

Opportunity Title: USFS Postdoctoral Fellowship Evaluating Watershed Health & Freshwater Mussel Communities

Opportunity Reference Code: USDA-USFS-2021-0225

Organization U.S. Department of Agriculture (USDA)

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A complete application package 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. Selected candidate must provide proof of completion of the degree before the appointment can start. All transcripts must be in English or include an official English translation. Click [Here](#) for detailed information about acceptable transcripts.
- A current resume/CV
- An abstract or reprint
- Two educational or professional recommendations. Applications need at least one recommendation submitted in order to be viewed by the mentor.

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

Application Deadline 8/31/2022 3:00:00 PM Eastern Time Zone

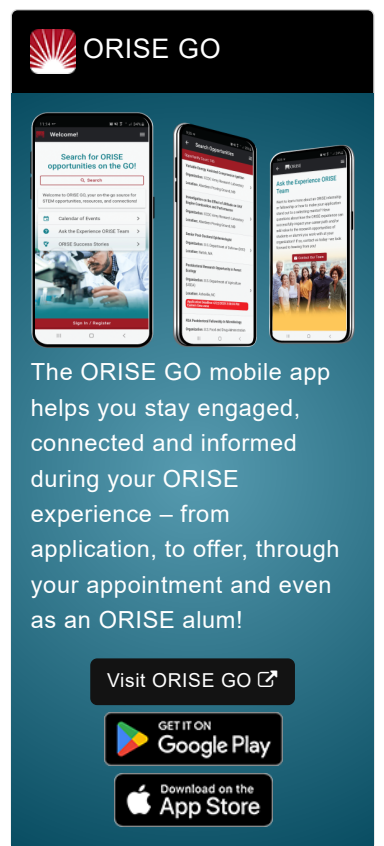
Description *Applications will be reviewed on a rolling-basis.

USFS Office/Lab and Location: A research training opportunity is available with the U.S. Department of Agriculture (USDA) Forest Service, Southern Research Station, Aquatic Conservation and Ecology Team, and is located at the Department of Forestry and Natural Resources at the University of Kentucky (UK) in Lexington, Kentucky.

The Aquatic Conservation and Ecology Team researches the biology, ecology, and community function and structure of warmwater fishes, mussels, and crayfishes of bottomland hardwood and upland stream ecosystems. https://www.srs.fs.usda.gov/cbhr_redesign/research/ace/

Faculty of the Department of Forestry and Natural Resources conduct basic and applied research to support our understanding and use of forest ecosystems. Areas of emphasis and developing strength include wildlife ecology and conservation biology, landscape and spatial ecology, and forest hydrology and watershed management. <https://forestry.ca.uky.edu>

Research Project: Stream ecosystems are indicators of the integrated effects of humans on watershed health. Freshwater mussels have declined dramatically since the 1970s, and entire mussel communities have disappeared from streams throughout the U.S. Dramatic mussel declines suggest profound watershed degradation, but the causes of these declines are largely unknown. Consequently, land managers have no clear guidance for addressing mussel declines or associated watershed degradation. In 2021, we initiated the first large-scale collaborative study to investigate causes of mussel declines across diverse physiographic and ecological contexts in streams in 12 eastern states. For each stream, we are building a comprehensive dataset including current and historical data on hydrology, land use, invasive species, water chemistry, sediment characteristics, algal



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communities, pathogens, climate, and other factors potentially related to mussel declines. Response variables are mussel community health and responses of juvenile mussels to ambient conditions in streams. We will evaluate large-scale associations between potential causal factors and response variables. The overarching goal of the project is to provide specific, science-based guidance needed by land managers to protect and restore mussel communities and stream ecosystems.

The post-doctoral fellow will collaborate with the mentor and project partners on sample collection and processing, data management, development of multivariate modeling and analytical approaches for assessing patterns of association among response variables and potential causal factors, and dissemination of results through presentations, peer-reviewed papers, and other outlets.

Learning Objectives: The fellow will gain experience in the following areas.

- Conducting field work in a wide variety of physiographic and ecological contexts
- Collaborating with a large, interdisciplinary team, including scientists from multiple federal and state agencies, universities, and NGOs
- Developing professional relationships with partners from a diverse cross-section of natural resource conservation
- Working with large multivariate datasets including hydrologic, climate, and landscape modeling
- Learning about sediment and water sampling and sample processing, physiological and histological indicators of mussel health, pathogen screening, and other techniques
- Building a curriculum vitae through presenting and publishing scientific papers. The broad scope of the project presents opportunities for publishing impactful papers on a wide variety of topics including watershed health, mussel conservation and ecology, stream sediment processes and algal communities, and others
- Participation in academic life at UK, including attending seminars and interacting with other faculty and students

Mentor: The mentors for this opportunity are Dr. Wendell R. Haag, Research Fisheries Biologist, USFS (wendell.haag@usda.gov) and Dr. Steven Price at UK (steven.price@uky.edu). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Fall or Winter 2021. Start date is flexible and negotiable, and will depend on a variety of factors.

Appointment Length: The ORISE fellowship is funded for 14 months, but the possibility of extension exists. In addition, outside funds are available to support a post-doc for 1-2 more years after the ORISE fellowship ends.

Level of Participation: The appointment is full-time.

Participant Stipend: The fellow will receive a \$6,457.29 monthly

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stipend, as well as 75% of the individual health insurance supplement to cover medical, prescription, dental and vision coverage, \$1,000 in relocation costs, and a \$5,000 allowance for travel related to the project.

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 USFS. Participants do not become employees of USDA, USFS, 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: Please visit our [Program Website](#). After reading, if you have additional questions about the application process please email USForestService@orise.orau.gov and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctoral degree in ecology, conservation biology, environmental sciences, or a related discipline, or be currently pursuing the degree with completion by the end of December 2021. Degree must have been received within the past five years.

Preferred skills:

- Strong statistical, modelling, and organizational skills
- Ability to compile, manage, and work with large, diverse datasets
- Experience in aquatic ecology
- Creativity and critical thinking skills
- Ability to work collaboratively or independently as situation dictates
- Proven ability to publish and present research results

Extensive travel and long hours in the field is expected seasonally.

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 12/31/2021 12:00:00 AM.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([1](#) )
 - **Computer, Information, and Data Sciences** ([4](#) )
 - **Earth and Geosciences** ([1](#) )
 - **Environmental and Marine Sciences** ([14](#) )
 - **Life Health and Medical Sciences** ([15](#) )
 - **Mathematics and Statistics** ([5](#) )
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).

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