



PARKScience

Integrating Research and Resource Management in the National Parks

ISSN 1090-9966

Volume 26, Number 2, Fall 2009

Published: 28 October 2009 (online) • 8 December 2009 (in print) • <http://www.nature.nps.gov/ParkScience/index.cfm?ArticleID=320&Page=1>

In Focus

Archaeological field school provides valuable data for Hawaii Volcanoes National Park

By Betsie Blumberg

By Betsie Blumberg



NPS/HAWAII VOLCANOES NATIONAL PARK

High school students under the supervision of University of Hawaii at Hilo Professor Steve Lundblad (in red hat) examine basalt chips at Kilauea caldera and learn archaeological techniques that will provide information about the early Hawaiians' use and trade of lithic material.

DURING SUMMER 2007, the Hawaii–Pacific Islands Cooperative Ecosystem Studies Unit facilitated a project at Hawaii Volcanoes National Park that accomplished two goals: identifying the

sources of Hawaiian stone artifacts in the park collection, and training high school students in the archaeological techniques used in this study. Partners were the National Park Service and the University of Hawaii, Hilo.

Twelve students from the Na Pua No'eu Gifted and Talented Hawaiian program spent two weeks attending an archaeological field school working with park and university staff learning basic archaeological techniques, including field description, use of Global Positioning System equipment, artifact collection, and lab analysis. The students worked in a remote part of the park on the northern edge of the Kilauea caldera. This caldera erupts explosively (at approximately 300-year intervals), spewing forth chunks of basalt, a fine-grained material that the indigenous Hawaiians chipped into tools. They would knap the basalt into rough forms at the quarries and carry off the cores to refine later, leaving behind the flakes of stone that archaeologists recognize as the debitage of an ancient workshop. In 2007, the young archaeology students located the quarry site and collected samples from several features.

The next step was to define the “signature” of the Kilauea basalt using a state-of-the-art spectrometer at the University of Hawaii. The spectrometer analyzes the stone to determine the particular set of trace elements that allow an artifact to be associated with its quarry source. The students learned how to operate this equipment and were able to analyze not only the material they had collected, but also artifacts in the park’s collection. They found that some pieces in the collection came from other parts of the island of Hawaii and from other islands, just as artifacts made of the basalt from the Kilauea caldera have been found far from their source. Tracking the transport of lithic materials provides insight into the movement and trade of Hawaiian people before and during the early years of contact with Europeans. The artifacts in the park’s collection are dated at about AD 1450. The Kilauea caldera quarries are dated at about AD 1650 to 1790. Analysis of these materials and their provenance also sheds light on the strategies used to procure lithic resources, as well as variations in tools and their distribution over time. The information gained from this project will provide Hawaii Volcanoes National Park with baseline data needed in making appropriate research decisions and in evaluating sites for the National Register of Historic Places. The experience of the students in the field school acquainted them with Hawaii’s prehistory and the techniques employed to discover it. Perhaps some of them will pursue this study in the future and contribute further to our understanding of the earliest inhabitants of Hawaii.

[—Contact the author.](#)

National Park Service
U.S. Department of the Interior

Natural Resource Stewardship and Science
Office of Education and Outreach



Park Science, Volume 26, Number 2, Fall 2009, ISSN 1090-9966
National Park Service, U.S. Department of the Interior
Natural Resource Program Center, Office of Education and Outreach
Lakewood, Colorado