

## **Project Summary**

### **Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Citizen Science in Glacier's High Country: monitoring mountain goats, pikas, and Clark's Nutcrackers

**Type of Project:** Technical Assistance & Education  
**Discipline:** Natural Resources  
**Funding Agency:** National Park Service  
**Other Partners/Cooperators:** University of Montana  
**Effective Dates:** 6/1/2008 - 5/30/2012  
**Funding Amount:** \$47,000 [\$25,000 added in FY09]

**Investigators and Agency Representative:**

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Investigator: Paul Krausman, College of Forestry and Conservation, University of Montana, University of Montana, Missoula, MT 59812; (406) 243-6011; paul.krausman@umontana.edu

**Project Abstract:**

Beginning in 2008, Jami Belt, graduate student and the citizen science project coordinator, will develop training materials (a Powerpoint presentation and identification cards), establish protocols for monitoring each of these species, find and train volunteers, and assign sampling areas to the volunteer wildlife observers. The coordinator will work closely with Tara Carolin and John Waller at Glacier NP, and her graduate committee (University of Montana professors) throughout the project. The coordinator will talk to species' experts when designing sampling protocols. The protocols will complement other on-going research investigations at Glacier NP and the data will benefit those studies as well. Participants (volunteers and park staff) in the project will be trained in species identification; will learn about the current state of knowledge about the distribution of each species in Glacier, life history of each species, and the management concerns for these species in the park; and will be taught how to observe and what to note about each species. Volunteer wildlife observers (VWOs) will gather data on these species in many areas throughout the high country in the park. The data will be summarized for use by park managers. In addition to determining the distribution of these species, Jami will also be evaluating the use of citizen science for multi-species wildlife inventories.

Protocols for monitoring three species will be drawn from the protocols for research being conducted in 2008 and 2009 in Glacier National Park on each of these species; namely pika research by Lucas Moyer-Horner (PhD student at University of Wisconsin), Clark's Nutcracker research by Teresa Lorenz (MS student at Utah State University) and mountain goat research by Dr. Don White (Professor, University of Arkansas). VWO's will conduct surveys in groups of 2 to 4, along identified routes that pass through the primary known habitat types for one or all of these three species. At identified points along each route VWO's will stop for a specified amount of time and record the presence or absence of the three target species and their young of the year, document observations of calls and sign (e.g. tracks, scat, hay piles, nest etc.) from these target species, collect GPS point locations, take verification photos and document site information and the behavior of the species observed. These surveys will be conducted on an ongoing basis during the months of June through October, following an undesignated schedule based on availability of VWO's. VWO's will also keep a record of all incidental, or opportunistic, sightings of these three species. The project coordinator will conduct verification surveys on each of these routes at least once during the field season, following the same protocol with the addition of collecting scat samples. In some cases VWO's may also be asked to collect scat samples.

In addition to these ongoing surveys, three additional types of surveys will also be conducted parkwide at specific times during the field season:

- The first type of parkwide survey will be a single day mountain goat census that will take place in early August. VWO's will go to each of the designated high priority mountain goat areas and document presence or absence of goats.
- The second parkwide survey will complement aerial overflights for mountain goats being conducted by Dr. Don White during August of 2008. Groups of 10 to 20 VWO's will be positioned in groups of two on the ground at accessible locations during the overflights to conduct ground surveys of the mountain goat population as a means of assessing the potential bias in the aerial survey method.
- The third type of parkwide survey will take place in late September through early October and will focus on visiting all designated high priority Clark's Nutcracker areas to distinguish the presence of territorial birds from migratory birds. VWO's will do point counts of all birds observed or heard at 250-meter intervals. They will also conduct the same point counts using a low volume Clark's Nutcracker call playback unit and listen for response by territorial pairs.

These protocols will complement other studies going on in the park and the data will benefit those studies as well.

**Outcomes with Completion Dates:** Due Date for Final Draft Report and/or Other Products: December 31, 2011

Schedule

Summer and fall 2008	refine study plan and methods; collect field data
Fall 2008 - spring 2009	analyze data; improve methodologies
Summer and fall 2009	collect field data
Fall 2009 - fall 2010	analyze data, write thesis and reports

**Keywords:** Citizen Science, monitoring, mountain goats, pikas, Clark's Nutcrackers, Glacier National Park, University of Montana