M.S. assistantship(s) in forest restoration

Agency
New Mexico Highlands University, Department of Forestry
Location
Las Vegas, New Mexico
Job Category
Graduate Assistantships
Salary
$18,000 per year + tuition remission
Position Start Date:
08/16/2021
Last Date to Apply
Open Until Filled
Website
https://www.nmhu.edu/department-of-forestry/

Description

Master of Science (M.S.) students sought to participate in a project regarding forest restoration in New Mexico. New Mexico Highlands University's Department of Forestry has multiple openings for graduate students interested in forest ecology, management, and restoration to enter the M.S. in Natural Sciences program with a concentration in Environmental Science and Management beginning Fall 2021. Students will participate in projects researching the health, resiliency, and regeneration of Southwestern forests in response to fire. These projects and associated graduate assistantships are fully funded by the National Science Foundation's Centers for Research Excellence in Science and Technology (CREST) program.

Students can choose from several research projects taking place under the CREST grant, including:

- Determining the effect of nucleus size, planting density, vegetation control, animal protection, stock type, and planting window on nucleation restoration efficacy;
- Characterizing the fire history of forests in the Sangre de Cristo Mountains;
- Evaluating the use of gaps to speed the restoration of ponderosa pine-dominated forest ecosystems to emulate historic spatial distribution and structure;
- Assessing the interactions between grazing, fire intensity, and seedling density on the restoration of healthy ponderosa pine forests;
- Applying fire and vegetation simulations to field and remote sensing data to model the impacts of reforestation and fire management on forest resiliency;
- Dendrochronology project identifying relationships between fire and tree defenses against bark beetles in Douglas-fir;
- Assessing the interplay between carnivores, ungulates, and plant resiliency to fire.

- Evaluating feedbacks between microsite environmental conditions (e.g., soil properties, light availability, temperature, moisture) and ponderosa pine restoration efficacy
- Conducting quantitative and qualitative assessments of undergraduate student learning outcomes as a function of research engagement
- Quantifying and comparing metrics of ecological restoration success (e.g., ecosystem health, resilience, resistance, integrity, etc.)

In all cases, thesis research will involve collection, analysis, and dissemination of field data. Students are encouraged to propose and pursue lines of inquiry within the scope of the established projects that reflect their academic interests. In turn, M.S. thesis research could involve any number of research methods, including forest mensuration, dendrochronology, biodiversity monitoring and modeling, watershed management, pyrometry, remote sensing and spatial analysis, and soil sampling and laboratory analysis, among others. In addition to coursework and research, students will serve as mentors for undergraduate researchers involved in the CREST projects, and particularly those who come from backgrounds that are underrepresented in STEM.

A B.S. or B.A. in forestry, forest ecology, environmental science, environmental engineering, conservation management, or related discipline is required. Prior experience performing ecological restoration or conducting ecological field work in Western forests is preferred. Applicants should also demonstrate a commitment to equity and inclusivity.

Selected students will receive a stipend of $18,000 per calendar year throughout a two-year period, as well as a tuition waiver. Extensions beyond the initial two-year period may be available on a case-by-case basis, subject to available funding. Reappointment will be contingent upon satisfactory participation in CREST activities, academic performance, and research progress.

Candidates should apply to the NMHU Graduate School (https://www.nmhu.edu/graduate-admissions/), specifying that they are applying to the M.S. in Natural Sciences program with a concentration in Environmental Science and Management in the Department of Forestry. In addition to the other application materials, please describe your academic background, research qualifications, career goals, interest in the CREST projects, and any broad research ideas in your cover letter. Review of applications will begin immediately and will continue until the position(s) are filled. Questions can be directed to kshaney@nmhu.edu

About New Mexico Highlands University Department of Forestry: New Mexico Highlands University (NMHU) is a public university located in Las Vegas, NM. The Department of Forestry is the only Society of American Foresters accredited forestry program in New Mexico. It offers a M.S. in Natural Sciences degree with a concentration in Environmental Science & Management, supporting students as they develop an understanding of ecological principles and management through academic coursework and independent research. This program prepares students for employment in government agencies, NGOs, industry, and academic positions. As a Hispanic-serving institution,

NMHU is committed to supporting and promoting the needs of a multiethnic student body in their educational pursuits.

Qualifications

A B.S. or B.A. in forestry, forest ecology, environmental science, environmental engineering, conservation management, or related discipline is required. Prior experience performing ecological restoration or conducting ecological field work in Western forests is preferred.

Contact Person

Dr. Kyle Shaney (kshaney@nmhu.edu)