Citizen Science

At an elevation of 13,160 feet sits a field of pink granite boulders that visitors scamper over on their way to the summit of Rocky Mountain National Park's highest mountain, Longs Peak. It is a stark place devoid of vegetation, scoured by strong winds, and dried by intense sun. Few visitors know that it is among the most complicated landscapes in the park. Geoscientist Jon Achuff has studied this area and believes the entire Longs Peak Boulderfield is moving on a glacier. His research is time consuming and strenuous, requiring him to carry delicate equipment in all seasons more than 7 miles to the research site. This research effort is astonishing for another reason: Achuff is a volunteer. In 2005 a legion of citizen scientists donated more than 9,000 hours to Rocky Mountain National Park research projects through the Continental Divide Research Learning Center.

Research volunteers came from diverse backgrounds and worked on a variety of research activities, ranging from University of Colorado students researching the history of the park's buildings to retirees monitoring the park's hummingbirds. Groups and individuals observed bighorn sheep behavior, counted elk, monitored air quality, and mapped vegetation for amphibian habitat. The research learning center also recruited volunteers for cultural resource projects, enlisting volunteers to research specific historic topics, preserve photographs and documents, and measure historic structures.

Professional scientists are also a critical part of the citizen science volunteer initiative at Rocky Mountain National Park. Volunteer and principal investigator Rich Bray has led the butterfly monitoring efforts for the past ten years, donating some 7,000 hours to the effort. Not only do researchers like Bray give their own time, but they also help train others. With the help of the research learning center Bray recruited and trained volunteer field assistants. The financial value of the contribution of volunteer scientists is also substantial. For example, Achuff's glacier studies would have cost the park or its partners approximately $35,000 and volunteer efforts to research historic buildings saved the park thousands of dollars in contract fees.

Citizen scientists monitor butterflies in Rocky Mountain National Park. (photo courtesy of Rich Bray)

Whether they are volunteers assisting researchers with a specific project or professional scientists acting as principal investigators, research volunteers work closely with park professionals to develop and complete research projects. Volunteer researchers extend the capacity of the National Park Service to develop the science necessary to appropriately manage park resources. For example, volunteers working with a university researcher observed the behavior of bighorn sheep, helping park scientists to develop quantitative documentation of the influence of cars and people on bighorn behavior. Based on this research managers are developing a strategy for reducing stress on the animals when they attempt to cross a popular park road to access a mineral lick.

Not only did the park benefit from citizen scientists, but volunteers also deepen their understanding of the complexities of ecosystems, learned about the quandaries of resource protection, and became active stewards of the park's natural and cultural resources. In addition to providing exceptional educational opportunities, parks are living laboratories that offer unparalleled research possibilities to professional scientists. National parks allow researchers to investigate natural systems that are relatively undisturbed, providing important opportunities to develop baseline information.

Supporting park research and providing exceptional educational experiences are the dual goals of the National Park Service's research learning centers. The Continental Divide Research Learning Center found an exciting and rewarding way to reach these goals by recruiting citizen scientists to assist with park research activities.

For more information on the research learning center, see www.nps.gov/romo/education/CDRLC/index.html or contact Cheri Yost, at Cheri_Yost@nps.gov or (970) 586-1394.