



Arctic SDI basic presentations

The standardized Arctic SDI slide show consists of 2 basic presentations of which one is technical.

Supplementary slides can be found in a separate file.

- Arctic SDI standard presentation_V1.0_150311
- Arctic SDI technical presentation_V1.0_20150219
- Arctic SDI supplementary slides _V1.0_150311
 - ✓ The series are to be seen upon as gross series.
 - ✓ They can be used as they are but it is recommended to edit/modify/complete due to the audience
 - ✓ Slides from the supplementary could be used as complement

Arctic Spatial Data Infrastructure

- A circumpolar mapping initiative -

Name of conference or meeting
Place

Name
Organization or logo

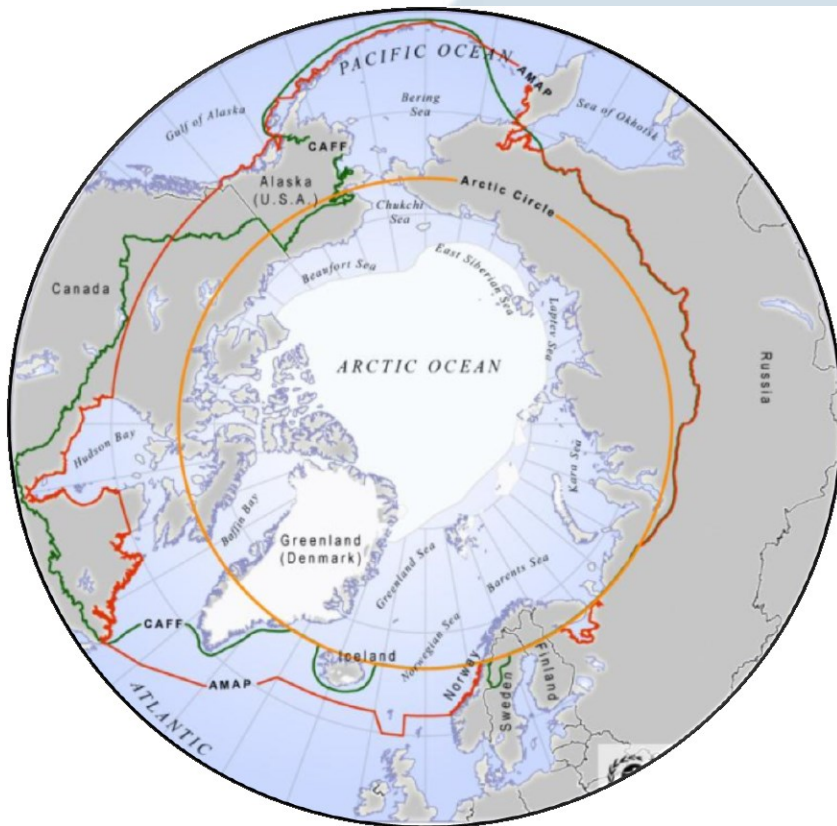
www.arctic-sdi.org

Name
Organisation or logo





The Arctic



- 1/6 of the earth's landmass
- 30 mill km² / 11.5 mill mi²
- 8 countries/4 mill people
- 24 hours- all time zones



What is a Spatial Data Infrastructure?

SDI is a ***coordinated series of agreements*** on technology standards, institutional arrangements, and policies that ***enable*** the ***discovery and use*** of ***geospatial information*** by ***users*** and for purposes other than those it was created for

Kuhn, W. (2005) presentation "Introduction to Spatial Data Infrastructures".



Spatial Data Infrastructure Basics

- Tools and services connect via computer networks to the various sources through a ***common end point***
- **Standards** are essential
- **agreements and coordination** is necessary
- Distribution of data and metadata are managed by the ***data originator and/or owner***



