

Mile Island, Mile Atoll," *Report OTIA-TAG-MAR-42-5/90* (Majuro Atoll, Republic of the Marshall Islands: Alele Museum, 1990); D. Look and D. H. R. Spennemann, *op. cit.*, note 5 (1993a); W. M. Adams, R. E. Ross, and B. L. Krause, *Archaeological Survey of Taroa Island, Maloelap Atoll, Republic of the Marshall Islands*, Report prepared for the Micronesian Endowment for Historic Preservation. March 10, 1990. p. 104.

⁷ cf. D. H. R. Spennemann, *Mile, Mile Atoll*, Air Marshall Islands *Sunday Escape*, Folded tour brochure, 2pp, (Majuro: AIR Marshall Islands, 1991); *op. cit.*, *Taroa, Maloelap Atoll*. id. (1992) Wotje, Wotje Atoll.

⁸ G. Murphy, "Majuro: Gateway to Coral Paradise," *Skin Diver* 39:3 (March 1990), pp. 128-134.

⁹ cf. W. H. Bartsch, "Wreck Discovery: Unknown Maloelap," *After the Battle*, 54 (1986), pp. 28-41.

¹⁰ D. Look and D.H.R. Spennemann *op. cit.*, note 5; D. H. R. Spennemann and David W. Look, "Impact of Tropical Vegetation on Historical Cultural Resources. A Photographic Case Study from the Marshall Islands," The Johnstone Centre for Parks, Recreation and Heritage, Report N 18, (The Johnstone Centre for Parks, Recreation and Heritage, Charles Sturt University, Albury, NSW, 1994).

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Managing Cultural Resources in a Multi-Use Area

Nestled in the saddle between the mountain slopes of Mauna Kea, Mauna Loa, and Hualalai on the island of Hawai'i is the U.S.

Army's Pohakuloa Training Area (PTA). This active training area is home to land-based training of the 25th Infantry Division (Light), the U.S. Navy, the U.S. Marine Corps, the National Guard and those Pacific Rim countries allied with the United States.

Besides being an active military training facility, PTA is also rich in cultural resources. PTA encompasses approximately 108,000 acres and contains over 170 formally recorded archeological sites. The number of sites identified at PTA is staggering, considering archeologists have surveyed only 20% of the land.

The Army is responsible for managing and protecting the cultural resources on these lands. Through its Ecosystem Management Program (EMP), the Army has enhanced its role as cultural resource managers that began nearly two decades ago. At PTA, archeologists are attempting to achieve several goals: develop proper management planning; complete the inventory survey of all PTA lands; enhance research opportunities; ensure the protection of archeological sites; and educate the

military and public about the cultural heritage at Pohakuloa.

Located in a marginal region of the island, PTA lies at an elevation between 1,500 m (5,100 feet) and 2,750 m (9,000 feet). The annual average rainfall for this area is approximately 500 mm (20 inches). The average temperature during the day ranges between 50 and 70 degrees Fahrenheit, while at night it may plunge nearly 40 degrees. The vegetation at PTA is a mix of subalpine and montane dry shrublands.

In part, because of its marginal position on the island, it was not until the last decade that archeologists considered this region to be significant for investigating the prehistoric past. Previously, focus on the upland region was on the middle and upper slopes of Mauna Kea, in particular the adze quarry which Hawaiians used for over 700 years.

In response to mandates provided by federal historic preservation laws, archeologists began to investigate the lower slopes and PTA flats. The surveys resulted in the identification of several site types at Pohakuloa. The most frequent site type archeologists find are culturally modified lava tubes which make up 70% of the prehistoric properties. Other sites identified include cairns, lithic quarries and workshops, trails, platforms, walls,

excavated pits, open air shelters, shrines, and petroglyphs.

The earliest evidence of human activity in Pohakuloa dates to A.D. 700 and spanned over 1,000 years. Hawaiians used this area extensively for procurement of birds, wood, and water. Hawaiians hunted seabirds that once nested in the region for food, and forest birds for their colorful feathers used in royal cloaks and head pieces.

While hunting, Hawaiians used the caves for habitation and for collecting drinking water. They placed gourds on the floor of the caves to collect water that dripped from the ceiling. The Pohakuloa forests also provided sandalwood and other economic and medicinal plants which Hawaiians gathered. Bundles of sandalwood can still be found in the caves where they were left for later transport to the coast along the ancient trail systems that crossed through the area.

