ARCTIC SDI
Arctic Spatial Data Infrastructure

Enabling Access to Arctic Location Based Information

Jani Kylmäaho
Arctic SDI Geoportal WG Lead
National Land Survey of Finland

INSPIRE Conference
29 September 2016

arctic-sdi.org

http://wallpaper.imcphoto.net/animals/polar-bear/polar-bear-on-ice.jpg

http://www.noaanews.noaa.gov/stories2010/images/bearded_seal.jp
g

http://www.sas.rochester.edu/ees/pmag/arctic/arctic2000/01ArcticFlora.jpg

http://www.landsbjorg.is/assets/felagidmyndir4/snj%C3%B3b%C3%ADll%202.jpg

Improve access to reliable data for

Monitoring,
Management,
Emergency preparedness and
Decision making

in the Arctic

Participating Countries

Canada
Norway
Finland
Russia

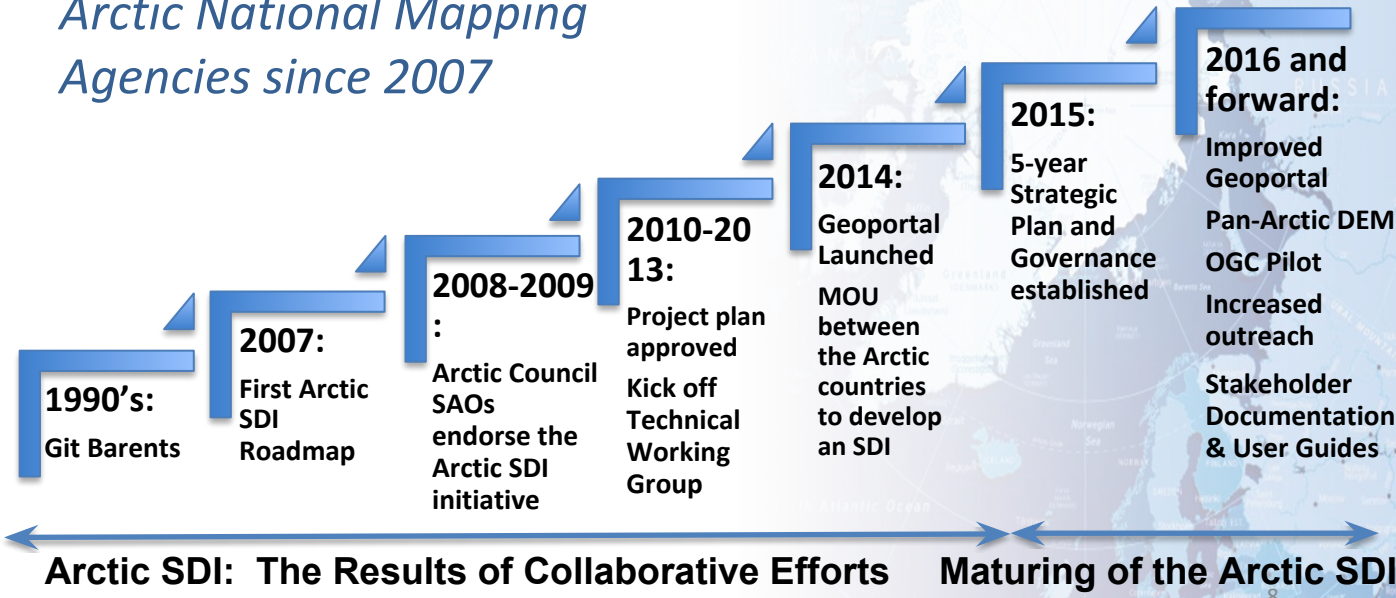
Denmark
Sweden
USA
Iceland

USGS, Chair 2015-2017

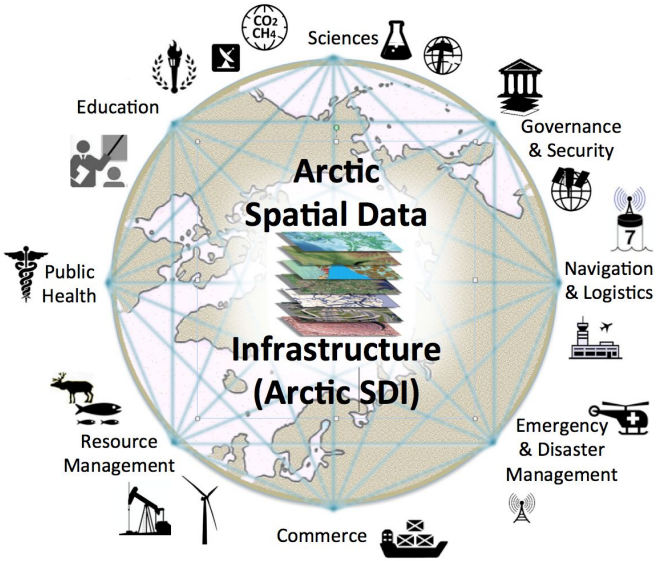
NLS FI, Chair 2017-2019

A Brief History of the Arctic SDI

… a voluntary collaboration of the 8 Arctic National Mapping Agencies since 2007



A Collaborative Model in the Arctic SDI



- Working with stakeholder organizations to make their key data available, with a focus on the Arctic Council
- Understanding the needs and requirements of stakeholders
- Information Management best practices (lifecycle of geospatial data)
- Open standards and interoperability
- Helping data contributors and users understand how to participate

Graphic Source: OGC

Arctic Council Working Groups

ACAP ARCTIC CONTAMINANTS ACTION PROGRAM

Sustainable Development Working Group