Arctic SDI

A cooperation between the National Mapping Agencies of

Canada

Denmark including Greenland and Faroe Island

Finland

Iceland

Norway

Russia

Sweden

USA

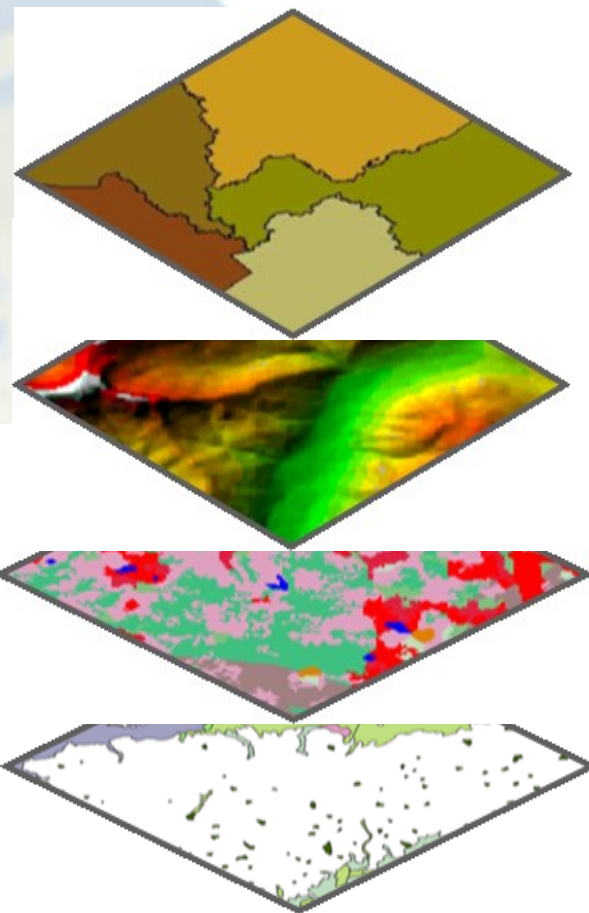




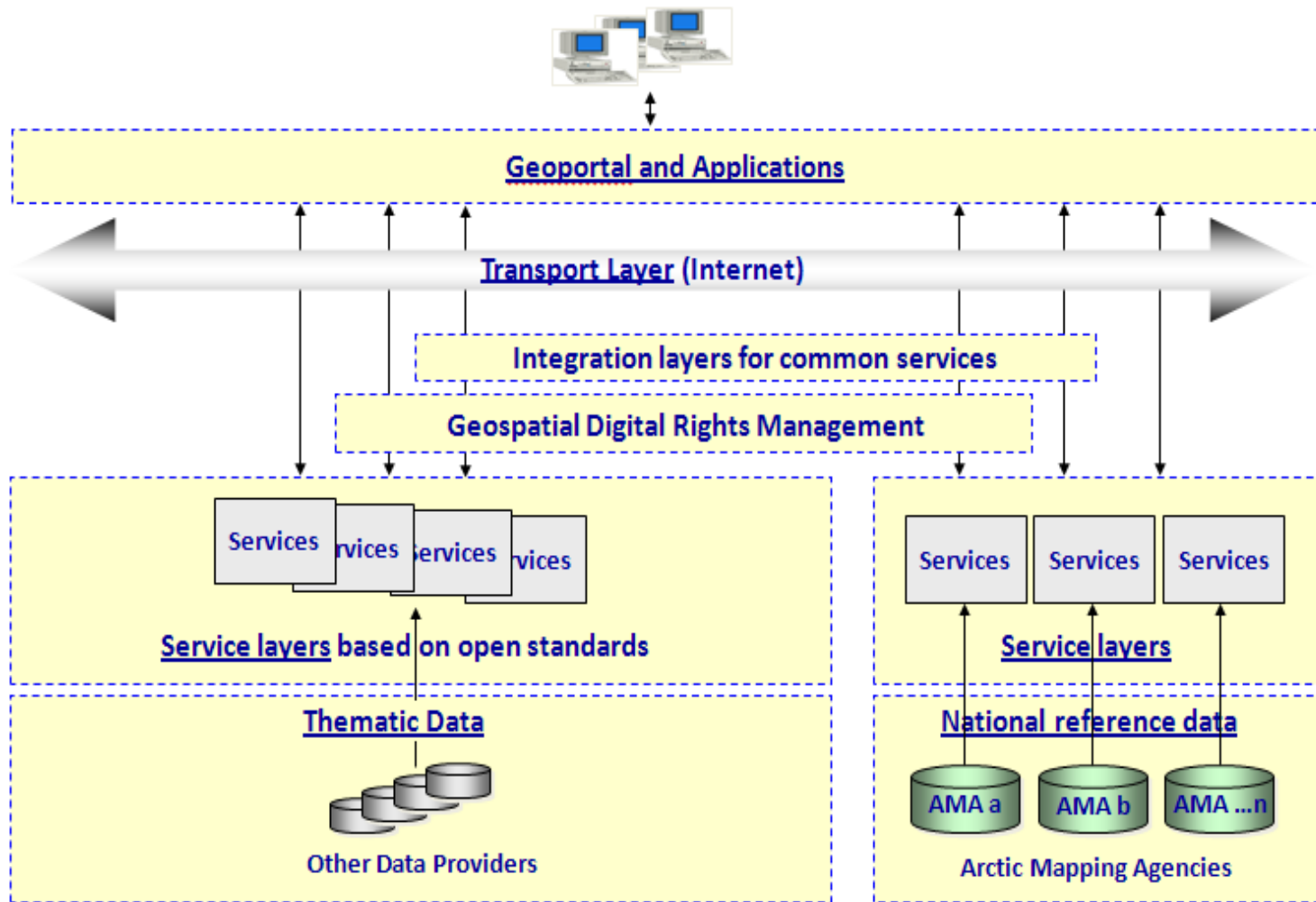
Main Content of the Arctic SDI

