

## **Job Announcement: Evaluating Effects of Brush Management and Prescribed fire on Carbon Sequestration and Climate Resilience**

### **The Problem:**

Brush management is one of the most widespread and costly conservation practices implemented by conservation agencies in the West. Prescribed fire, while an important component of ecosystem management, is often not used because of public perception and wildfire concerns. Implementing these practices is occurring in a changing climate where temperature increases and changes in precipitation impact outcomes in unknown ways. In addition, increased funding through the Inflation Reduction Act drives field staff to implement additional brush management at increasing rates without information about short- and long-term impacts to carbon sequestration, as applied. Therefore, we propose a science synthesis program focused on the Plains, Great Basin, and West to evaluate brush management and prescribed fire ultimately leading to recommendations for locations where brush management may be successful despite climate change and locations where brush is a stabilizing system providing important ecosystem services and brush management tactics may lead to deleterious outcomes.

### **The Project:**

The NRCS mitigation project is national in scope, with all 10 Climate Hubs synthesizing scientific information on practices most relevant to their region. Given that, the incumbent will have the opportunity to work with other scientists to synthesize the most recent science leading to improved management tactics. The primary purpose of the work of this project is to contribute to an analysis of the short and long term carbon sequestration impacts of brush management and prescribed fire under differing environmental conditions. This position will strengthen access to actionable information to provide clarity in decision-making at varying spatial and temporal scales. The results of the work facilitate the management and sustainability of ecosystems where brush management and prescribed fire are common, the Plains, Great Basin, Southwest, and Northwest. The research may consider pinon-juniper, mesquite, red cedar, and other systems.

This position is located at the USDA Southwest Climate Hub within the Range Management Research Unit, Jornada Experimental Range, Plains Area Office, Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA). The mission of the Range Management Research Unit is to produce new knowledge of ecosystem processes and new technologies necessary for sustainable agriculture in dryland agroecosystems. The unit links long-term, site-based research on natural resource management, innovative livestock production systems, and ecosystem restoration with national and global research on land monitoring and evaluation, analysis, and decision support tools. Unit products support the management of hundreds of millions of acres of U.S. rangelands, pasturelands, and croplands.

**Major Duties and Responsibilities:**

The research associate will synthesize and publish scientific information about the mitigation potential of specific climate-smart agriculture and forestry practices. For this position, the synthesis will primarily focus on the scientific nuances of brush management (314) and prescribed burning (338), but other management practices may be included as the project progresses.

The research associate will work as part of an interdisciplinary team, collaborating and coordinating with scientists engaged in parallel efforts in nine other regional Climate Hubs, with scientists in the Long-Term Agroecosystem Research Network grazinglands group, and other scientists focused on similar questions across the country.

Ultimately, the research associate will provide information to increase NRCS literacy on climate-smart practices, with an emphasis on practices that provide benefits for carbon sequestration and co-benefits for adaptation and resilience.

The research associate will assess the needs and develop new (or improve existing) decision-support tools for field staff related to implementation of brush management and prescribed fire.

To advance NRCS mitigation decision-support, the research associate will participate in developing and compiling resources that share, explain, quantify, and compare brush management and prescribed fire benefits and co-benefits.

The primary output of this research is published synthesis and independent research results in peer-reviewed scientific journals; a secondary output will be to provide actionable, decision-relevant information at specific locations related to brush management and prescribed fire.

The Research Associate will work under the supervision of Drs. Emile Elias and Joel Brown at the USDA Southwest Climate Hub, Sara Thompson (USDA NRCS), and Dr. Brandon Bestelmeyer (USDA Agricultural Research Service).

**Preferred Qualifications:**

- PhD in soil science, agronomy, biological systems engineering, physical science, or closely related field relevant to the project.
- Demonstrated experience in relevant field.
- Ability to complete research independently and to work well as part of a team.
- Excellent written and oral English communication skills for both scientific and general audiences.

- Evidence of high-quality scientific publications and presentations in subject areas relevant to this project.
- Background and interest in extension, outreach, and/or the application of scientific information in practice.

**To Apply:** Please send (1) a cover letter describing: experience, interest in the selected position, professional/research interests, and general career goals (no more than a single page), (2) a CV, (3) copies of unofficial transcripts and (4) contact information for 3 professional references (one being your dissertation advisor) in a single PDF. Materials received by **March 18, 2024** will receive full consideration. Send the complete package of materials to Emile Elias ([emile.elias@usda.gov](mailto:emile.elias@usda.gov)) under the subject heading “Research Associate Position” for full consideration.

**Salary:** Begins at \$73,317; but is commensurate with experience.

**Location:** Las Cruces, New Mexico. Remote positions may be available for the preferred candidate.

**Start date:** Negotiable – duration of position is 3 years with the possibility of an extension.

Candidates interested in more information on this position can contact: Emile Elias ([emile.elias@usda.gov](mailto:emile.elias@usda.gov)), Director, USDA Southwest Climate Hub.

**U.S. Citizenship Required:** Yes