PAME
Protection of the Arctic Marine Environment

EPPR Emergency Prevention, Preparedness and Response

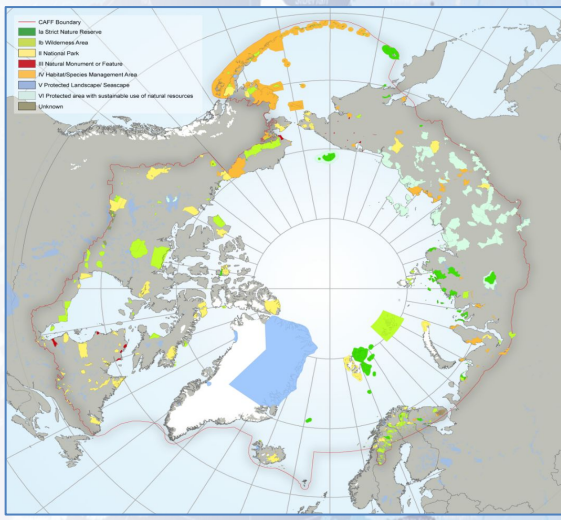
CAFF
Conservation of Arctic Flora and Fauna

AMAP Arctic Monitoring and Assessment Programme

Capacity Building

SDI Manual for the Arctic with guidelines & practices for

- Data management and sharing
- SDI development
- Standardization guidelines
- Efficient monitoring and decision making
- Key Performance Indicators
- Evaluation once in two years



Open Geospatial Consortium (OGC) Arctic Spatial Data Pilot - Climate Change Scenarios

- Scenario based video – how to
  - break down information silos
  - improve access to reliable data for **monitoring, management, emergency preparedness and decision making** in the Arctic
- Address Arctic specific issues, like zero/low bandwidth
- Increase awareness of Arctic SDI

http://www.opengeospatial.org/projects/initiatives/arcticsdp

OGC® Making location count.

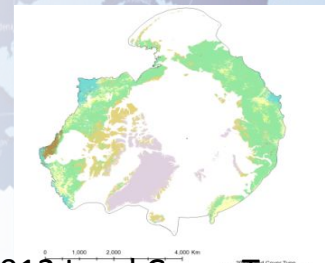
Natural Resources Canada

USGS science for a changing world

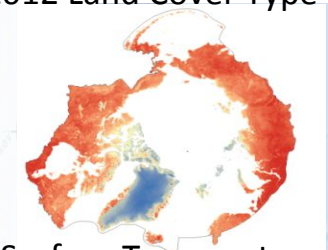
ARCTIC SDI Arctic Spatial Data Infrastructure

Technical Support

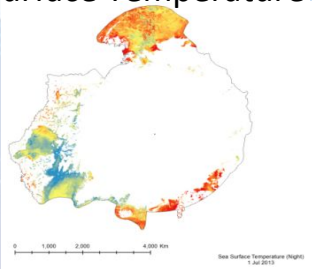
- Assisting CAFF WGs with use their thematic data
- MODIS satellite data derived products:
  - Vegetation Indices (incl. NDVI)
  - Land Cover Type
  - Snow Covered Area
  - Sea Surface Temperature (SST)
  - Marine Chlorophyll-a
- Time-Series Migratory Bird Index
- …



