



**ARCTIC
SDI** Arctic Spatial
Data Infrastructure

Arctic Spatial Data Infrastructure

Enabling Access to Arctic Location Based Information

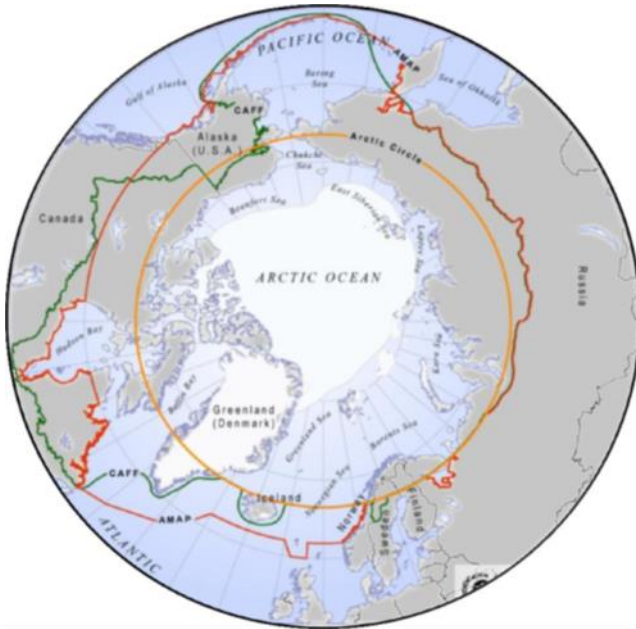
Bengt Kjellson, Sweden



ARCTIC
SDI

Arctic Spatial
Data Infrastructure

Improve access to reliable data for
Monitoring,
Management,
Emergency preparedness and
Decision making
in the Arctic



Arctic SDI is based on
voluntary commitments by
**the National Mapping
Agencies from 8 countries**
that border the Arctic Circle

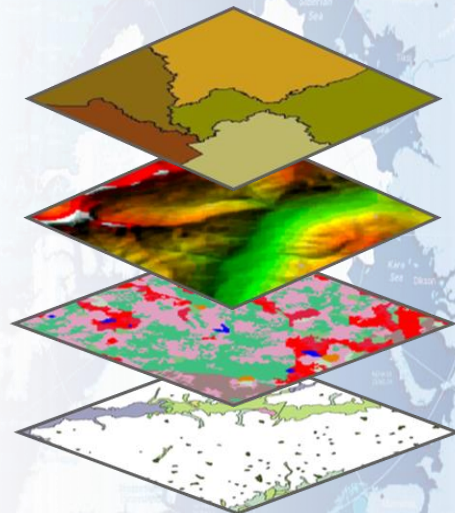
USA, Canada, Russia,
Iceland, Denmark, Sweden,
Norway, Finland

There is a signed MoU towards cooperative
development of an Arctic SDI.

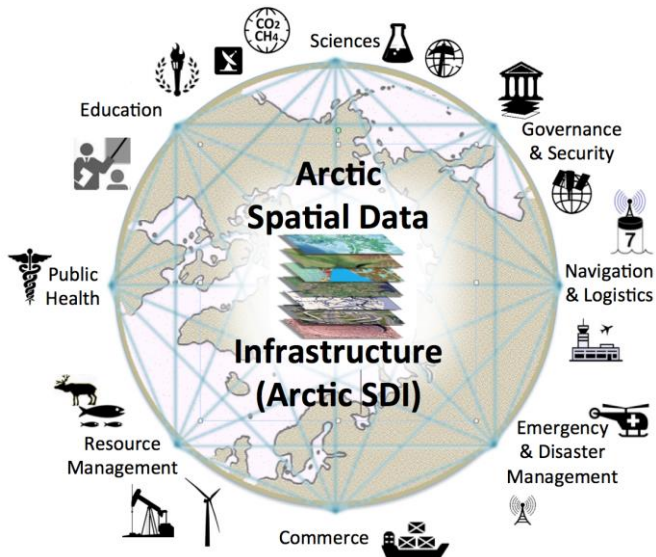
Main Content of the Arctic SDI

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) 1:250.000
- Thematic data (birds, ice cover, land cover change, flora etc.)



