Project information

Keywords
environmental assessment, sediment map, seabed proccesses
Project title
Marine base maps for the Porsanger Fjord
Year
2015
Project leader
Aivo Lepland, NGU
Participants

- Project leader(s)/institutions: Aivo Lepland , Geological Survey of Norway (NGU)
- Project participants/institutions: Sigrid Elvenes, Oddvar Longva, NGU
- Collaborating scientists/institutions: Hilde Elise Heldal, HI. NGU will make base maps and results of sediment core studies available to the partners/collaborators in the flagship

Flagship
Fjord and Coast
Funding Source

Fram Centre, NGU

Summary of Results

1. A 10-day-long mapping cruise in the Porsanger Fjord using NGU's research vessel "Seisma" was undertaken in June 2015. The outer part of the fjord was a primary mapping target during the cruise. The obtained bathymetric and backscatter datasets using WASSP 80 kHz multi-beam system, integrated with the results of subbottom profiling sediment sampling and video observation of the seafloor completes the mapping effort and the field work part of the project.
2. Seabed mapping results obtained during the 2012 and 2013 mapping cruises, integrated with previously existing datasets form Statens Kartverk have allowed compilation of sediment maps for 2/3 of the area of the Porsanger Fjord.
3. Twelve sediment cores up to 60 cm long have obtained for environmental studies from depositional basins in the southern Porsanger Fjord. Geochemical and isotopic fingerprints archived in these short cores are expected to record environmental and climatic changes during the last c. 100-200 years, and can be used for identifying baseline conditions in the area. Most of the geochemical results including geochronology on these cores are already available and the publication is expected to be completed by the fall 2015.

For the Management

The seabed mapping results obtained in the project provide basis for knowledge based management of marine resources in the Porsanger Fjord and can be for various purposes such as optimal placement of fish farms, assessing economic sand resources, defining positions of seafloor pipelines and cables.

Published Results/Planned Publications

Publication of the scientific paper on the sedimentation patterns and contaminant distribution in the Porsanger Fjordwill be submitted in September 2016.

Communicated Results

News items of mapping cruises have been reported on the web sites of NGU and the Fram Centre. The unique wreck of an airplane from World War II that was uncovered during the cruise attracted major media interest. NRK came on onboard NGUs research vessel and made a reportage that was broadcast on TV and was also reported on NRK's website.

Interdisciplinary Cooperation

The project has had an ambition of collaborating with other projects of the flag ship and integrating the base maps into biological and ecological projects. Cooperative work with other projects has been sporadic during the first years of the project, but as the datasets have been accumulating during the course of the project and the seafloor maps have been shaping up, several parallel Porsanger projects have

started noticing the value of good seabed data. Collaboration has been established with HI in the project "Anthropogenic and natural radionuclides in sediments in the Porsanger Fjord". In this collaboration NGU shares the sediment cores obtained from the Porsanger Fjord for radionuclide study that is currently being undertaken at HI. Radionuclide results, combined with the heavy metal profiles will allow reliable reconstruction of pollution histories and assessment of current environmental status of the fjord. Sharing of seabed materials between parallel projects provides basis for comparison of biologic and geologic seabed data, and compilation of most reliable seabed maps.

Budget in accordance to results

The funding from the Fram Centre was essential for NGU to initiate the seabed mapping project in the Porsanger Fjord. Because NGU considers the environmentally diverse Porsanger Fjord as an important fjord for scientific interdisciplinary studies of the Arctic ecosystem, a 50% matching funding from NGUs own resources was secured for the project. The proposed budgets for 2012, 2013 and 2015 experienced however significant cuts, and the project was not funded in 2014. These budget cuts hindered the fulfillment of the projectthat was initially envisioned to be completed by 2014. NGU hopes that the Fram Centre will find means for funding themap production and publishing activities planned for 2016 in accordance with the proposal, which will be crucial for successful completion of the project.

Could results from the project be subject for any commercial utilization

Yes

If Yes

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Conclusions

To come....