2012 Land Cover Type



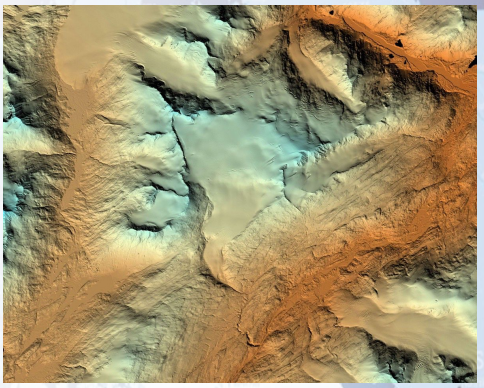
Land Surface Temperature



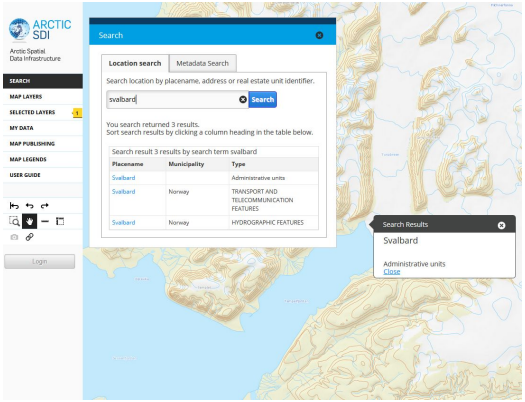
Sea Surface Temperature

Data Resources

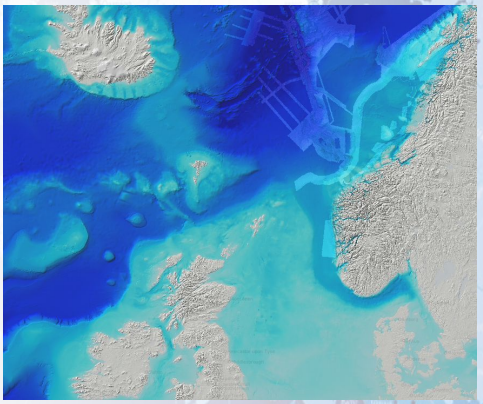
- Pan-Arctic Digital Elevation Map
- Marine Data
- Gazetteer Database and Search
- Arctic Reference Basemap



