

# Monitoring Temporal Trends in Trout Populations and Base Flow in Streams

Measuring environmental conditions over time helps us understand how and why trout populations vary in response to factors like water temperature, stream flow and other habitat variables. Results from this study will inform riparian and watershed management, stream habitat development, angling regulations, trout stocking and fish health.



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## TIMELINE

Launch: July 2007  
Completion: June 2022

## FUNDING

Federal Aid in Sportfish  
Restoration

## DNR PARTNER BUREAU

Fisheries Management

## EXTERNAL STAKEHOLDERS

Anglers & fishing guides of WI

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OAS and Fisheries Management monitor 22 Driftless Area streams that represent the region's variety of stream habitat and watershed characteristics. We use these streams as references for water temperature, water level, trout relative abundance and biotic integrity over time.

Monitoring trout populations annually at fixed sites yields critical contextual data for streams surveyed on a three-, six-, or 12-year rotation.

We record water temperature hourly throughout the year and survey fish populations annually. We tagged trout in a subset of streams to estimate apparent survival, recruitment and population growth. We will use this data to quantify relations among water temperature, stream flow, precipitation and trout population dynamics in wadeable coldwater streams. Temporal trend data will help formulate insightful hypotheses about how and why trout populations vary over time.

## Key Points

- » Monitoring stream environmental conditions year-round is critical to understanding how trout populations vary over time and how stream habitat development projects can help improve stream trout fisheries.
- » Trout abundance generally increased from 2007 to 2012-13. Recruitment was weak in years with major spring-summer floods or following an extremely cold winter. Strong recruitment followed years with major flood events.
- » Monitors captured data on major flash flood events and increased baseflow in some streams following these floods, especially where habitat development projects improved connections between streams and their floodplains.
- » A gill lice infection led to recruitment failure and a decrease in adult abundance at one monitoring site. Long-term data were instrumental in understanding how gill lice affected brook trout population decline.

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