

Establishing an Arctic SDI.

The Arctic SDI is a pan-Arctic cooperative initiative based on input from the National Mapping Organisations of all eight Arctic Council countries. It has the support of Canada, Denmark, Faroes, Finland, Greenland, Iceland, Norway, Russian Federation, Sweden and the United States.

The Arctic SDI initiative received, after a request from the Nordic Mapping Organisations, the formal support of the Arctic Council at its Senior Arctic Officials (SAO) -meeting in November 2009: "All Member States expressed their support for and interest in participating in the Arctic SDI project". The SAOs recognized the value of the Arctic SDI initiative and subsequently Greenland agreed to lead through CAFF the project in the Arctic Council.

The aim of this project is to jointly develop an Arctic SDI that will contribute towards pan-Arctic science and societal decision making. The Arctic SDI will provide:

- Reference data as Web Map Services to establish a common image and vector base for the Arctic at a nominal scale of 1:250,000;
- A searchable catalogue of map-able data resources i.e. base maps and other geo-referenced thematic data and services;
- A Web portal as a primary user interface to search the catalogue and enable visual analysis of multiple base maps, thematic maps, and geographic data.

The Project is comprised of three specific phases, (1) Structuring phase, (2) Establishing Phase and (3) Operational Phase.

The project seeks to establish a joint technical collaboration amongst the national mapping agencies surrounding the Arctic in order to provide national geographic reference data as a basis for analysing and monitoring environmental and climate change. The information will be accessed and distributed through a spatial data infrastructure consisting of national servers providing the national geographic datasets. The circumpolar national mapping agencies (NMAs) will lead the development, maintenance, and administration of the Arctic SDI by providing the national geographic information (reference data) and systems for data sharing amongst the circumpolar countries. Within the Arctic Council, the project is being led by Greenland through CAFF. The work on the Arctic SDI will make use of technologies, data and experiences gathered from other SDI projects.

There is an obvious need for a dedicated Arctic SDI that would provide for the development of the necessary standards and a framework to encourage greater integration of and access to Arctic spatial data. It would allow for a more robust management and manipulation of data for both research and management purposes.

With the current interest in climate change, the Arctic has been subjected to intense scrutiny. As a result, a wide array of spatial data has been generated. The approach to managing much of this data has largely been national or dedicated to specific issues and, as a result, many of the existing datasets are distributed throughout many organisations. They are often not integrated or coordinated and it is difficult to find an environment in which these diverse datasets can be combined and analysed together.

The Arctic SDI project is expected to result in the following:

- Users, such as the Arctic Council, its Working Groups and the Arctic research community, will have easy access to relevant and updated geographic and thematic information covering the entire circumpolar region – data that can be used for many purposes and many different tasks.
- A distributed regional/arctic infrastructure consisting of interlinked servers with high quality national geographic data will be located in each of the eight arctic countries.
- Possibilities will be created for users to connect to web map services and simultaneously access, view, and explore several types of geographic and thematic information concerning the Arctic Region.

Expected benefits of the Arctic SDI:

- Regular use of the Arctic SDI's web map and other services by national authorities.
- Regular use of the project's web map services in schools and universities in the Arctic and elsewhere.
- Possibilities for media to receive relevant and updated information.
- Possibilities to foster cooperation with industry on Arctic issues.



Figure 1: The Arctic can be identified and defined in many different ways depending on what parameters that are used. The Arctic SDI will cover the Arctic regions of the involved participating countries, as defined by the countries themselves.

Participating organisations:

- National Land Survey of Sweden
- Norwegian Mapping and Cadastre Authority
- National Land Survey of Finland,
- The Federal Service for State Registration, Cadastre and Mapping, Russia
- Government of Greenland
- National Land Survey of Iceland
- National Land Survey of Denmark and the Faroe Islands
- Centre for Topographic Information, Canada
- US Geological Survey, USA
- Conservation of Arctic Flora and Fauna (CAFF) Working Group of the Arctic Council

Actions required from the NSHC 30th Conference:

The Conference is invited to take note of the information.