

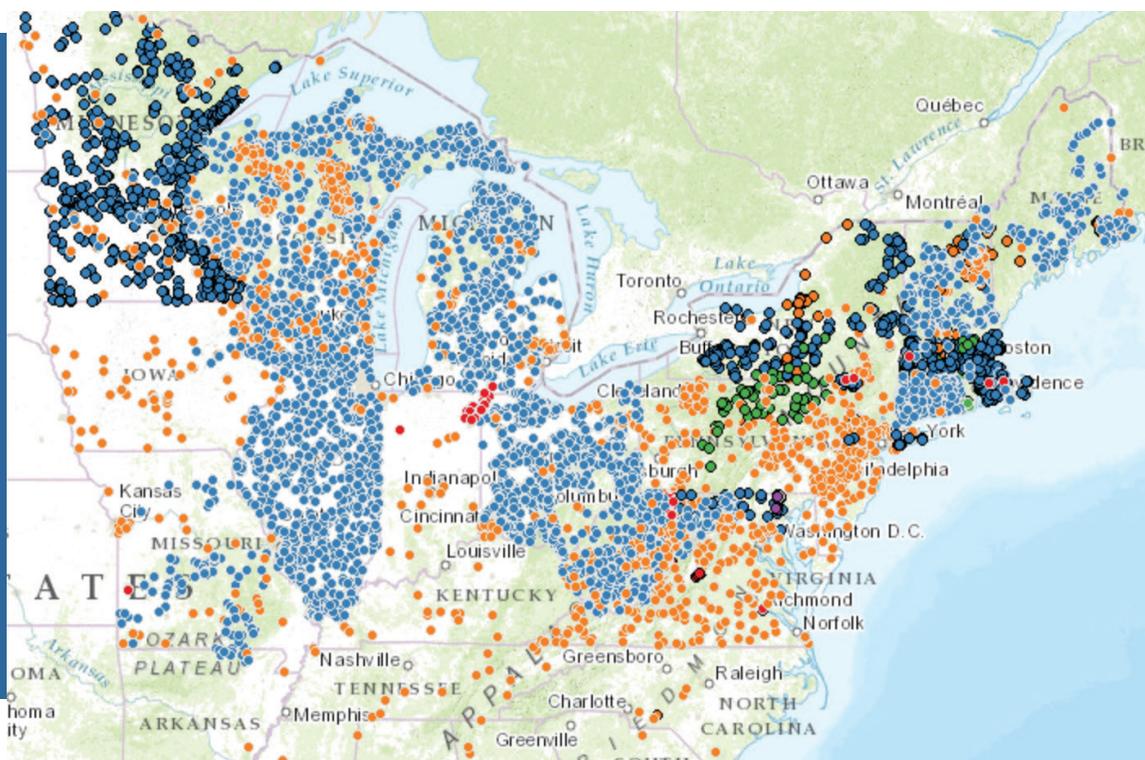
# NorEaST: A Stream Temperature Mapping and Decision Support Tool

Funded by the Northeast Climate Science Center



NE CSC Affiliated Investigator Jana Stewart with the USGS Wisconsin Water Science Center and research partners have developed a **tool that maps and stores continuous stream temperatures** for New England, Mid-Atlantic and the Great Lakes states, allowing aquatic resource managers to **anticipate and plan for adaptation to climate change**.

*The NorEaST Mapper provides a means for the public to view locations and metadata for current and historic stream temperature monitoring sites across multiple agencies.*



## Designing for the Future

Climate change is expected to alter stream temperature and flow regimes over the coming decades, and in turn influence distribution of aquatic species in those freshwater ecosystems. To better anticipate these changes, NorEaST provides access to both short- and long-term stream temperature data for managers to gain an understanding of baseline conditions, historic trends, and future projections. This coordinated, multi-agency regional mapper consists of an interactive web map, a database where data stewards can store and manage their data, and web services to connect, communicate, and serve data for use in analysis and applications.

*“We do a lot of work on the Concord River (Massachusetts), especially and actively use the on-line USGS stream gauge for our programming. With our work on anadromous fish, this project is of great interest to us. We involve our older teens in our after-school program in collecting data and uploading it to the website.”*

- Jane Calvin, CFRE Executive Director, Lowell Parks & Conservation Trust, Inc

<https://ccviewer.wim.usgs.gov/noreast/>

## NorEaST's Feats

Project partners compiled stream temperature monitoring locations and metadata for more than **10,000 monitoring locations** across **30 states**, with contributions by **40 different organizations**.

An additional 300 new thermal loggers were deployed across the Northeast Climate Science Center region as part of a complementary NE CSC project, *"Bringing People, Data, and Models Together – Addressing Impacts of Climate Change on Stream Temperature"*. Austin Polebitski, the lead on this project, worked in conjunction with NorEaST collaborators to fill in gaps and help state agencies and NGOs make decisions regarding habitat conservation. Site locations of collected data can be found through the NorEaST portal.

## How will Resource Managers Contribute to and Use the Tool?

Organizations collecting continuous stream temperature data can request to become NorEaST users, data stewards can use the web portal to store and manage their organization's continuous stream temperature data. Log-in at:

<https://cida.usgs.gov/noreast/apex/f?p=noreast:>



Brook Trout USGS Stock Photo

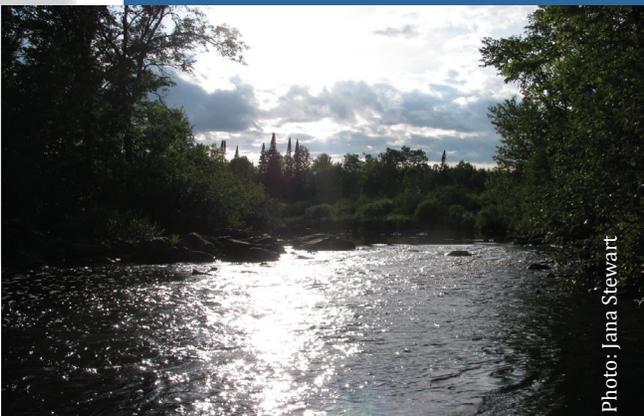


Photo: Jana Stewart

*This project is a multi-institution coordinated effort.*

*Research partners include:*

*Dr. Austin Polebitski, University of WI - Platteville;*  
*Dr. Dana Infante, Michigan State University;*  
*Dr. Richard Palmer, UMass, Amherst;*  
*Dave Armstrong, USGS Water Science Center;*  
*Dr. Jim McKenna, USGS Great Lakes Science Center;*  
*and Dr. Yin-Phan Tsang, Post-doctoral Research Associate at Michigan State University.*

## A Tool for Resource Management

To demonstrate the utility of large scale, consistent stream temperature data for use in regional analyses and decision-making, stream temperature data collected as part of the NorEaST project were used in three different targeted applications. These applications included generating stream thermal metrics, analyzing fish species response to stream thermal metrics, and evaluating stream temperature modeling approaches for use by aquatic resource managers.

To inquire about using the tool for new locations, interested individuals can contact Jana Stewart

**Improving the Way Climate Science Informs Management** The Northeast Climate Science Center works with natural and cultural resource managers in the Northeast and Midwest regions to apply future climate scenarios to decision making and co-produce information and tools for climate change adaptation. The NE CSC is supported by the Department of the Interior and is managed by the USGS National Climate Change and Wildlife Science Center.



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