

# Arctic Freshwater Biodiversity Monitoring Plan USA 2015-16 Implementation



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-lead 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.

Researchers collect fish in the Agashashok River, Alaska. Photo: Michael Records, USGS



## Top CBMP Freshwater Priorities in 2017

- Finalize the strategy to manage differences in sampling and processing methodologies among data sources, to facilitate circumpolar comparisons of data (Project 4)
- Assess regional and circumpolar spatial and temporal trends in Arctic freshwaters using aggregated circumpolar dataset (Projects 5 and 6)
- Develop first draft of State of Arctic Freshwater Biodiversity Report and first drafts of papers for an accompanying special issue of a scientific journal (Projects 5 and 6)
- Secure funding for Freshwater Expert Network activities (data assessment and report writing)
- Secure funding for Freshwater Steering Group Science Coordinator (to facilitate writing and completion of State of Arctic Freshwater Biodiversity Report)

## Links with National Priorities

Freshwater and ecosystem services provided by Arctic lakes and rivers are priorities for the United States. The Arctic Freshwater Monitoring Plan and work of the US Freshwater Expert Network aims to contribute to the following national priorities:

- **Provide a better understanding of freshwater security in the Arctic.** Water security is a focus of the United States as it assumes chairmanship of the Arctic Council. [Read the United States Chairmanship priorities.](#)
- **Support Arctic climate adaptation and resilience efforts including the creation of Early Warning Indicator Systems.** Through the Arctic Council, the United States seeks to enhance access to adaptation and resilience tools, and promote the development of climate change indicators and high-resolution mapping, will increase scientists, communities, policymakers and the public's understanding of the impacts of climate change.
- **Advance an integrated, landscape scale understanding of Arctic ecosystems and the potential for future change and increase our understanding of Arctic hydrology.** [Read the USGS Arctic Science Strategy 2015–2020.](#)
- **Implement the Terrestrial Environmental Observation Network.** Establish a network of environmental observatories in representative focal watersheds across the U.S. Arctic to collect, distribute, and synthesize long-term observational data needed to detect and forecast effects of a changing climate, hydrology, and permafrost regime on wildlife, habitat, and infrastructure in northern Alaska. More on the [Terrestrial Environmental Observation Network.](#)

# Freshwater Expert Network Summary of 2015-16 Achievements

**Christian Zimmerman:** Chief of Water, Ice, and Landscape Dynamics at the Alaska Science Center of the U.S. Geological Survey and Affiliate Assistant Professor at University of Alaska Fairbanks. He studies ecology of fishes and their habitats in Arctic and northern temperate aquatic ecosystems.

**Sarah Laske:** Aquatic Ecologist at the Alaska Science Center of the U.S. Geological Survey and Ph.D. Student at University of Alaska Fairbanks. She has expertise in fish ecology, community and food web analyses, and freshwater ecology.

**Matthew Whitman:** Fish Biologist with the Bureau of Land Management, Arctic Field Office. He has expertise in fish ecology, environmental monitoring, and biological assessment of Arctic aquatic ecosystems.

**Chris Arp:** Research Professor at the Water and Environment Research Center at the University of Alaska Fairbanks. He studies landscape level climate change response in lakes and wetlands, ice and water balance dynamics, and surface water interactions with permafrost

**Benjamin Jones:** Research Geographer at the Alaska Science Center of the U.S. Geological Survey. He studies landscape change, limnology, and applications of remote sensing.

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## Funding

U.S. Geological Survey supported the participation in the FSG and US FEN in 2015 – 2016 by funding travel and personnel costs. Acquisition of future funding is critical to continue involvement in production of the State of Freshwater Arctic Biodiversity Report and support FEN participation in the coming years.

## Communication

U.S. FEN members participated in the CBMP Freshwater's Inter-FEN workshop in Copenhagen in October 2015 and continued to participate in analysis and writing for the State of the Arctic Freshwater Biodiversity Report.

## Data

The U.S. FEN continued to gather data to summarize the freshwater monitoring activities within the U.S. Arctic. Data originated from various federal, state, university, and industry monitoring programs.

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## For more information

### Christian E. Zimmerman

Chief of Water, Ice, and Landscape Dynamics  
Alaska Science Center  
U.S. Geological Survey  
4210 University Dr.  
Anchorage, AK  
USA 99508  
Telephone: +1 (907) 786-7071  
Email: [czimmerman@usgs.gov](mailto:czimmerman@usgs.gov)  
Website: [alaska.usgs.gov](http://alaska.usgs.gov)

### Joseph Culp and Willem Goedkoop

CBMP Freshwater Steering Group Co-Chairs  
[joseph.culp@ec.gc.ca](mailto:joseph.culp@ec.gc.ca); [willem.goedkoop@slu.se](mailto:willem.goedkoop@slu.se)

### Conservation of Arctic Flora and Fauna (CAFF)

Borgir, Nordurslod  
600 Akureyri, Iceland  
[www.caff.is/freshwater](http://www.caff.is/freshwater)  
[www.cbmp.is](http://www.cbmp.is)  
[caff@caff.is](mailto:caff@caff.is)

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