

## **POSITION ANNOUNCEMENT:**

### **GEORGE MELENDEZ WRIGHT INITIATIVE FOR YOUNG LEADERS IN CLIMATE CHANGE**

The National Park Service (NPS) is pleased to announce the 2017 *George Melendez Wright Initiative for Young Leaders in Climate Change* (YLCC) to provide a pathway for exemplary students in higher education (graduate students, advanced undergraduate students, and recent graduates) to apply their skills and ideas to park-based challenges and solutions. The Initiative offers 12-week paid internships which allow students to gain valuable work experience, explore career options, and develop leadership skills through mentorship and guidance while helping to advance the NPS response to climate change. Successful students may be eligible for non-competitive hire into federal positions for which they qualify following completion of all academic requirements.

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### **ESTABLISHING LONG-TERM MONITORING PROJECT FOR PIKAS IN ROCKY MOUNTAIN NATIONAL PARK**

Washington Office, Natural Resource Stewardship & Science, Biological Resources  
Fort Collins, CO

Visit and observe locations of American pika habitat in Rocky Mountain National Park to determine occupancy and characteristics of habitat sites. Create volunteer guidance documents to provide for continued surveillance by volunteers in future years.

#### **INTERNSHIP PROJECT BACKGROUND**

Climate change is now considered the single greatest threat to global ecosystems and biodiversity (Glick and VanPutten 2002). Alpine habitats and alpine species are expected to be affected disproportionately by climate change (Naftz et al. 2002). Among the potential victims of alpine climate change is the American pika (*Ochotona princeps*), which plays an important ecological role in alpine habitats and has already been lost from several areas within its historical range (Beever et al. 2003). We will adapt a baseline monitoring program into a long-term occupancy monitoring project to better understand the impacts to this species, set the stage for study expansion into other climate-influenced stressors such as disease, and identify potential management priorities for this species and ecosystem. This project will serve as a service-wide model to develop long-term monitoring plans for pikas in 8 other western parks. The Pikas in Peril (PiP) project was an effort across eight western National Parks with pikas to survey pika populations and detect some of the bioclimatic features driving their occupancy and potential future change (Jeffress et al. 2013). Among the eight national parks, pikas were predicted to have the highest chance of extirpation in ROMO, due to climate-mediated habitat loss and reduced population connectivity.

This student project will build on the PiP project to establish a baseline monitoring program that can be continued by volunteers and adapted for other parks. On-going occupancy monitoring will produce data needed to evaluate predictions of pika vulnerability to climate change, refine predictive models, and inform conservation strategies.

## **INTERNSHIP PROJECT DESCRIPTION**

Collaborators have already defined a pika occupancy sampling scheme stratified by predicted population vulnerability (Figure 1). The student will work directly with Drs. Buttke and Galloway of NPS Biological Resources Division with consultation with Dr. Chris Ray of University of Colorado to implement the proposed plan, identify gaps and necessary modifications, and use this information to create a model for a long-term monitoring plan for pikas that could be implemented across parks. Student will also work closely with park interpretation program staff to create educational materials for the public.

Research questions:

- Is the pattern of pika habitat occupancy in ROMO changing as predicted?
- Are the two subspecies of pika within ROMO responding differently to predicted stressors?
- What other stressors (e.g., resource competition from species with novel range shifts, disease, etc.) might be impacting pika survival in ROMO?

After relevant training with mentor, student will conduct independent occupancy assessments for pika at identified study sites. Each site will be also surveyed for various habitat characteristics (talus patch size, rock size, crevice depth, topography, and vegetation cover). Data will be provided to park staff to inform long-term monitoring and management plans.

### **Internship Tasks**

In addition to attending training and scheduled mentoring activities, the student will:

- Conduct plot surveys according to a vetted protocol, including a) surveying for pika calls, scat, and haypiles; b) recording ground cover classes within each plot, and c) opportunistically recording presence of other mammals (woodrats, marmots, weasels, etc.).
- Establish citizen science monitoring based on the vetted protocol by a) providing park staff with volunteer training materials and data collection forms.
- Enter data and provide QA/QC for data on pika occupancy and plot characteristics.
- Summarize and write reports of findings for mentor and park staff.
- Develop interpretation program for park interpretation staff.
- Update protocol for long-term monitoring based on lessons learned. This plan will be used for future volunteers to implement as a long-term monitoring project.

### **Internship Products**

- Presentation of summary results to ROMO.
- Brown bag lunch presentation for NRSS (highlight collaboration between the Wildlife Health Branch and Climate Change Response Program and ROMO)
- Summary Written Report of Results
- Modified PiP database with the first summer's data
- Updated protocol for long-term monitoring program to be implemented by future park students or volunteers
- Recommendations for other parks to develop similar long-term pika monitoring programs using student and citizen science approaches

## **QUALIFICATIONS**

- Degree/Coursework - Bachelor's in biology, ecology, or related fields.

- Skills and Abilities
  - Independent and motivated individual with good organizational and time management skills
  - Ability to hike up to 10 miles per day (often off-trail), carry up to 40 lbs and work at high elevation (9,000-13,000 ft) for extended periods of time.
  - Outdoor/mountain safety training desirable.
  - Good communication and interpersonal skills
  - Familiarity with Excel and Access or similar software for data entry and management
  - Familiarity with programming in R desirable

## **LEADERSHIP DEVELOPMENT**

The student will work with mentors to gain marketable skills in occupancy modeling and quantitative ecology. This will include planning daily activities and acquiring needed resources, collecting, organizing and assessing data and information from the study, troubleshooting any challenges encountered in the field, and regularly communicating with supervisors and other partners on accomplishments or obstacles (with proposed solutions). The student will be evaluated based on several qualities of leadership including 1) fortitude in persevering through unexpected challenges experienced in scientific and field research, 2) accountability and integrity in completing tasks, and 3) respect and honesty in communication and interactions with others. Formative evaluations of the student's performance and development in these leadership qualities will occur throughout the project period. Regular feedback on developed products will also provide learning opportunities.

## **DATES OF POSITION**

Approximate start date is May 29, 2017. Training will begin in late May in preparation for field work, which will begin when trail ridge road opens.

## **COMPENSATION**

This initiative supports one student at \$15/hour for 12 weeks, or 480 hours.

## **HOUSING**

Details need to be finalized with the park, but a volunteer in park housing position has been slated for pika monitoring work through an agreement between the park and the internship supervisor. Housing is a short drive from Estes Park, CO, where all services are available. Office work, including data entry and supervisory progress meetings will be conducted regularly in Fort Collins, CO, which is an additional 60 miles from the park.

## **WORK ENVIRONMENT**

This internship will primarily involve fieldwork in remote high alpine conditions, under variable weather conditions. Much work will require off-trail travel over rough ground. Work will also require extended time seated at a desk, entering and compiling data, and performing basic statistical analysis.

## **CONTACT INFORMATION**

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