

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Ice Patches as Sources of Archeological and Paleoecological Data in Climate Change Research in Glacier National Park

Discipline: Cultural Resources
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: University of Wyoming, Northwest College
Effective Dates: 5/5/2010- 12/31/2016
Funding Amount: \$559,014 [FY12: 113,365; FY11: \$204,510; FY10: \$241,139]

Investigators and Agency Representative:

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Project Abstract: Archaeological discoveries in high latitude and sub-alpine environments reveal that melting ice patches and glaciers expose well preserved yet fragile cultural materials. The cultural and scientific value of these fragile artifacts is immeasurable but fragile items quickly deteriorate if they are left exposed to the elements, animals, or collectors. Climate change-related phenomena are new and critical concerns for Native Americans who have ancient heritage links with what is now Glacier National Park. Glaciers and snowscapes are integral parts tribal creation stories. The alpine zones are important special areas for hunting, gathering, and ceremonial use. Important cultural plants, minerals, and animals were procured in these unique environmental settings. Recent dramatic changes brought to these alpine and subalpine areas have caused an imbalance to a natural ecological system used and maintained by tribal ancestors since time immemorial, threatening permanent loss of heritage cultural and natural resources. Increasingly rapid ice and snowmelt in Glacier National Park creates a critical cultural resource issue that must be addressed in a timely and comprehensive manner. Thorough examination and evaluation of impacts are the first steps to address endangered cultural and scientific resources and knowledge. Cultural resource studies focused on areas newly exposed by receding ice and snow fields provide insights about prehistoric lifeways in alpine and subalpine zones, as well as essential information on ancient climates and recent changes that are critical for evaluating the historical context of recent man-made habitat shifts. In addition, monitoring of ice and snow fields and exposed artifacts is critical. Such efforts must be coordinated among Native American tribes, environmental scientists, and archeologists to ensure consideration of issues, values, synergy between different domains of knowledge, and compliance with federal laws governing stewardship of cultural resources (36 CFR Part 800, Sections 110 and 106 of the National Historic Preservation Act, Sacred Sites [EO 13007], the Native American Graves Protection and Repatriation Act (43 CFR Part 10), the Archeological Resources Protection Act, and others).

Overall Project Objectives

The "Ice Patches as Sources of Archeological and Paleoecological Data in Climate Change Research in Glacier National Park" project will take place over a three-year period and involves a partnership among Glacier National Park, the University of Wyoming (UWY), the Institute for Arctic and Alpine Research at Colorado University Boulder (INSTAAR), the Confederated Salish and Kootenai Tribes of the Flathead Reservation (CSKT), and the Blackfeet Nation (BN). The project's overall objectives are

- 1) To work collaboratively with scientists from the University of Wyoming and INSTAAR/Colorado University, Boulder to investigate and document ice/snow patches in Glacier National Park in order to identify archeological, ethnographic, and paleobiological resources endangered by recent climate change and to recover archeological and paleoecological data relevant to global warming research.
- 2) To work collaboratively with the Confederated Salish and Kootenai Tribes of the Flathead Nation and the Blackfeet Nation to develop and implement culturally appropriate protective and conservation measures for sensitive cultural sites, features, and objects at risk from snowmelt.
- 3) To enhance cultural resource stewardship and protection at Glacier National Park through public education and interpretation about climate change impacts on cultural resources and resident indigenous communities.
- 4) To implement a strategy and methodology for assessing and mitigating impacts to cultural resources from glacial and snow/ice field recession that can serve as a model for other parks, agencies and entities in the United States and throughout the world.

This agreement covers actions to be undertaken by Dr. Robert Kelly of the University of Wyoming (UWY), who will coordinate sub-agreements with the CSKT and BN. Dr. Craig Lee at INSTAAR/Colorado University, Boulder is working on the Ice Archaeology Project for Glacier NP under a separate RM-CESU task agreement.

Outcomes with Completion Dates: Draft Project Report (June 30, 2014) and final Project Report (no later than 4 weeks after receipt of comments from NPS)

Keywords: Ice Patch Archeology, paleoecological data, climate change, Glacier National Park, University of Wyoming