The Arctic SDI is focused on



- Open data standards and provision of authoritative data
- Understanding the needs and requirements of stakeholders
- Working with organizations to make their data available, with a focus on the Arctic Council
- Information Management best practices (geospatial data lifecycle)

Data

- Ecosystem-based analysis requires seamless sharing of data across jurisdictions and organizations
 - Arctic SDI is providing shared tools and information management practices to Arctic stakeholders to break down silos
 - Arctic SDI brings together the National Mapping Agencies, trusted map data and geospatial data expertise



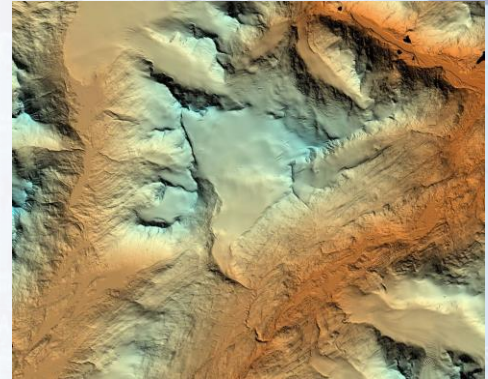
Capacity Building

SDI Manual for the Arctic with guidelines & practices for

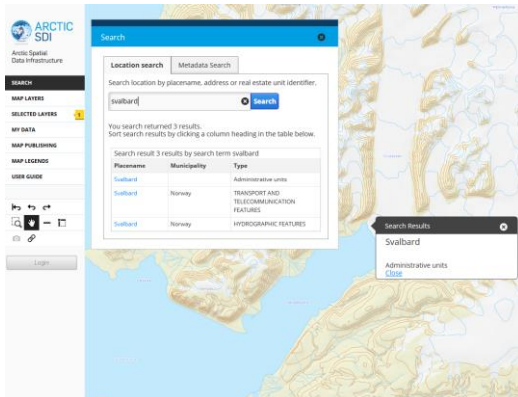
- Data management and sharing
- SDI development
- Standardization guidelines
- Efficient monitoring and decision making
- Key Performance Indicators



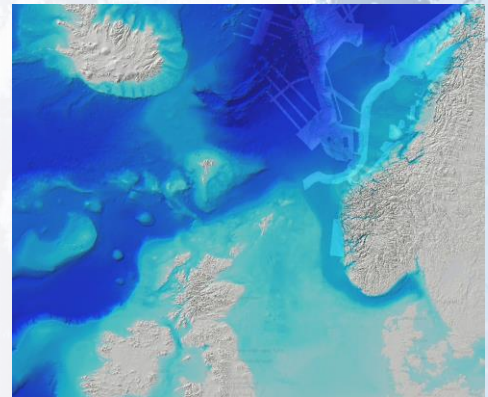
- Pan-Arctic Digital Elevation Map
- Marine Data
- Gazetteer Database and Search
- Arctic Reference Basemap



Pan-Arctic DEM



Gazetteer search



Shaded relief for depths



Arctic Spatial
Data Infrastructure

SEARCH

MAP LAYERS

SELECTED LAYERS 1

MY DATA

MAP PUBLISHING

MAP LEGENDS

USER GUIDE



Login

[Terms of Use](#) [Data Sources](#)