The Arctic SDI is an infrastructure that provides a web portal with easy access to:

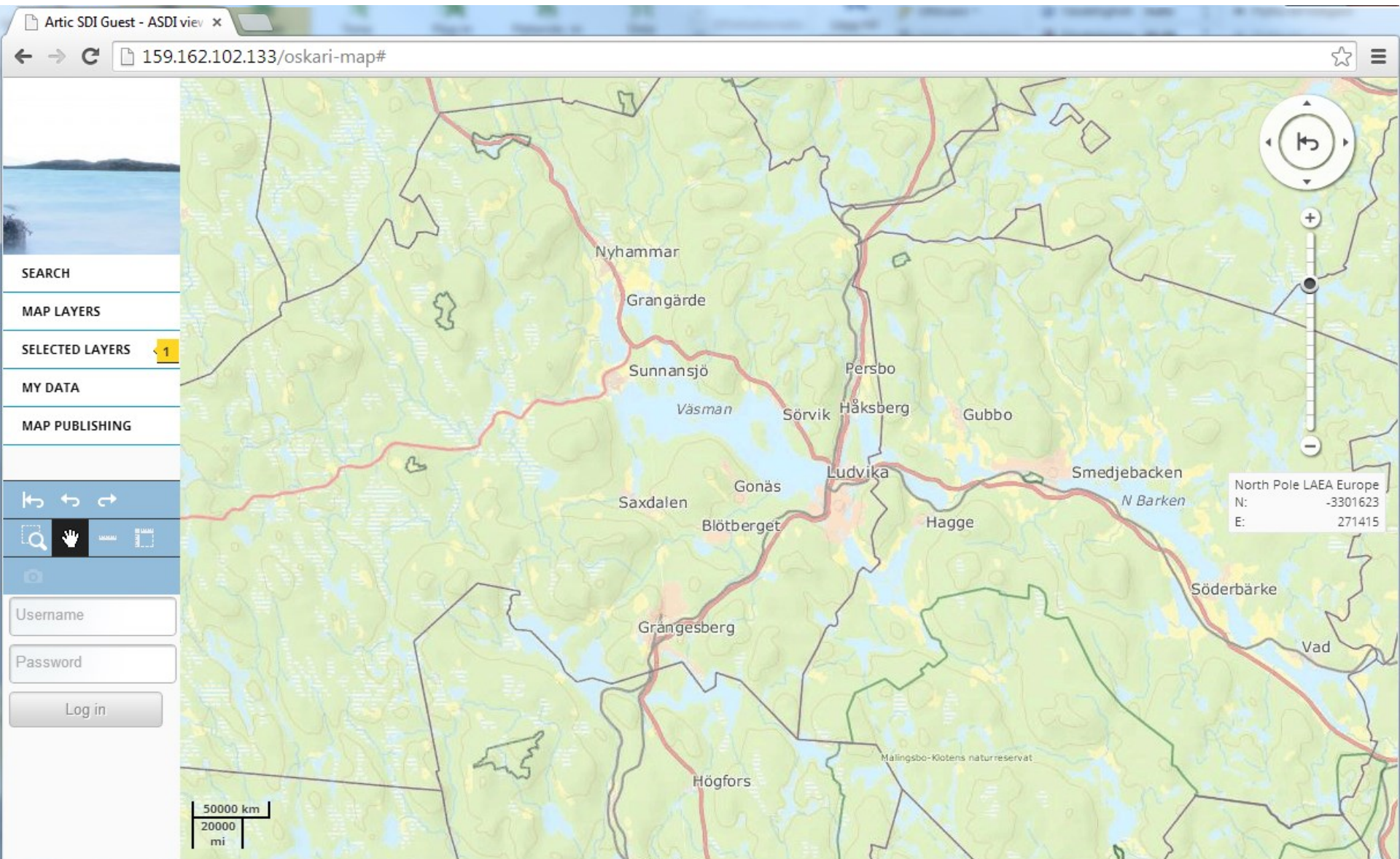
- A geoportal for geospatial data viewing and discovery
- A searchable metadata catalogue
- Authoritative reference data as a Web Map Service (WMS)
- Thematic data (birds, icecover, ship routes, land cover change, flora etc.)



