Arctic Biodiversity Data Service


Contents

1. Introduction ............................................................................................................................ 1
2. Data framework ....................................................................................................................... 1
3. Data sources ............................................................................................................................ 2
4. Data management ..................................................................................................................... 2
5. ABDS Toolbox ......................................................................................................................... 2
6. Partners .................................................................................................................................. 3
7. Next steps ................................................................................................................................ 3

1. Introduction
The Arctic Biodiversity Data Service (ABDS – www.abds.is) is the data-management framework for managing data generated by the Conservation of Arctic Flora and Fauna (CAFF) Arctic Council working group and it’s Circumpolar Biodiversity Monitoring Program (CBMP). The ABDS is an online, interoperable data management system serving as a focal point and common platform for all CAFF programs and projects as will be a dynamic source for up-to-date circumpolar Arctic biodiversity information and emerging trends. The goal of the ABDS is to facilitate access, integration, analysis and display of biodiversity information for scientists, practitioners, managers, policy makers and others working to understand, conserve and manage Arctic wildlife and ecosystems. It will ensure that biodiversity data generated by CAFF are organised to guarantee a lasting legacy in a manner which facilitates:

• Data discovery and accessibility;
• Increased understanding;
• Informed and more rapid decision making;
• The widest possible exchange of relevant data;
• Highlight ongoing research; and
• Improve the visibility of the work of CAFF and its partners.

This document reports on progress made in development of the ABDS during 2013-2015.

2. Data framework
During 2013-2015 the ABDS framework was developed and made operational. This framework is built using open source solutions designed to facilitate sharing of information i.e. a GeoServer¹ and GeoNetwork². The ABDS framework provides an easy to use web interface to search geospatial data across multiple catalogs, combine distributed map services in the embedded map viewer, and publish geospatial data using online metadata editing tools and the GeoServer map server. Administrators have the option to manage user and group accounts, configure the server through web based and desktop utilities and schedule metadata harvesting from other catalogs. Explore the ABDS GeoNetwork: geo.abds.is/geonetwork

3. Data sources

Key data sources include data from the CBMP monitoring plans, networks and indices, for example remote sensed data generated via the Land cover change index; the CBMP marine, freshwater and terrestrial expert monitoring groups; the Arctic Biodiversity Assessment (ABA); the circumpolar Flora and Seabird expert groups. External parties are also welcome to make their data available via the ABDS.

4. Data management

Key data management services include - supporting network data management; assigning metadata; establishing interoperable links via the ABDS with relevant data portals; linking data nodes, to the ABDS; hosting relevant datasets that are not accessible elsewhere. Relevant datasets are being rescued and made accessible via the ABDS and metadata assigned. Remote sensed data is being processed, standards applied, made accessible via ABDS and incorporated within the Arctic Spatial Data Infrastructure (SDI). CAFF and the Arctic SDI have developed a means of facilitating access to remote sensed data developed via the CBMPs Land Cover Change Index. The ABDS now streams the first Arctic Council Working Group data into the Arctic SDI GeoPortal

CAFF projects/activities are working to ensure and develop the highest standard of data collection, quality and consistency. All datasets are being processed to ensure relevant metadata standards are applied. CAFF/CBMP, is contributing metadata to the Polar Data Catalogue, a metadata “discovery portal” and repository for Arctic and Antarctic researchers to ensure CAFF data holdings are accessible to users beyond the biodiversity world.

5. ABDS Toolbox

¹ GeoServer is a Java-based software server that allows users to view and edit geospatial data. Using open standards set forth by the Open Geospatial Consortium (OGC), GeoServer allows for great flexibility in map creation and data sharing.
² GeoNetwork is a catalog application to manage spatially referenced resources. It provides powerful metadata editing and search functions as well as an embedded interactive web map viewer. It is currently used in numerous Spatial Data Infrastructure initiatives across the world.
Data initiatives currently under development include:

- Arctic Nature Index: A pilot project being developed in cooperation with the Norwegian Nature Institute. This tool is considering how to communicate complex biodiversity data in a manner which is relevant and understandable for policy makers, natural resource managers etc. It will measure, document and report on the status of ecosystems from across the Arctic in a regular and consistent way using CBMP indicators.

- In cooperation with Arctic SDI a data delivery mechanism for the Land Cover Change index.

- The Arctic SDI is an initiative led by the National Mapping Agencies of Arctic Council member states to share spatial data across organizations, working groups and countries. The Arctic SDI received the support of Arctic Council in November 2009 and CAFF facilitates the initiative within the Arctic Council. An MoU between the mapping agencies has been finalised which focuses on a sustainable future for the Arctic SDI.

- Initiatives focused on generating information on the Arctic’s flora include; (1) The International Arctic Vegetation Database (AVA) that is working to create the first vegetation database to encompass an entire biome; and (2) the Circumboreal Vegetation Map (CBVM) which is creating a circumpolar map of the boreal forest biome.

6. Partners

CAFF is working with a range of partners to further develop cooperation, access to and management of biodiversity data (Global Biodiversity Information Facility (GBIF), Group on Earth Observations (GEO), GEO Biodiversity Observation Network (GEOBON) and the Polar Data Catalogue (PDC)) and to improve biodiversity data sharing and management. The CAFF Secretariat is a member of the International Advisory Committee for the 2016 Polar Data Forum II.

7. Next steps

Activities during the Arctic Council 2015-2017 ministerial period will include:

- Continuing to work with the CBMP to facilitate and make data from the CBMP monitoring groups and headline indicators available on ABDS;
- Continuing work on developing-establishing ABDS nodes to ensure system integrity, security and interoperability;
- Continuing development of the ABDS Toolbox including development of the Seabird Information Network (SIN) and other circumpolar species databases as relevant;
- Further developing the work process via which users can contribute data for use in ABDS;
- Increasing the understanding and profile of the ABDS amongst target audiences and partners;
- Creating a standard partnership agreement to cover data exchange and cooperation;
- Working with partners to insure their systems are interoperable with ABDS; and
- Expanding the funding base and decision maker support for the ABDS including engagement identifying partners with complimentary mandates for cost and benefit sharing.