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

- Common Cartographic Specification
- A Trusted Source of Detailed Information



ARCTIC
SDI

Arctic Spatial
Data Infrastructure

Arctic SDI Geoportal

arctic-sdi.org



ARCTIC
SDI

Arctic Spatial
Data Infrastructure

SEARCH

MAP LAYERS

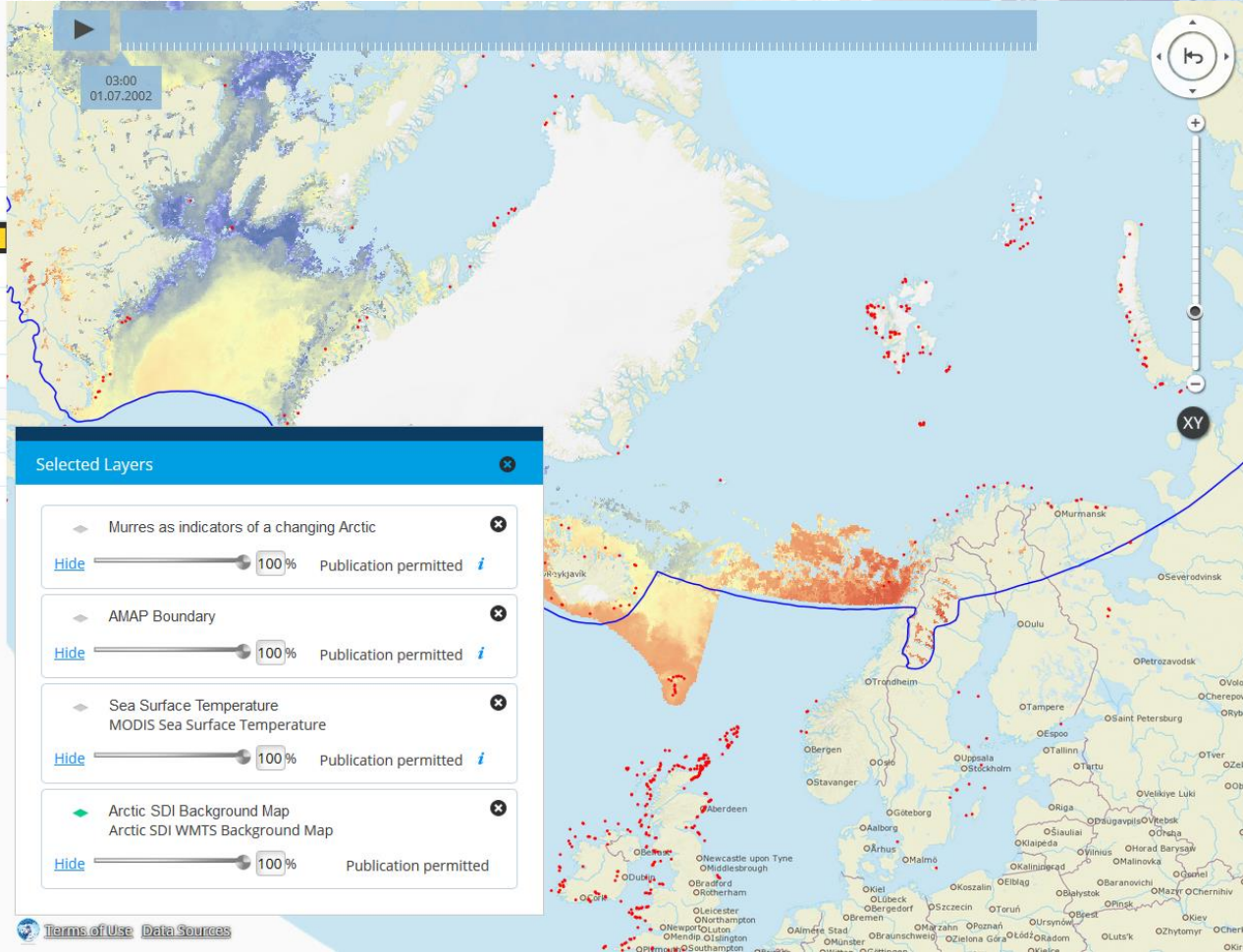
SELECTED LAYERS

MY DATA

MAP PUBLISHING

MAP LEGENDS

USER GUIDE



Selected Layers

Murres as indicators of a changing Arctic

Hide

100%

Publication permitted

i

AMAP Boundary

Hide

100%

Publication permitted

i

Sea Surface Temperature
MODIS Sea Surface Temperature

Hide

100%

Publication permitted