Architecture of the Arctic SDI



1:250k Basemap from National Mapping Agencies



Location Search

Artic SDI Guest - ASDI view x

159.162.102.133/oskari-map

Apps Bookmarks Inbox - rdanderson... Quicktime Time and... USGS WebEx Enterpr... DOI Remote Access DOI Access Portal - ... myUSGS 4.0- AHTWG https://webforms.us... Calendar - Calendar USGS AK GIS Workin... ed, tod, tom: Todoist TOMIS | Sign In Alaska Map Plannin...

SEARCH

MAP LAYERS

SELECTED LAYERS

MY DATA

CREATE MAP

Username

Password

Log in

Search

Angoon	Hoonah-Angoon Census Area, United States	city, village,...
Barrow	North Slope Borough, United States	city, village,...
Bethel	Bethel Census Area, United States	city, village,...
Cordova	Valdez-Cordova Census Area, United States	city, village,...
Dillingham	Dillingham Census Area, United States	city, village,...
Eagle	Southeast Fairbanks Census Area, United States	city, village,...
Haines	Haines Borough, United States	city, village,...
Homer	Kenai Peninsula Borough, United States	city, village,...
Juneau	Juneau City and Borough, United States	city, village,...
Kenai	Kenai Peninsula Borough, United States	city, village,...
Ketchikan	Ketchikan Gateway Borough, United States	city, village,...
Kotzebue	Northwest Arctic Borough, United States	city, village,...
Nenana	Yukon-Koyukuk Census Area, United States	city, village,...
Nome	Nome Census Area, United States	city, village,...
Palmer	Matanuska-Susitna Borough, United States	city, village,...
Petersburg	Wrangell-Petersburg Census Area, United States	city, village,...
Seward	Kenai Peninsula Borough, United States	city, village,...
Sitka	Sitka City and Borough, United States	city, village,...
Skagway	Skagway Municipality, United States	city, village,...

Search Results

Nenana

Yukon-Koyukuk Census Area, United States

city, village,...

Close

North Pole LAEA Europe

N: 4867050

E: 3701226

Metadata Search

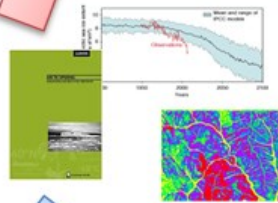
The screenshot displays the Arctic SDI Metadata Search interface. On the left, a sidebar contains navigation links: SEARCH, MAP LAYERS, SELECTED LAYERS (1), MY DATA, and CREATE MAP. Below these is a login section with fields for Username and Password, and a Log in button. The main content area is titled 'Search' and has two tabs: 'Location Search' and 'Metadata Search'. The 'Metadata Search' tab is active, showing a list of search results under the heading 'Search Results'. Each result includes a title, a brief description, and a link to the full record. The results are as follows:

