Opportunity Title: USGS Watercourse Corridor Study: Ecological Assessments of Stream Sites in Milwaukee Area Waterways
Opportunity Reference Code: DOI-USGS-2026-21

Organization U.S. Department of the Interior (DOI)

Reference Code DOI-USGS-2026-21

How to Apply ***To submit your application, scroll to the bottom of this opportunity and click APPLY.***

A complete application consists of:

- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Click here for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional recommendations.

All documents must be in English or include an official English translation.

Connect with ORISE...on the GO! Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!"

Description ***Applications will be reviewed on a rolling-basis.**

USGS Office/Lab and Location: A research opportunity is currently available with the U.S. Geological Survey (USGS) located in Milwaukee, Wisconsin.

The USGS mission is to monitor, analyze, and predict current and evolving dynamics of complex human and natural Earth-system interactions and to deliver actionable intelligence at scales and timeframes relevant to decision makers. As the Nation's largest water, earth, and biological science and civilian mapping agency, USGS collects, monitors, analyzes, and provides science about natural resource conditions, issues, and problems.

Research Project: The Watercourse Corridor Study (CS) is a large, long-term cooperative effort between the Milwaukee Metropolitan Sewerage District (MMSD) and the U.S. Geological Survey (USGS). MMSD has jurisdictional responsibility for many streams in the Milwaukee area, and the information from this effort is used to inform management decisions affecting those streams. This is a large multi-faceted project, with many science subprojects and goals. There are opportunities to participate in a range of studies, but the primary studies relevant to the ORISE participant will likely involve the collection and reporting of ecological data at a variety of all/mostly wadable stream sites in the Milwaukee area.

As part of this project, routine ecological monitoring surveys have been performed at 14 stream reaches within the Milwaukee metropolitan area since 2004 (with an additional site added to the network in 2016). Data collected as part of this subproject will include the distribution and

abundance of algae, invertebrates, and fish as well as stream habitat, water quality, and environmental DNA (eDNA).

Pairing next-generation eDNA sequencing with traditional whole organism sampling of aquatic communities is valuable to determine the efficacy of both methods by comparing what was identified in the community samples to the eDNA samples, identify locations that may have invasive or rare species that have not been captured via traditional methods, identify locations with sensitive communities to help focus rehabilitation efforts, and attain a holistic view of the biodiversity of aquatic communities at long-term monitoring sites.

Near the start of the 21st century, MMSD reevaluated traditional approaches to streambank stabilization and adopted a broader approach to flood management that included additional considerations such as enhanced public safety, passage for migrating fish, and enhancement of habitat conditions for aquatic biota. An additional 3 sites have been added to the sampling network to specifically characterize and track changes in fish communities, physical habitat, and riparian vegetation at reconstructed channels.

In addition to their investments in the urban landscape, MMSD is also trying to protect land outside of the urban area to enhance floodwater management. At present, targeted ecological monitoring has not been conducted in many of these areas, making it difficult to assess their baseline condition or measure success following changes in land management practices or restoration efforts. To address this gap, 4 additional sites will be sampled for biological communities, physical stream characteristics, and eDNA. The Minnesota and Wisconsin Stream Quantification Tool (SQT) will also be used to examine stream function and provide the framework to measure impacts from restoration or mitigation efforts. These efforts will provide a baseline understanding of current stream health, provide the opportunity to monitor long-term trends, and support future adaptive management and watershed planning practices.

Specific project objectives include:

- At 18 stream sites (15 core sites, and 3 physically restored sites) in the Milwaukee area:
  - Provide ecological assessments (fish, macroinvertebrates, algae, and habitat) of aquatic systems.
  - Assess long-term trends to identify changes in aquatic communities over time.
  - Evaluate possible environmental stressors affecting the health of aquatic communities.
  - Use next generation eDNA sequencing to complement traditional sampling.
- At 4 wetland-dominated sites outside of the Milwaukee metropolitan area:

- Provide baseline ecological assessments (fish, macroinvertebrates, algae, and habitat) of aquatic systems.
- Use next generation eDNA sequencing to complement traditional sampling.
- Examine stream condition and function using the Minnesota and Wisconsin Stream Quantification Tool (SQT).

The projects described have a large field effort taking place this summer. Most or all of the stream sites in question are wadable, and participants responding to this opportunity would likely participate in multiple types of sample collection from the following list:

- Fish community
- Macroinvertebrate community
- Benthic algae community
- Physical habitat
- Riparian vegetation
- Continuous water-quality
- DNA

In addition to field research, there would also be potential to gain experience with field planning/preparation, data management, and other office activities related to this study.

Learning Objectives: You will gain invaluable field experience in a professional setting. Specific highlights include:

- Learn multiple national protocols for ecological and habitat sampling efforts and get hands on experience collecting data with them.
- Learn to calibrate, anchor, field-deploy, and manage multi-parameter sondes for the collection of continuous water-quality data.
- Collaborate closely with USGS personnel to form connections and gain first-hand insights into the highlights and challenges of research of this nature.
- Gain experience in a long-term sampling effort, whose results will be used to inform management decisions aimed at improving environmental health.

Mentor: The mentor for this opportunity is Michelle Nott (mnott@usgs.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: June 15, 2026. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for 10 weeks, but may be renewed upon recommendation of DOI and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Participant Stipend: Stipend rates may vary based on numerous factors,

Opportunity Title: USGS Watercourse Corridor Study: Ecological Assessments of Stream Sites in Milwaukee Area Waterways
Opportunity Reference Code: DOI-USGS-2026-21

including opportunity, location, education, and experience. If you are interviewed, you can inquire about the exact stipend rate at that time and if selected, your appointment offer will include the monthly stipend rate.

Citizenship Requirements: This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the Guidelines for Non-U.S. Citizens Details page of the program website for information about the valid immigration statuses that are acceptable for program participation.

ORISE Information: This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and USGS. Participants do not become employees of USGS, DOE or the program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

Questions: If you have questions about the application process please email USGS@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should be currently pursuing or have received a bachelor's or master's degree in the one of the relevant fields. Degree must have been received within the past four years, or anticipated to be received by 6/1/2029.

Point of Contact

Rachel

Eligibility Requirements

- **Degree:** Bachelor's Degree or Master's Degree received within the last 48 months or anticipated to be received by 6/1/2029 12:00:00 AM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12)
  - **Communications and Graphics Design** (2)
  - **Computer, Information, and Data Sciences** (17)
  - **Earth and Geosciences** (21)
  - **Engineering** (29)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (51)
  - **Mathematics and Statistics** (11)
  - **Physics** (16)
  - **Science & Engineering-related** (2)
  - **Social and Behavioral Sciences** (29)