i

Arctic SDI Background Map
Arctic SDI WMTS Background Map

Hide

100%

Publication permitted

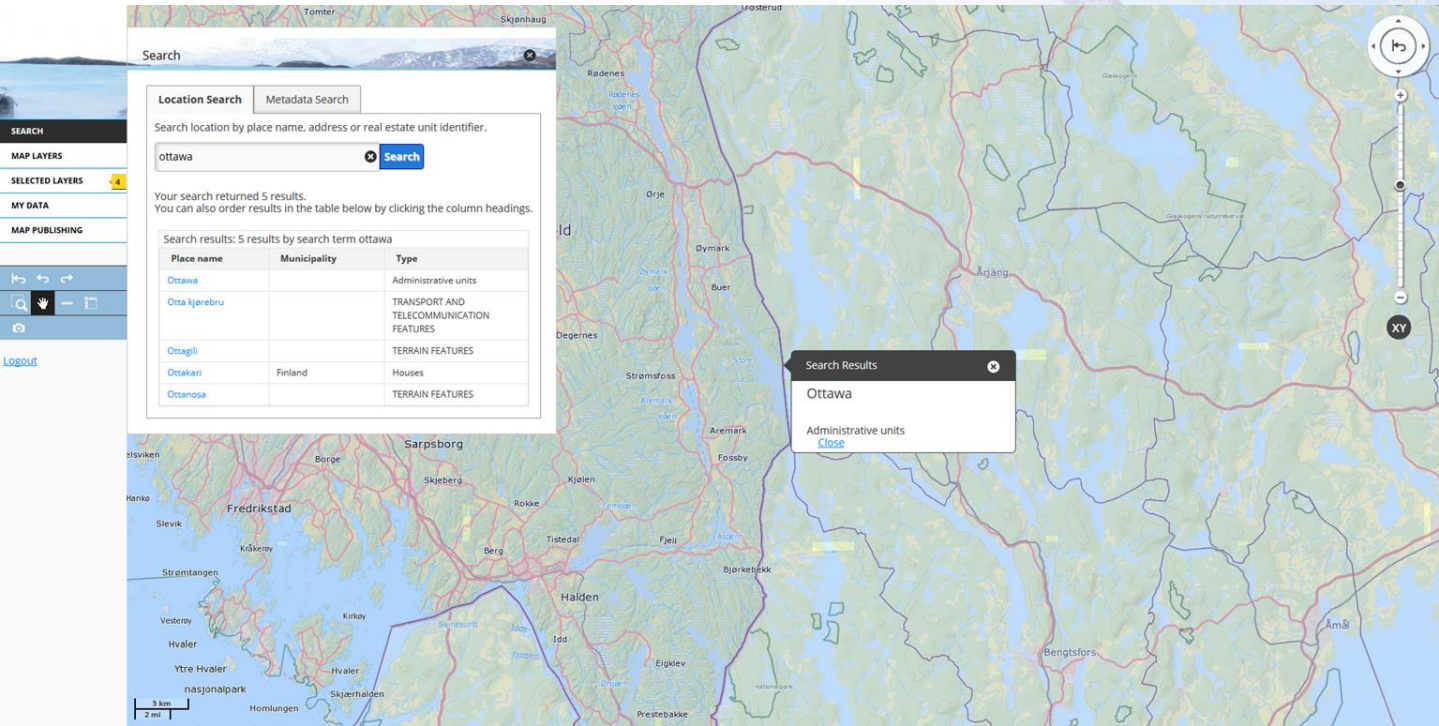


Terms of Use Data Sources

Oskari - Geoportals and Embedded maps

- For setting up Geoportals or Web GIS systems
- For creating Embedded map clients onto other websites very efficiently
- For setting up advanced web-based tools, such as decision making support services and data analysis tools
- Multilingual – English, Swedish & Finnish full coverage, 15 other languages with partial coverage
- Open Source (MIT) - see oskari.org and Oskari [GitHub](https://github.com/oskari) for more info

