



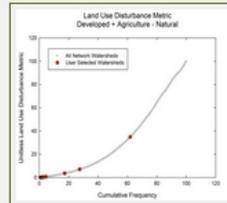
The National Network of Reference Watersheds

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The **National Network of Reference Watersheds** is a collaborative and multipurpose network of minimally disturbed watersheds and monitoring sites. The purpose of this website is to allow users to search the NNRW database of reference watersheds, to identify watersheds of interest, and download watershed information and water quality data. The current scope of the network is limited to freshwater streams. Membership in the network is voluntary and open to individuals, agencies, and institutions interested in participating in monitoring and (or) research in minimally disturbed and pristine watersheds.

WHAT IS A REFERENCE WATERSHED?

The NNRW defines reference watersheds as those minimally disturbed by human activity preferably in an area protected from human-induced changes. Reference watersheds can be used to measure changes in soil chemistry, vegetation, water quality, and biology through time as well as to compare to disturbed watersheds.



The network is currently composed mainly of U.S. Geological Survey and U.S. Environmental Protection Agency watersheds however, as the network expands watersheds will be added from other Federal, State, tribal, interstate, academic, local and private sector organizations that choose to participate.

The "Watershed Search" section of the website allows users to search the entire network database. The database includes many types of reference watersheds; some are considered reference based on low hydrologic disturbance, others based on land use disturbance, and others based on water quality, stream biology, or some combination of criteria. Results of users searches can be placed into context with all watersheds in the database on cumulative frequency diagrams like the one to the right.

The "Core Watersheds" section of the website allows users to search a subset of the NNRW database that contains only the most pristine watersheds based on specific land use criteria. Core watersheds also have stream discharge data available.

Select the "Core Watersheds" tab to explore the most pristine watersheds in the network or select the "Watershed Search" tab to search the entire NNRW database of reference watersheds and access data available for those sites.

If you would like to submit a watershed or a group of watersheds to be included in the network please contact [Mike McHale](#)

TODAY'S FEATURED WATERSHED

Cache Creek



The Cache Creek Basin is located in western Wyoming. Cache Creek drains about 27 km² of steep mountain and canyon terrain in the Gros Ventre Mountains...

WATERSHEDS WHERE I LIVE

Find a Core Reference Watershed near your location
Input either a 5 digit zipcode or latitude and longitude (in decimal degrees).

Zipcode: Latitude:

Longitude:

<https://my.usgs.gov/nnrw/>

Purpose of the Network

- ▶ Provide access to documented quality data and information from minimally or least disturbed watersheds to be used in assisting with establishing “background” conditions for select hydrologic variables and water-quality.
- ▶ Increase the efficiency of monitoring with improved coordination and collaboration and increased opportunities to leverage existing reference sites, networks, and financial resources
- ▶ The network links Reference Watersheds to their water quality data in the Water Quality Portal
- ▶ NNRW watersheds are also linked to the closest National Atmospheric Deposition Program collector to make atmospheric deposition data available for each watershed.

National Network of Reference Watersheds

Mike McHale, Chair, USGS New York Water Science Center

- ▶ Current status
 - ▶ Available on Council website
 - ▶ Over 2500 watersheds with more than 10 years of flow data
 - ▶ Ability to use pre-defined or customize criteria for reference watersheds
 - ▶ Download Water Quality data for up to 50 watersheds at a time
- ▶ Focus in 2018
 - ▶ Continue to expand users and data (e.g., include Forest Service Priority watersheds and EPA lake watersheds)
 - ▶ Develop a revised Hydrologic Disturbance Metric
 - ▶ Continue to develop R analytical tools to compile and assess water quality data in reference watersheds
 - ▶ Revise the Core Watersheds webpage to include a more definitive set of National Core Reference Watersheds based on the work by Miller et al., 2016
 - ▶ Incorporate National Atmospheric Deposition Program Total Deposition data into the website
 - ▶ Increase the visibility/use of the website
 - ▶ Serve on Interagency workgroup on coordinated national water quality monitoring



Interagency workgroup on coordinated national water quality monitoring

Three Workgroups have been formed

1. Consistency in data discoverability
2. Consistency in data reporting
3. Consistency in data collection

Timeline



NNRW Plans 2018

- ▶ Begin regular work group meetings
- ▶ Incorporate the EPA Long-term Monitoring lake watersheds in the NNRW database
- ▶ Continue to develop R analytical tools to compile and assess water quality data in reference watersheds - in cooperation with Andy Bock
- ▶ Serve on Interagency workgroup on coordinated national water quality monitoring

NNRW Plans 2019

- ▶ NNRW website maintenance and restructuring
- ▶ Finish incorporating the EPA's Long-Term Monitoring network lakes into the network and incorporate USFS watersheds.
- ▶ Finish development of a new hydrologic disturbance metric based on the previous work conducted by James Falcone.
- ▶ Write an updated NNRW Fact Sheet for NWQMC.
- ▶ Redesign the Core Watersheds aspect of the network based on the work by Miller et al. 2016
- ▶ Serve on the Interagency water-quality monitoring and reporting workgroup lead by Lori Sprague