Pan-Arctic DEM



Gazetteer search



Shaded relief for depths

ARCTIC SDI Arctic Spatial Data Infrastructure

Authoritative Reference Basemap

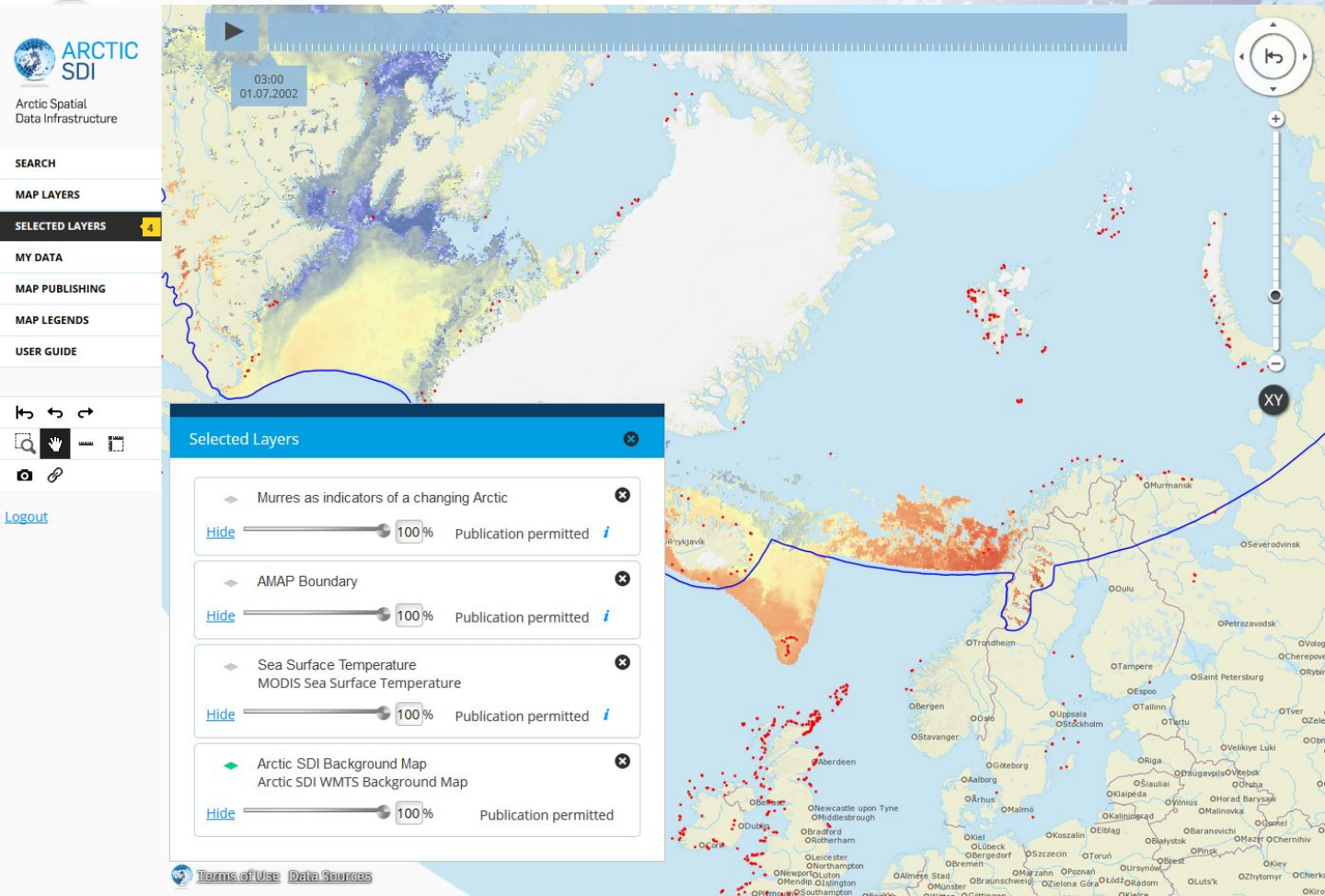
arctic-sdi.org

Provided Directly from the **8 Arctic National Mapping Agencies**

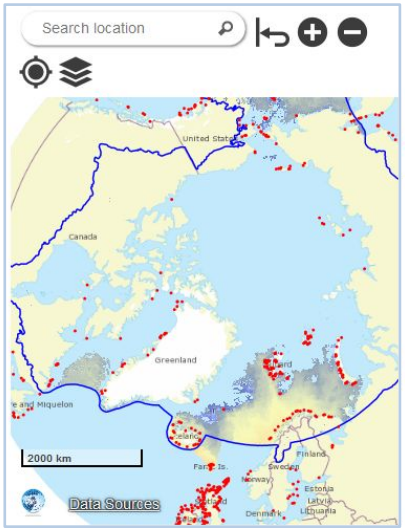
Southern Svalbard: Arctic SDI Basemap vs. Google Maps

- **Common Cartographic Specification**
- **A Trusted Source of Detailed Information**

Arctic SDI Geoportal



Embedded Maps



2012 Arctic Report Cards describe dramatic changes in the Arctic (December 4, 2012)

December 4, 2013, U.S.A.- The Arctic Council, through the Arctic Monitoring and Assessment Programme (AMAP) and the Conservation of Arctic Flora and Fauna's (CAFF) Circumpolar Biodiversity Monitoring Programme (CBMP), has contributed to the Arctic Report Card, an annual report released today by the National Oceanic and Atmoshperic Administration (NOAA) that monitors the often-quickly changing conditions in the Arctic.

The peer-reviewed report contains contributions from 141 authors from 15 countries. For this year's issue CAFF's CBMP developed and edited the terrestrial and marine ecosystem chapters in cooperation with others, while AMAP organized an independent peer-review process involving international experts.

The Arctic region continued to break records in 2012—among them the loss of summer sea ice, spring snow cover, and melting of the Greenland ice sheet. This was true even though air temperatures in the Arctic were unremarkable relative to the last decade, according to the report.

