assess current stocks and impacts of fisheries. No knowledge on Russian fisheries. Pinpoint some hot spots in region, because you can provide reliable information on landings, bycatch, and effort in e.g. Barents Sea, eastern Canadian waters (very open in sharing) and Bering Sea.
- Get a better understanding of habitat impacts due to bottom trawling fisheries in the Arctic by combining fisheries effort and habitat characteristics. Both are knowledge gaps. Can the Barents Sea information work as an example? Difficult is proof of impacts of the actual fisheries in the field.

Recommended action points

- Include shell fish, crab and shrimp fisheries in the challenge as this is the main type of fisheries in some of the parts of the Arctic, for instance in eastern Canada, and also in the Barents Sea.
- Update international databases with national databases. International databases are often lagging 3 years behind and present data in a format that you don't have access to more details. How well do these large international databases perform? ICES data base should be up-to-date, although not all data are readily available from ICES.
- Improve access to existing data. Focus on some areas.

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Example: SIOS

- Svalbard Integrated Arctic Earth Observing System
- Regional observing system for long-term measurements in and around Svalbard addressing Earth System Science questions
- The SIOS Knowledge Centre includes:
  - Integration and optimization of the observation system
  - Access to the research infrastructure
  - Data management, storing and curating of scientific data, both ground-based and from space
  - Utilization of remote sensing resources
  - Coordination of logistical services
  - Training and education programs

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Example: field visit

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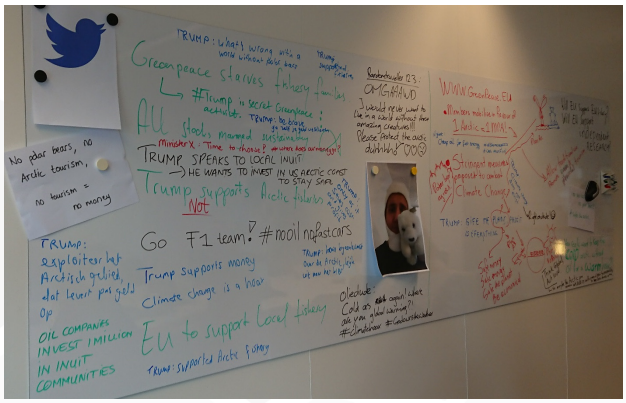
Challenge leaders meeting

- Challenge walk-through, status updates
- Group exercises: outlook to the future
- Actions and recommendations

- A roleplay game

Roleplay game

- "Fresh" view on things
- Playful way to look at serious topics
- Result: List of wishes/ideas/ visions for the future



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Example of future research/actions

wind farms	Further research of impact on sea-bed of turbine moorings.	
	Study wind-profiles at various levels.	
	Refinement of existing grids.	
	Development of Arctic windturbines.	
Marine Protected Area	Possibilities and use of MPAs in sea-ice habitats.	Adjust MPAs to new developments and the Arctic area.
	Habitat mapping, including benthic systems.	Create awareness of the MPAs, including the reasons behind them.
	Create overview of protected species in MPAs	Create quantitative targets in MPAs
oil platform leak	Research the sensitivity of relevant species, including seasonality.	Monitor oil and gas development, develop risk analyses and mitigating measures.
	Oil slick behavior in cold regions and sea-ice in models.	
climate change	Study CO_2 and salinity in the Arctic Ocean.	Standardization!
	Pan-Arctic approach on the study of fytoplankton.	Illustrate the positive feedback loop of climate change and use this for educational puposes.
	Research of the melting permafrost and the subsequent effects.	
	Study trends in large mammals, ecosystem engineers, birds, etc.	
	Study the impact of climate change on indigenous Arctic cultures.	
coasts	Focus on multi-year research on a select amount of stations instead of looking at many stations inconsistently.	
	Standardization of coastal movements.	
	Explore the link between sea-ice and coastal movement.	
	Explore the possibility of monitoring using remote sensing.	
fisheries management & impact	More information on Arctic fish habitats and benthic fisheries.	Catch and landing data standardization, including bycatch.
	Shrimp, shellfish and crab fisheries research.	
river input	Muliyear monitoring at relevant locations.	Focus on standardization.
	Effects of changing rivers due to melting permafrost.	Focus on the release of international datasources
	Constituents research.	
	Focus fish research on relevant local species.	
bathymetry	Measure the remaining 89% unmapped area of the Arctic with multibeam.	
	Focus on shipping routes and ports.	
	Seabad mapping, including seabed habitats.	
alien species	Focus on mapping the presence of invasive species in the Arctic.	Standardization of international methods.
	Develop innovative measurement methods.	Preventive measures
	Studies on the impact of invasive species in the Arctic.	
Other	Research fishery functions and shipping (use of the ocean). Not only monitoring but analysis and availability	Create alternatives for the Northern shipping routes (e.a. railways etc.)
	Harbor and port monitoring, biotic and abiotic factors.	Release of international data (Russian)

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And now?

- Finish the challenges
- Update the website
- Expert panel round 2
- Reports


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