Name
Permafrost decay rates for frozen peatlands in northern Quebec, CAFF
Distribution of the eiders.
Number of marine mammal species in Arctic marine regions, Conservation of Arctic Flora and Fauna (CAFF)
Circumpolar map of all polar bear subpopulation - Davis Strait, Conservation of Arctic Flora and Fauna (CAFF)
Sites of existing river biotic and abiotic data in the CAFF designated zone., CAFF
CBMP Arctic Marine Areas (AMAs), CAFF
Species richness of marine mammals, Conservation of Arctic Flora and Fauna (CAFF)
Mean trophic levels in seven sub-Arctic and Arctic Large Marine Ecosystems, Conservation of Arctic Flora and Fauna (CAFF)
Distribution of Arctic Char species, CAFF
Large Marine Ecosystems (LMEs) of the Arctic area, CAFF
Terrestrial monitoring sites as identified in CBMPs terrestrial monitoring plan, CAFF
Eight Arctic Marine Areas, Conservation of Arctic Flora and Fauna (CAFF)
Circumpolar map of all polar bear subpopulation
Circumpolar map of all polar bear subpopulation - Chukchi Sea, Conservation of Arctic Flora and Fauna (CAFF)
Alternative delineations between Canadian polar bear subpopulations, Conservation of Arctic Flora and Fauna (CAFF)
Regions used to enumerate Arctic marine mammal species, Conservation of Arctic Flora and Fauna (CAFF)

On the right, a map of the Arctic region is displayed, showing the Arctic Ocean and surrounding landmasses. A red line indicates a search area or boundary. A scale bar at the bottom left shows 200 km and 200 miles. A coordinate box on the right indicates the North Pole LAEA Europe coordinates: N: 3220464, E: 2837772.



Action

Decision
support

Visualization

Data Collection
(Feeds)

Download

Registries

View

Processing

Services

Data Storage





A Short History

Arctic SDI discussions have been ongoing for a number of years

1990s **GIT Barents**, Finland, Norway, Russia and Sweden

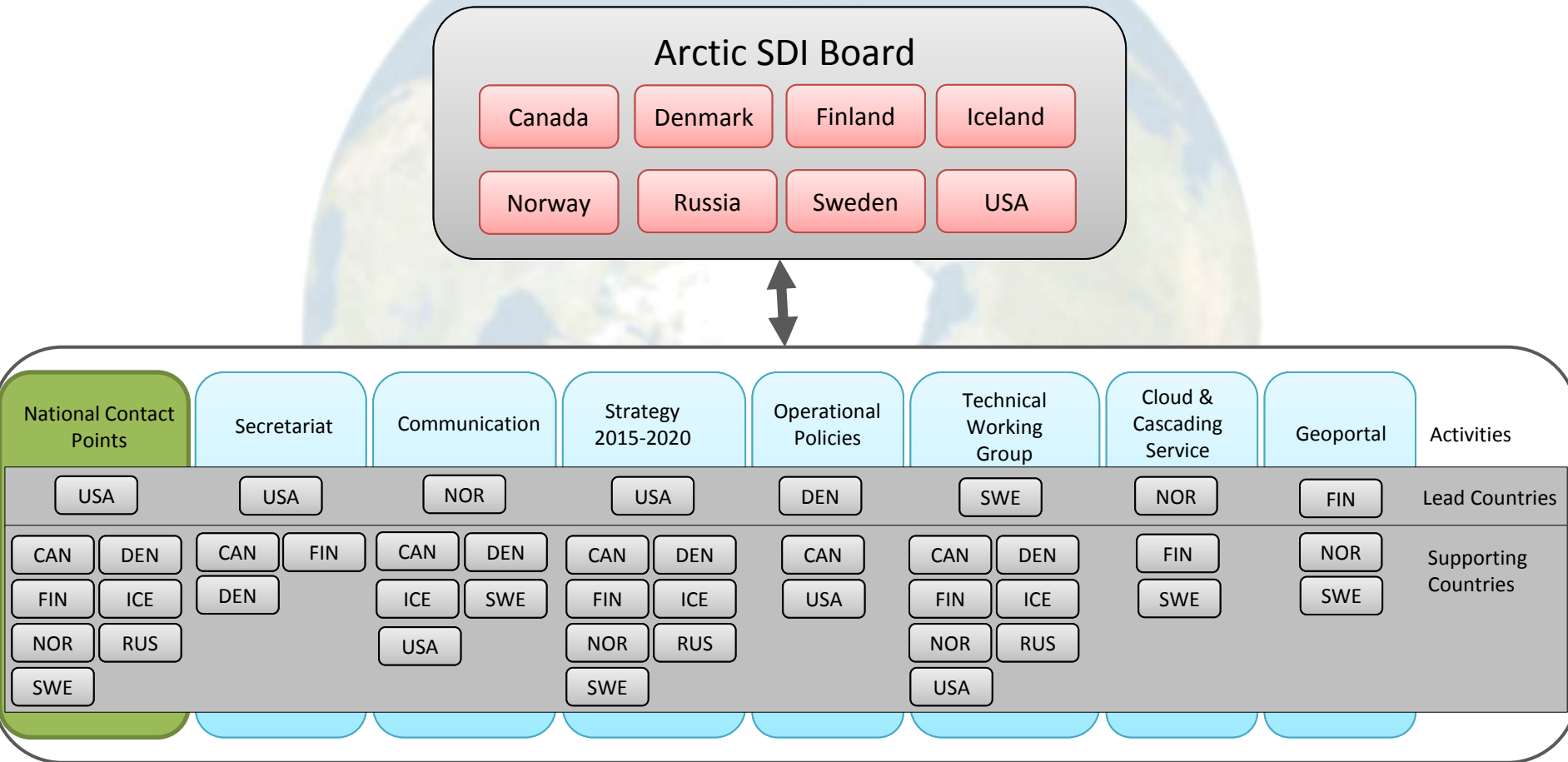
2007 **Yellowknife Declaration** – GeoNorth I Conference

