The Arctic Freshwater Biodiversity Monitoring Plan outlines the framework for improving circumpolar monitoring efforts in Arctic freshwaters, including ponds, lakes, rivers, and their associated tributaries and wetlands. The Freshwater Plan provides Arctic countries, monitoring professionals and volunteers with a set of guidelines for common approaches and indicators in future monitoring activities, and for collecting existing data. The Freshwater Plan will facilitate information collection and analysis, identify and fill knowledge gaps, and provide better information for use in policy and decision-making.

The Freshwater Plan is the second of four long-term, integrated biodiversity monitoring plans produced by the Circumpolar Biodiversity Monitoring Program (CBMP) of the Conservation of Arctic Flora and Fauna (CAFF), the biodiversity working group of the Arctic Council, and was approved in 2013.

Canada and Sweden co-led the Freshwater Plan’s development, which involved the work of experts from Arctic nations, Permanent Participants and other Arctic Council working groups. These experts identified focal ecosystem components, key drivers and indicators, and designed optimal sampling schemes, common parameters and standardized monitoring protocols for application across circumpolar Arctic freshwaters. Components, key drivers and indicators, and designed optimal sampling schemes, common parameters and standardized monitoring protocols for application across circumpolar Arctic freshwaters.

Top CBMP Freshwater Priorities in 2014

• Finalize the collection of national metadata summarizing existing paleo, historical and contemporary monitoring data (Project 1)
• Create summary maps for focal ecosystem components (Project 2)
• Produce summary reports describing existing data (Project 2)
• Aggregate existing data, national and regional dataset compilations, QA/QC, data agreements, and formatting (Project 3)
• Secure funding to support the activities of national Freshwater Expert Networks

Links with National Priorities

Finland has national monitoring program for water quality and biological elements (flora, fauna) of lakes and rivers. The objective of national monitoring is to provide reliable information for management, conservation and sustainable use of freshwaters. Further, monitoring provides long-term data for the surveillance of global pressures like climate change and transport of hazardous substances (AMAP).

The monitoring program is designed to meet with the demands set by EU’s Water Framework Directive (WFD). Directive aims at maintaining and enhancing the ecological and chemical status of EU’s water resources. The implementation of WFD has emphasized close national cooperation in the management of Finland’s border rivers with Sweden, Norway and Russia. Cooperation is carried out on bilateral and trilateral bases by Transboundary River Commissions and regional administrations. In addition, several past and ongoing projects have focused on harmonizing and connecting the national monitoring efforts in Northern border rivers.

Circumpolar Biodiversity Monitoring Program contributes to number of international initiatives, including the NOAA Arctic Report Card, UN Convention on Biological Diversity, Global Biodiversity Outlook and Group on Earth Observations Biodiversity Observing Network (GEO BON).
Freshwater Expert Network Summary of 2013 Achievements

The Finnish Freshwater Expert Network (FEN) was assembled in Autumn 2013 and reports to the Freshwater Steering Group. The FEN will evaluate the quality and consistency of available data and monitoring stations, assess the sampling methods and schemes and make a suggestion for most representative sites to be included in the Arctic Freshwater Biodiversity Monitoring Plan. Finnish FEN consists of six experts on different fields of aquatic science:

Petri Liljaniemi has experience in monitoring and management of Finnish subarctic waters. Liljaniemi will provide abiotic data and other background information needed, and coordinate the work of the network. He works as a Hydrobiologist at Centre for Economic Development, Transport and the Environment for Lapland. Contact: Petri Liljaniemi

Jaakko Erkinaro is specialized in ecology, biodiversity, population dynamics, stock assessment and long term monitoring of arctic fish fauna. He works as Research Professor at the Finnish Game and Fisheries Research Institute. Contact: Jaakko Erkinaro

Satu Maaria Karjalainen has expertise on benthic algae communities, ecological status classification and developing of monitoring methods. She is a Biologist at Finnish Environment Institute. Contact: Satu Maaria Karjalainen

Laura Forsström has expertise on phytoplankton ecology, primary production and role of dissolved organic matter in subarctic and arctic lakes. She works as a Researcher in Department of Environmental Sciences at University of Helsinki. Contact: Laura Forsström

Jani Heino is an expert with the benthic invertebrate assemblages and aquatic biodiversity. Heino is a Academy Research Fellow at Finnish Environment Institute. Contact: Jani Heino

Seppo Hellsten is specialized in the aquatic macrophyte flora and has long experience in developing of indexes and classifications for ecological status evaluation. He works as a Division Manager at Finnish Environment Institute. Contact: Seppo Hellsten

Funding
Implementation of the Arctic Freshwater Biodiversity Monitoring Plan needs funding to cover the salary costs for employees in charge of metadata collection. Funding is also imperative to cover the costs of the activities of FEN (mainly travel, accommodation and meeting costs for domestic and international meetings and workshops). The Finnish Ministry of the Environment has supported the salary costs for data collection in 2013 for $13,6 K. Funding for labour costs and expert group activities has been applied for in 2014.

Communication
Year 2013 was a starting year for the implementation of the Arctic Freshwater Biodiversity Monitoring Plan and the activities concentrated on data collection and invitation of experts to national network. Communication with other Arctic actors was limited to regular teleconferences between Freshwater Steering Group (FSG) members. Domestic meetings with FEN and international meetings with steering group members will take place during 2014. A larger expert workshop between FEN members of different Arctic countries is planned for May 2015.

Data
Existing data has been gathered during the Autumn of 2013 and is currently being reviewed by the national experts, who will suggest corrections and additions to the data. The data will be delivered after it has been edited to meet the demands of the freshwater metadata databank.

For more information

Petri Liljaniemi
Centre for Economic Development, Transport and the Environment for Lapland
P.O. Box 8060
FI-96101 Rovaniemi
Finland
Telephone: +358 295 037 423
Fax: +358 16 310 340
Email: petri.liljaniemi@ely-keskus.fi
Website: www.ely-keskus.fi

Joseph Culp and Willem Goedkoop
CBMP Freshwater Steering Group Co-Chairs
joseph.culp@ec.gc.ca; willem.goedkoop@slu.se

Conservation of Arctic Flora and Fauna (CAFF)
Borgir, Nordurslod
600 Akureyri, Iceland
www.caff.is/freshwater
www.cbmp.is
caff@caff.is

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