Management of these resources is an important responsibility of the U.S. Army Garrison, Hawai'i. Regulations mandate that the Army make informed decisions regarding the cultural resources under their control. These decisions must be in compliance with public laws, in support of the military mission and consistent with sound principles of cultural resource management. In response to the challenge of protecting its natural and cultural resources, the Army, with funding from a 1995 Congressional appropriation, initiated the Ecosystems Management Program (EMP). The goals of the EMP is to preserve, protect, and enhance the resources on lands utilized by the Army in Hawai'i. Four areas of concern are being addressed by the EMP program: cultural resource management planning, inventory, education and research.

Management planning at PTA has included the development of a Historic Preservation Plan and a site protection plan for the Bobcat Trail Habitation Cave, which is listed on the National Register of Historic Places. Both of these plans

address the requirements of the Army and its land managers in evaluating, assessing, managing, and protecting historic properties.

Inventory of all training lands is a primary goal of cultural resource management at PTA. Using EMP funding, the Army, through the Army Corps of Engineers, contracted with Ogden Environmental and Energy Services to conduct several large-scale field projects.

The first project involved phase one implementation of the site protection plan for Bobcat Cave, one of the largest and more intensively used sites found at Pohakuloa. The results of this project included the discovery of new features and development of a comprehensive inventory that will serve as a model for management of other sites at PTA.

A second project included ground reconnaissance of 1,500 acres of training land in eastern PTA, the use of high resolution imagery, and paleo-environmental analysis. Preliminary results of this project indicate there are several hundred new pre-historic features in the area. Once completed, recommendations included in the survey report will help personnel manage both the sites and fixed ranges located in this part of the training facility. If successful, the high resolution imagery may also identify sites that are in areas too dangerous for personnel to enter. It may also be a useful aid in the initial planning phase of new Army projects.

In 1998, a second phase of the eastern training area survey will begin. Resource managers plan to complete survey on approximately 2,000 additional acres of training lands.

Another management concern is site protection. To protect historic properties we must identify and monitor forces that impact sites. Thus, we are developing a Geographic Information System (GIS) database to store site information. In addition, we are performing regular field checks to monitor historic properties and educate the military and public regarding the sensitivity and care of these sites.

View of shrine with the Pohakuloa flats and Mauna Kea in the background. Photo courtesy S. Henderson.



Prehistoric petroglyphs at PTA.
Photo by the author.



The GIS system will aid civilian and military personnel in identifying environmentally sensitive areas. The monitoring program will protect sites from threats such as ungulate and human trampling, vandalism, looting, and unregulated site visits.

Finally, the purpose of the public outreach program is to educate and enhance the awareness of both the military and community on the cultural resources at PTA. This effort incorporates the use of an award winning environmental video that the Army shows to its troops when they arrive at PTA for training. The video underscores the fragility of PTA's resources and outlines the rules for protecting and avoiding historic sites. The outreach program has included presentations on archeology at local schools and other community functions. PTA also hosted the 1997 University of Hawai'i at Mānoa Archaeological Field School. The field school trained students in basic archeological techniques while helping the Army fulfill some of its inventory requirements.

Resource managers have much more to do at PTA. Archeologists need to continue inventory survey in compliance with all state and federal laws. Education of the military and public must expand

so that we may continue to preserve our resources and appreciate the heritage of Hawai'i. Research needs to continue so we may further understand the role of the saddle region in the prehistory of Hawai'i. The Ecosystem Management Program will be integral in achieving these goals as cultural resource management planning continues to evolve at PTA.

Suggested Readings

- Athens, J. Stephen, and M.W. Kaschko. *Prehistoric Upland Bird Hunters: High Altitude Resource Exploitation on Hawai'i Island*. Bishop Museum Occasional Papers 31 (1991):63-84.
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Teaching with Historic Places Lesson Plan on Pearl Harbor

The National Register of Historic Place's Teaching with Historic Places program offers classroom-ready lesson plans based on National Register properties across the country. Lesson plans use primary documents, readings, maps, and historical and modern photographs to bring the engaging stories of these places into the classroom. A lesson plan on Pearl Harbor, "Remembering Pearl Harbor: The USS *Arizona* Memorial," has students trace the course of the Japanese surprise attack on the U.S. Pacific Fleet at Pearl Harbor and consider the significance of the USS *Arizona* Memorial. For lesson plan ordering information, contact Jackdaw Publications, P.O. Box 503, Amawalk, NY 10501; (800) 789-0022.