2019 Cooperative Summer Field Training Program

Project Title:	RestoreNet: Developing Suitable Ecological Restoration Practices Across Environmental Gradients
Project Scientists:	Seth Munson
USGS Center:	SBSC
Location:	Flagstaff, AZ

Project Description:

Background Information:
The Restoration Assessment and Monitoring Program for the Southwest (RAMPS: http://usgs.gov/sbsc/ramps) seeks to assist the U.S. Department of the Interior and other land management agencies in developing successful land treatment activities, such as restoration, mitigation, rehabilitation, and land enhancement. One of the initial outcomes of RAMPS is the implementation of RestoreNet: a distributed field trial network that systematically tests restoration techniques through a partnership between scientists and land managers. This network tests the suitability of a broad range of species and seed mixes for restoration, coupled with a suite of restoration treatments, to promote plant establishment and growth. In 2018, ten sites across Arizona and Utah were installed as a part of RestoreNet. Installations included transplantation of seedlings into monoculture and polyculture plots, and utilizing restoration treatments for native grasses and forbs planted by seed. In 2019, additional sites will be installed in southern California, Nevada, and New Mexico.

Objectives:
The main goal of RestoreNet is to determine suitable ecological restoration practices across broad environmental gradients. RestoreNet will provide novel insight on potential modifications to priority species lists for revegetation based on anticipated changes in climate, evaluate the performance of different seed resources and restoration treatments across environmental conditions, and assess how the interactive effects of site conditions and species composition influence ecosystem services.

Intern Tasks:
The intern will help establish new RestoreNet sites and help maintain existing sites; monitor plant germination, establishment, and growth; help grow plants in a greenhouse; assess ecosystem services provided by revegetation efforts; interact with land managers in scenic parts of the southwestern U.S.; manage and help conduct preliminary analysis of data; present research findings in a professional setting.

Expected Outcomes:

The intern will conduct "actionable" science by participating in a large experiment designed to determine successful restoration practices that will be used by land management agencies. The intern will gain first-hand experience engaging with the National Park Service, Bureau of Land Management, The Nature Conservancy, and other organizations in scenic areas across the southwestern US. The intern will gain experience with study design, monitoring protocols, and data analysis to further their development as a scientist. The intern will engage with a diverse lab group of researchers, technicians, and students, and participate in lab meetings throughout the summer, and may have an opportunity to present research findings at a scientific meeting.

Details for Matching:

Type of Project: Field Work

Project Discipline: Ecology

Project Start Date: Sun May 12 2019 00:00:00 GMT-0400 (EDT)

Project Duration: 4 months

Level of Physical Demand: Level 8-2: The work requires some physical exertion such as long periods of standing, walking over rough, uneven, or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; or recurring lifting of moderately heavy items. The work may require specific, but common, physical characteristics and abilities such as above-average agility and dexterity.

GIS Training: ESA

Special Skills and Interests: Plant identification (especially plants of the southwestern US), plant and soil measurements, knowledge of ecological restoration practices, ability to setup plots and experimental infrastructure, familiarity working in greenhouse, willingness to travel and camp in remote settings and endure moderate physical activity.

Understanding of basic statistical design and analysis is a plus, but not required. Working knowledge of GIS and Excel is also a plus, but not required.