Location Search

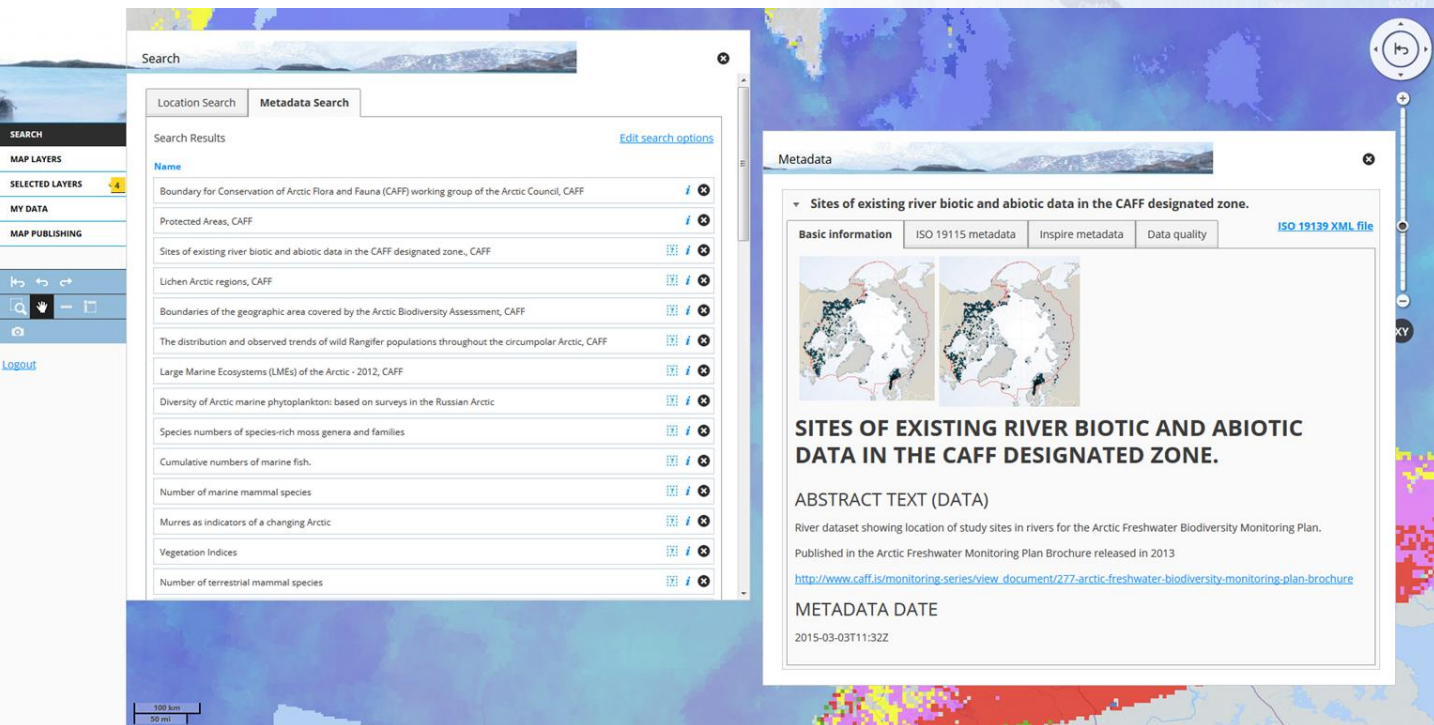


The screenshot displays the Arctic SDI web application interface. On the left, a sidebar contains navigation links: SEARCH, MAP LAYERS, SELECTED LAYERS (4), MY DATA, and MAP PUBLISHING. Below these is a 'Logout' link. The main area features a map of Norway with a search overlay. The search bar contains the text 'ottawa'. Below the search bar, a message states: 'Your search returned 5 results. You can also order results in the table below by clicking the column headings.' A table titled 'Search results: 5 results by search term ottawa' is displayed. The table has three columns: Place name, Municipality, and Type. The results are as follows:

