Project Title: Wildlife and habitat in Glacier National Park

Project Scientist: Tabitha Graves

USGS Center: USGS NOROCK

Location: Glacier National Park

Project Description: The intern will work on 2 projects: 1) Assessment of mountain goats in Glacier National Park and 2) Evaluation of huckleberry phenology response to drought.   Both projects involve collaboration with the National Park Service and will provide interns with experience in multiagency projects.

Background Information: These two projects are both related to understanding the impacts of environmental change on species of importance to Glacier National Park and the region and considering citizen science approaches to monitoring. The mountain goat study seeks to understand the best way to estimate the number of mountain goats. Glacier National Park has a long-established citizen science program based on visual observations of goats, but the resulting estimates have large confidence intervals.   This project will also evaluate mountain goat foods and stress levels.   This project will pilot and evaluate the potential for using fecal pellets and hair samples of mountain goats to incorporate individual-level information to improve population estimates while informing changes in nutritional state.   Huckleberries are an important food for grizzly bears and many other wildlife species.   By collecting data on the phenology of huckleberries across time and space, this project seeks to predict changes in the number and timing of huckleberries on the landscape and to create decision support maps for managers on the most important huckleberry patches.

Objectives: Specific objectives for the summer of 2019 are to:

1) Collect mountain goat fecal pellets and hair along mostly high elevation transects.
2) Collect vegetation samples that may be goat foods.
3) Maintain citizen science-based huckleberry phenology routes and collect data on the phenological stage of huckleberries.

We seek a hard working intern interested in mountain ecosystems and the connections between wildlife and their habitat. The intern will work as part of a team initially and intermittently throughout the summer, with some solo work after training is completed and if conditions and skillset warrant. Ideally the intern will begin in late May- early June and work up through mid-September.

Intern tasks:

Work is primarily field-based and will involve working in remote environments ranging from open meadows and forests and low elevations to alpine and subalpine zones primarily within Glacier National Park. Self-reliance is necessary as teams are small and some solo work will be required. Most fieldwork will be in backcountry locations in areas frequented by grizzly bears and a few trips may involve multiple nights of camping or staying in backcountry cabins, hiking and navigating across rugged terrain with a heavy backpack in harsh and changing weather conditions.   The intern should expect to work 40-50 hours per week, primarily between 8am-530 pm, with occasional early morning or evening work. Specific duties will include collection of fecal pellets, hair, and vegetation data. Data entry and sample processing is required for all projects.   There are also GIS tasks for the projects if the intern has GIS skills.

Expected outcomes:

The intern will be trained in route navigation, genetic sample collection, identification of animal fecal pellets and hair, standardized observation techniques, and vegetation transects. Data collected will inform models for mountain goat population estimates and understanding of nutritional status and the relationship between environmental conditions and the timing of huckleberry ripeness.

Type of Project: Field Work

Discipline: Ecology, Field mapping, Modeling, Climate Science, Wildlife

Project Start Date: May 15 2019

Duration: 3-6 months

Level of physical demand: 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: Yes, but limited.

Special skills and interests:

Experience or interest in learning wildlife and vegetation sampling techniques.

Experience cataloguing biological data in the field and office (electronic and hard copy)

Experience with backcountry travel.

Ability or willingness to learn to navigate with a GPS in unfamiliar terrain

Backpacking experience preferred.

Willingness to travel and camp in grizzly bear habitat.

Ability to hike up to 10 miles with a moderate pack weight- 30 pounds.

Comfortable hiking off-trail

Must be willing to work long hours with a small crew.

Proficient with Microsoft Word and Excel

R and ArcGIS experience beneficial, but not required.