Major findings include:

- ***Snow cover***: A new record low snow extent for the Northern Hemisphere was set in June 2012, and a new record low was reached in May over Eurasia.
- ***Sea ice***: Minimum Arctic sea ice extent in September 2012 set a new all-time record low, as measured by satellite since 1979.
- ***Greenland ice sheet***: There was a rare, nearly ice sheet-wide melt event on the Greenland ice sheet in July, covering about 97 percent of the ice sheet on a single day.
- ***Vegetation***: The tundra is getting greener and there's more above-ground growth. During the period of 2003-2010, the length of the growing season increased through much of the Arctic.
- ***Wildlife and food chain***: In northernmost Europe, the Arctic fox is close to extinction and vulnerable to the encroaching Red fox. Additionally, massive phytoplankton blooms below the summer sea ice suggest estimates of biological production at the bottom of the marine food chain may be ten times too low.
- ***Ocean***: Sea surface temperatures in summer continue to be warmer than the long-term average at the growing ice-free margins, while upper ocean temperature and salinity show significant interannual variability with no clear trends.
- ***Weather***: Most of the notable weather activity in fall and winter occurred in the sub-Arctic due to a strong positive

Oskari – Geoportal for ASDI and INSPIRE

- Open Source Framework for Geoportals
- Easy-to-use tools for using Distributed SDI's like INSPIRE, European Location Framework ELF, Arctic SDI
- Built-in access to WFS 2.0 API's with Complex Schemas
- Embedded Maps Tool and Integration API - like Google maps with rich SDI content
- Time Series Data Visualization
- Thematic Mapping with Statistical Information

Other Oskari Examples

ARCTIC SDI Arctic Spatial Data Infrastructure

arctic-sdi.org

ELF

SEARCH
MAP LAYERS
SELECTED LAYERS 2
MY DATA
CREATE EMBEDDED MAP
MAP LEGENDS
USER GUIDE

Username
Password
Login

English
Change language

Selected Layers

Road Link - INSPIRE 4.0
tn-ro:RoadLink (INSPIRE 4.0)
Style Default style
Hide 100 %

ELF Topographic Basemap
Hide 100 %

Feature Data

Road Link - INSPIRE 4.0

Properties

61730608L	2013-07-01T00:00:00	false
627650605L	2013-07-01T00:00:00	false
261840606L	2012-04-12T00:00:00	false
632960604L	2013-07-01T00:00:00	false
636580604L	2013-07-01T00:00:00	false
933680605L	2014-06-17T00:00:00	false
870560605L	2013-07-01T00:00:00	false
681970604L	2013-07-01T00:00:00	false

1000 m
500 ft
Terms of Use Copyright

OSKARI Guides Documentation Examples Download About Search...

Home / Examples

Examples

Live sites using Oskari

Paikkatietoikkuna.fi
The most recent release version of Oskari is in use at Paikkatietoikkuna.
Technical details

Map service of Tampere City
A service for viewing spatial data of Tampere City.

Finnish eGovernment portal
All Finnish public services are accessible through a single portal, where Oskari embedded maps are used in a number of contexts, e.g. for displaying locations of public services and for providing route instructions.
Käyntiosoite

Hallinnon karttapalvelu
A centralised service for public sector organizations for creating and integrating maps and spatial data into websites and digital services. Site requires login.

ELF
A Showcase Application for authoratitative, interoperable, cross-border reference data from Europe.

Arctic SDI
A geoportal providing a web map viewer to access the Reference Map Service covering the Arctic Region.

The Icelandic Geoportal
A development version of the Icelandic National Geoportal.

Liiteri
Liiteri provides information and statistical data about the built environment.

Spatial data service of Tampere City
Embedded map to view public services in Tampere City. Go to

Comparison of INSPIRE and Arctic SDI

- Regulated
- 28 member states
- Users: European Commission, others?
- Harmonized data models, schemas
- Interoperability via Implementation Rules and Technical Guidance

- Voluntary collaboration
- 8 national mapping agencies
- Users: Arctic Council Working Groups (for a start)
- No harmonization of data apart from Cartographic Specificaton for Arctic Basemap
- Interoperability via plain OGC/ISO and ASDI Manual

Arctic SDI Video on YouTube

Arctic SDI Fact Sheet

Information on Oskari

OSKARI


ARCTIC
SDI
Arctic Spatial
Data Infrastructure
OSKARI
arctic-sdi.org
geoportal.arctic-sdi.org
oskari.org