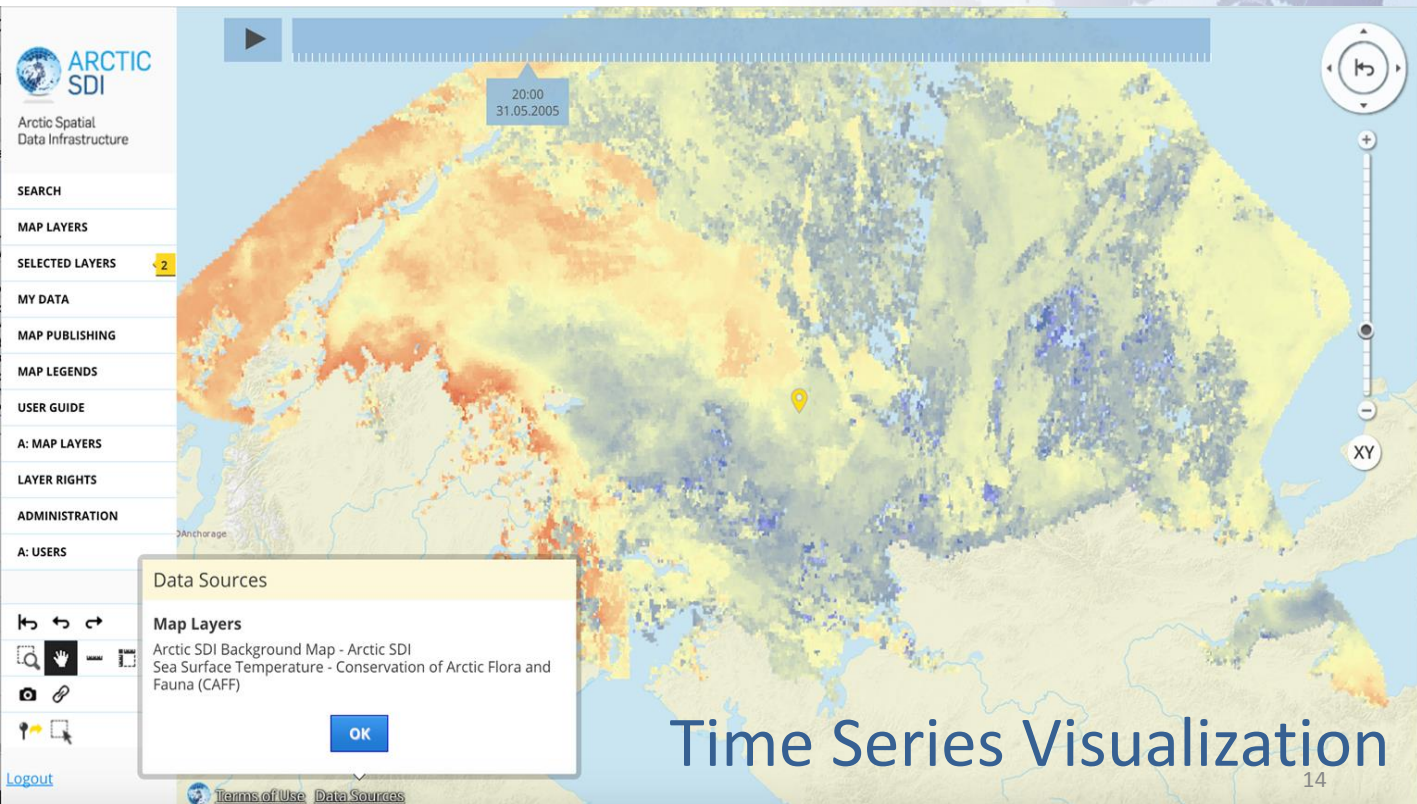
Place name	Municipality	Type
Ottawa		Administrative units
Ottå kjerebru		TRANSPORT AND TELECOMMUNICATION FEATURES
Ottagili		TERRAIN FEATURES
Ottakari	Finland	Houses
Ottanosa		TERRAIN FEATURES

A 'Search Results' popup window is open over the map, showing the selected result 'Ottawa' and the category 'Administrative units' with a 'Close' link. The map shows various geographical features and place names in Norway, including Tomter, Skjønhaug, Rødenes, Orje, Dvmark, Buer, Ålgang, Diegernes, Strømsfoss, Aremark, Fossby, Halden, Fjell, Bjørkebak, Bengtsfor, and Amål. A scale bar indicates 5 km and 2 miles.

Metadata Search



The screenshot displays the Arctic SDI Metadata Search interface. On the left, a sidebar contains navigation links: SEARCH, MAP LAYERS, SELECTED LAYERS (4), MY DATA, and MAP PUBLISHING. Below these is a 'Log out' link. The main search area is titled 'Search' and includes a 'Location Search' and 'Metadata Search' tab. The 'Metadata Search' tab is active, showing a list of search results. The results are displayed in a table with columns for Name, Location, and Actions. The first result is 'Boundary for Conservation of Arctic Flora and Fauna (CAFF) working group of the Arctic Council, CAFF'. Other results include 'Protected Areas, CAFF', 'Sites of existing river biotic and abiotic data in the CAFF designated zone., CAFF', 'Lichen Arctic regions, CAFF', 'Boundaries of the geographic area covered by the Arctic Biodiversity Assessment, CAFF', 'The distribution and observed trends of wild Rangifer populations throughout the circumpolar Arctic, CAFF', 'Large Marine Ecosystems (LMEs) of the Arctic - 2012, CAFF', 'Diversity of Arctic marine phytoplankton: based on surveys in the Russian Arctic', 'Species numbers of species-rich moss genera and families', 'Cumulative numbers of marine fish.', 'Number of marine mammal species', 'Murre as indicators of a changing Arctic', 'Vegetation Indices', and 'Number of terrestrial mammal species'. Each result has a 'Details' icon and a 'Delete' icon. A scale bar at the bottom left indicates 100 km and 50 mi. On the right, a detailed metadata view for the 'Sites of existing river biotic and abiotic data in the CAFF designated zone.' is shown. This view includes a title, a link to the 'ISO 19139 XML file', and tabs for 'Basic information', 'ISO 19115 metadata', 'Inspire metadata', and 'Data quality'. The 'Basic information' tab is active, displaying two maps of the Arctic region showing the locations of study sites. Below the maps, the title 'SITES OF EXISTING RIVER BIOTIC AND ABIOTIC DATA IN THE CAFF DESIGNATED ZONE.' is followed by an 'ABSTRACT TEXT (DATA)' section. The abstract text describes the river dataset showing the location of study sites in rivers for the Arctic Freshwater Biodiversity Monitoring Plan, published in the Arctic Freshwater Monitoring Plan Brochure released in 2013. A link to the document is provided: http://www.caff.is/monitoring-series/view_document/277-arctic-freshwater-biodiversity-monitoring-plan-brochure. The 'METADATA DATE' is listed as 2015-03-03T11:32Z.