2009 Formal **Arctic Council** support – SAO meeting

2011 The **Arctic SDI** project **launched** by the 8 National Mapping Agencies with CAFF acting as a link to the SAOs

2014 **MoU, Memorandum of Understanding** signed, new governance, commitment to responsibilities & resources

Arctic SDI Organizational Structure





Aim and Vision of Arctic SDI

Aim: To provide politicians, governments, policy makers, scientists, private enterprises and citizens in the Arctic ***access to geographically related Arctic data***, digital maps and tools to facilitate monitoring and decision making

Vision: An Arctic SDI – based on **sustainable** co-operation between mandated national mapping organizations – which will ***provide for access to spatially related reliable information over the Arctic*** to facilitate monitoring and decision making





Users, Stakeholders and Data Providers

- AC Working Groups (CAFF, AMAP, EPPR, PAME)
- Academic institutions in the Arctic
- Government and public sector
- Business, media, citizens, NGOs,...



Benefits

How can the Arctic SDI serve the AC WGs?

- Can be used for visualizing the work of the Arctic Council and their WGs
- Supporting stakeholders in meeting their goals and objectives by using reliable, interoperable, authoritative geospatial reference data from the National Mapping Agencies of the Arctic
- Provides a reference data base-map for viewing thematic datasets
- Providing stakeholders with a tool for more robust management and manipulation of data thus supporting monitoring and decision making
- Can be used to provide access to WG data through both the geoportal and metadata catalog



Phases of the Arctic SDI

Structuring Phase 2010/2011

- Arctic Council Links
- Project Management
- Technical Group
- Steering Committee

Establishing Phase 2011/2014

- Memorandum of Understanding, 2014
- Simplified Governance
- Reference Model
- Working Groups Established

Operational Phase 2014/2015

- Geoportal
- Metadata Catalogue
- Web Map Service- National Mapping Data
- Thematic Data Provider Partnerships- CAFF

SDI Engagement Phase 2015/2020

- Leverage Global/National SDI Communities
- Stakeholder Engagement and Requirements
- From Strategy to Roadmap to Projects
- SDI Interoperability
- Resource Allocation and Business Models
- Voluntary Resource Commitment to Tasks
- Performance Metrics
- Standards Coordination



