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Opportunity Title: US Forest Service Fellowship in Mature and Old-Growth Forest Ecology
Opportunity Reference Code: USDA-FS-SRS-2024-0327

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-FS-SRS-2024-0327

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. At least one recommendation must be submitted in order for the mentor to view your application.

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

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Application Deadline 12/6/2024 3:00:00 PM Eastern Time Zone

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

USDA Forest Service Office/Lab and Location: A fellowship opportunity is available with the US Department of Agriculture (USDA) Forest Service Southern Research Station located in Research Triangle Park, North Carolina.

At the heart of the USDA Forest Service's mission is their purpose. Everything they do is intended to help sustain forests and grasslands for present and future generations. Why? Because their stewardship work supports nature in sustaining life. This is the purpose that drives the agency's mission and motivates their work across the agency. It's been there from the agency's very beginning, and it still drives them. To advance the mission and serve their purpose, the USDA Forest Service balances the short and long-term needs of people and nature by: working in collaboration with communities and our partners; providing access to resources and experiences that promote economic, ecological, and social vitality; connecting people to the land and one another; and delivering world-class science, technology and land management.

Research Project: Forest Service Southern Research Station scientists are seeking a Postdoctoral Fellow to join our research team focused on analyzing forest change and threats to mature and old-growth forests from global change drivers. In this project, we will collaboratively analyze potential threats expected to affect the ecological integrity and carbon

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dynamics of mature and old-growth forests across the U.S. between now and mid-century (2070) under scenarios of climate and socioeconomic change. We will also aim to identify the places that will serve as refugia for mature and old-growth forests in the future.

Future threats, including wildfire, harvest, insects and disease, land-use change, and climate extremes, have the potential to affect mature and old-growth forests in the U.S. Working collaboratively with our team, you will analyze projections of recent forest inventory data, along with gridded climate data and remote sensing, land use, and other biophysical ancillary data. We will evaluate and summarize metrics of ecological integrity, including metrics related to forest structure, species composition, and biodiversity, as well as carbon dynamics for mature and old-growth forests that are exposed to threats. We will also overlay projected climate extremes on projected mature and old-growth forest locations to determine which forests with relatively high ecological integrity will be less exposed to climate extremes and threats, and therefore could serve as refugia. Our study area will include all mature and old-growth forests in the conterminous US.

In this project, you will have the opportunity to continue your professional development while tackling important and high-profile management- and adaptation-relevant research questions in this time of rapid global change. We will produce information on threats to mature and old-growth forests that can inform decision-making by forest managers, planners, and policy makers.

Learning Objectives: The participant selected for this project will have the opportunity to hone many aspects of their scientific skillset while participating collaboratively with Southern Research Station researchers. Activities will include:

- Analyzing simulation modeling results to determine how multiple aspects of ecological integrity of mature and old-growth forests are expected to change in the future;
- Analyzing the effects of climate extremes and disturbances on future mature and old-growth forest ecological integrity;
- Determining which places may be climate refugia for mature and old-growth forests;
- Communicating with partners within the Forest Service, in academia and in other agencies to share results; and
- Leading the writing of multiple peer-reviewed publications on research results.

Mentor: The primary mentor for this opportunity is Jennifer Costanza (jennifer.costanza@usda.gov) and the secondary mentors are Frank Koch (frank.h.koch@usda.gov) and Kevin Potter (kevin.potter@usda.gov). If you have questions about the nature of the research, please contact the mentors.

Anticipated Appointment Start Date: Early 2025. Start date is flexible and will depend on a variety of factors.

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Appointment Length: The appointment will initially be for two and a half years but may be extended upon recommendation of USDA Forest Service and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience. **The annual stipend will be $78,000.**

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 USDA Forest Service. Participants do not become employees of USDA, USDA Forest Service, 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 ORISE.USFS.SRS@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing or have received a doctoral degree in the one of the relevant fields (e.g. Ecology, Forestry, Climatology, Geography). Degree must have been received within the past five years, or anticipated to be received by 8/31/2025.

Preferred Skills:

- Strong data analysis skills, including with statistical models of the effects of climate and/or disturbance on ecosystems at broad scales, and experience with Forest Inventory and Analysis (FIA) data.
- Strong data management skills and demonstrated experience managing, standardizing, synthesizing, analyzing, and visualizing large, disparate natural resource (e.g., forest inventory, climate, land use, soils, elevation) data sets in R or Python as well as GIS software such as QGIS or ArcGIS Pro.
- A working knowledge of US forest ecosystems and background in analyzing forest structure, stand dynamics, biodiversity, and/or other aspects of forest ecological integrity.
- A background in global-change threats to forest ecosystems, including changing forest disturbance regimes, climate extremes, land-use change and/or socioeconomic drivers.
- Excellent oral and written communication skills and demonstrated

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experience as lead author of peer-reviewed natural resources publications.
- Demonstrated success performing independently as part of a diverse research team.

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 8/31/2025 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** (27 👁)
  - **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 👁)