Embedded Map Tool

Create Embedded Map

Basic settings

Website address (without http and www prefixes)

Map name (required)

Language

Map Size

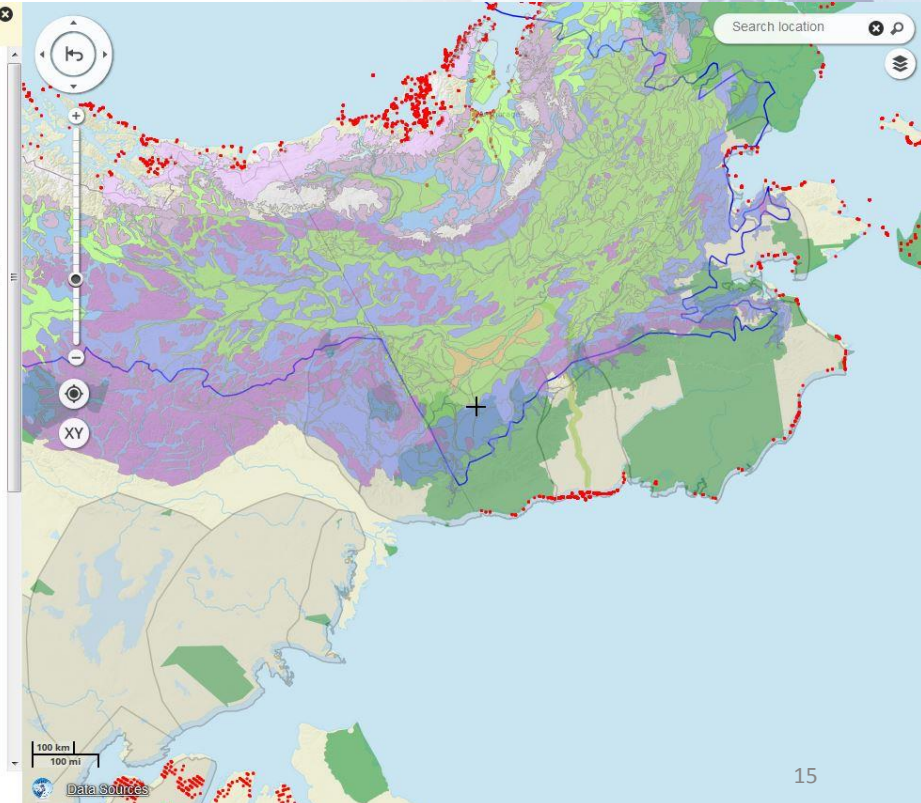
Map Layers

Tools

- ☒ Scale bar
- ☐ Index map
- ☒ Map layers menu

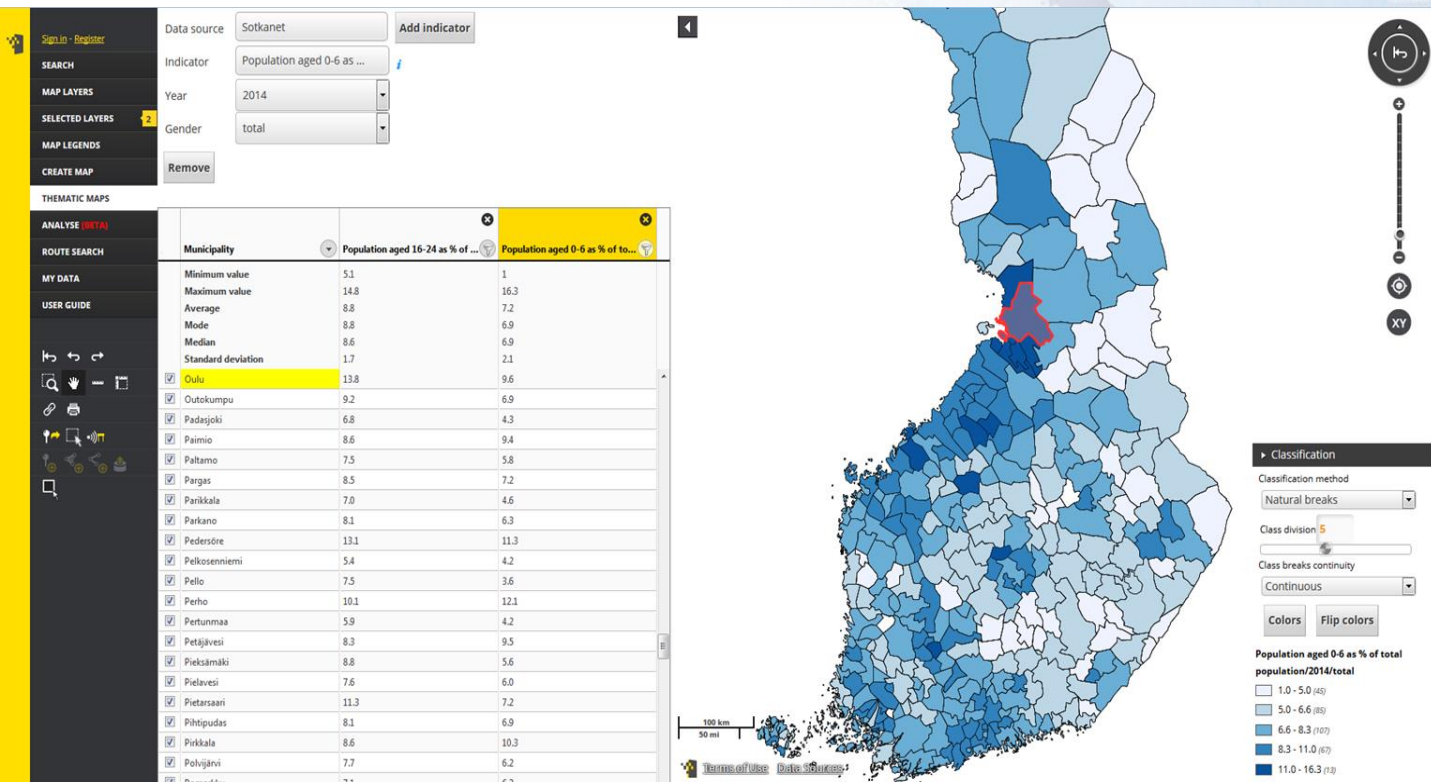
Select the background map layer. You can select the default background map layer in the map preview.

 - ☒ Arctic SDI Background Map
 - ☐ Protected Areas
 - ☐ AMAP Boundary
 - ☐ Caribou herds 2014
 - ☐ CAFF CBird
 - ☐ BioClimate Map Alaska-Yukon
- ☒ Pan tool
- ☐ Map tools
- ☒ Zoom bar
- ☒ Coordinate tool
 - ☐ Hide user interface (Use RPC interface)
- ☒ Center to location





Future development: Spatial and Statistical Data combined over Arctic



Arctic SDI Video on YouTube



Arctic SDI Fact Sheet



GEOSPATIAL DATA – A TOOL FOR BETTER INFORMED DECISIONS AND MORE EFFICIENT ADMINISTRATION IN THE ARCTIC

Improved access to geospatial data can help us better to predict, understand and react to changes in the Arctic. Responses to the impact of climate change and human activities in the Arctic requires accessible and reliable data to facilitate monitoring, management, emergency preparedness and decision making.

Important data sets are produced and distributed by many stakeholders – public and private sector – and most of it can be geographically referenced. A spatial data infrastructure provides tools for data distributors to ensure that their geospatial data is easier for users to access, validate and combine with other data.

The Arctic SDI provides such an infrastructure and its development is facilitated by the National Mapping Agencies of the eight Arctic countries.

The Arctic SDI Geoportal and the initial Arctic SDI Reference Map – the basic building blocks in the Arctic Spatial Data Infrastructure are available

- The Arctic SDI Geoportal providing a web map viewer for use by any interested user to access the Reference Web Map Service provides the



Arctic SDI Geoportal in the



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arctic-sdi.org

arctic-sdi.org
geoportal.arctic-sdi.org