2014 – Status

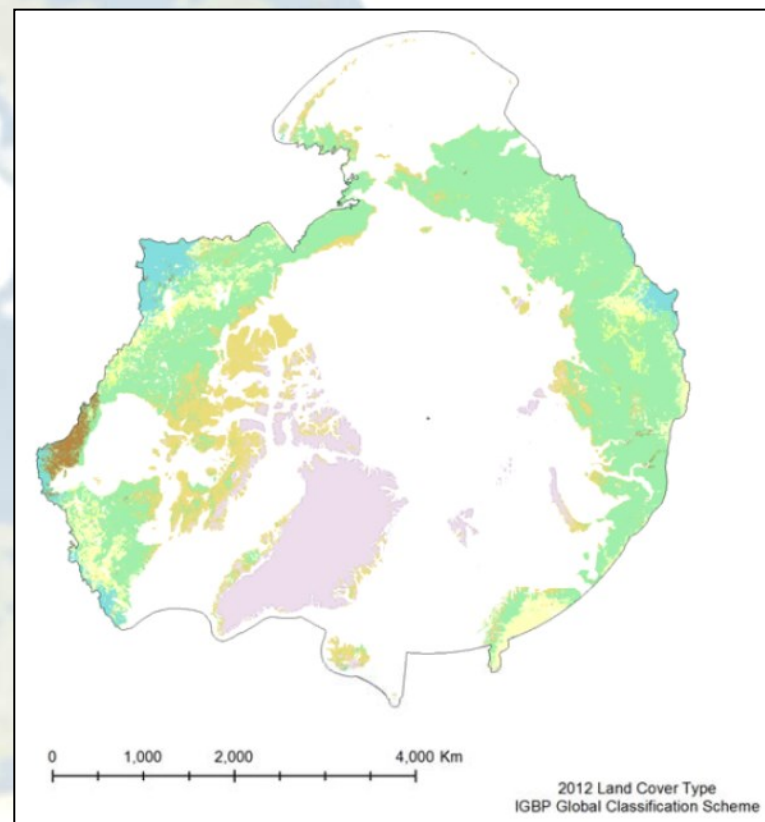
- Geoportal
- Metadata Catalogue
- Web Map Reference Data Service 1:250.000
- CAFF thematic data
- Continued dialogue with Arctic Council Working Groups
- Strategic Plan 2015 – 2020

WG Example:

CAFF - Earth Observation Products

CAFF commissioned Michigan Tech to develop circumpolar earth observation products from MODerate resolution Imaging Spectroradiometer (MODIS) sensor

- Approximately 6,000 files across 12 products
- Time-series from 2002
- 36 spectral bands
- 250, 500, 1000m resolutions
- 55 tiles at 250m to cover CAFF defined pan-Arctic extent
- Lambert Azimuthal Equal Area Polar Projection





Arctic SDI Role in CAFF Project

- Arctic Spatial Data Infrastructure (Arctic SDI) enables geospatial data discovery and sharing through Geoportal and Metadata Catalogue
- Data are housed and Web Mapping Services (WMS) are served from CAFF
- WMS were added to Arctic SDI Geoportal and dataset metadata were harvested into the Arctic SDI Metadata Catalogue
- Distributed Arctic SDI effort supporting all project components including assistance from Canada, Denmark, Finland, Iceland, Norway & Sweden

CAFF – EOP Available on Arctic SDI Geoportal

Arctic SDI Guest - ASI x

159.162.102.133/oskari-map

Apps Bookmarks Inbox - rdander... Quicktime Time... USGS WebEx En... DOI Remote Ac... DOI Access Port... myUSGS 4.0- A... https://webfor... Calendar - Cale... USGS AK GIS W... od, tod, tom: To... TOMIS | Sign In

Map Layers

By Theme By Data Provider

Search map layers.

Search map layers by the name of the map layer, the name of the data producer or the keyword describing the map layer.

ASDI (1)

CAFF (8)

CAFF Albedo

CAFF CDOM

CAFF Chlorophyll

CAFF LandCoverType

CAFF PrimaryProductivity

CAFF SeaSurfaceTemperature

CAFF SnowCoveredArea

CAFF Vegetation

Username

Password

Log in

North Pole LAEA Europe
N: 5253479
E: -113673

1000 km
500 mi

2:16 PM
12/2/2014



Future Examples

- Access to relevant and updated **thematic geospatial** information covering the entire circumpolar region
- Visualizing the work of the Arctic Council and its WGs
- Possibilities for governmental authorities and decision makers to always have access to receive relevant and updated information
- Daily use of the project's web map services in schools and universities in the Arctic and elsewhere.
- Possibilities for media and the public to receive relevant and updated information
- Possibilities to foster cooperation with industry on Arctic issues



How Can You Contribute ?

- Provide digital access to your thematic data
- Manage your data according to international standards for data
- Demand standards to be applied by partners producing or distributing your data
- Update the metadata information for your data in the metadata catalogue
- Visit the Arctic SDI website to learn more

Thank you!

Name of presenter
Organization or logo

Name of presenter
Organization or logo



