

2016 CNO Environmental Award Nomination  
Naval Air Weapon Station China Lake - Cultural Resource Management Team

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Cultural Resource Management – Team

Department of Defense

**INTRODUCTION**

Naval Air Weapons Station’s Cultural Resource Team has made significant strides in the management of cultural resources located within the installation’s boundaries. Located in the California Mojave Desert and spanning 1.2 million acres, NAWS China Lake represents 34 percent of the Navy’s land holdings worldwide. An impressive 85 percent of the Navy’s research, development, acquisition, test, and evaluation (RDAT&E) programs are conducted at NAWS China Lake.

The installation was established as the Naval Ordnance Test Station (NOTS) on November 8, 1943 as a partnership between the Navy and California Institute of Technology for the testing and evaluation of rockets and other aviation ordnance. This partnership and interaction between civilian scientists/engineers and experienced military personnel has made China Lake one of the preeminent RDAT&E institutions in the world.



**Flight Mission Over NAWS China Lake**

In addition to RDAT&E activities, China Lake also hosts a Seabee School, EOD Training Command, and energy production facilities that operates as a public private venture.

China Lake’s Cultural Resource Team members for FY15/FY16 include Cultural Resource Program Manager Mike Baskerville and Archaeologists Nancy Pahr, Seth Sampson, Barbara Bane, and Curator Tracy Buday.

At least 95 percent of NAWS China Lake’s land holdings (over 1 million acres) have been left undisturbed and is home to the largest collections and concentrations of Native American rock art in the Western Hemisphere, including numerous well preserved prehistoric, ethnohistoric, and historic sites that represent the human experience in North America from the Stone Age to the Age of Rockets.



**Incised Green Slate Pendant**

Since the passage of the National Historic Preservation Act in 1966 263,806 acres of installation Lands (24%) have been inventoried, resulting in 5,400 sites documented. The majority of the inventories and site documentation occurred after 1979 when the Installations Cultural Resource Program was founded. Prior to that time inventories and site recordation were completed by Academic institutions conducting private research.

Major Cultural Resource Team activities and accomplishments for 2015/2016 include:

- Inventory of 57,901 acres (nearly 5% of total land area)
- Recordation of 594 sites
- Evaluation of 371 sites
- Completion of a technology demonstration project that recorded 200 meters of Little Petroglyph Canyon. The project demonstrated that with modern technology sites such as this one can be recorded in months instead of years.

- Education

The projects listed above will significantly reduce the amount of time required to conduct future environmental evaluations related to expansion of the mission at China Lake, substantially reduced environmental/mission conflict, and meaningfully lower the cost and time associated with the management of one of the installations most important cultural properties. Collectively, they illustrate that the NAWS China Lake Cultural Resources Team continues to be on the cutting edge of better, more efficient, and technically advanced archaeological methods and stewardship in support of the military mission.

**CULTURAL RESOURCES – PROGRAM MANAGEMENT OVERVIEW AND ACCOMPLISHMENTS**

The goal of the China Lake cultural resource program is to manage the resources found on the installation consistent with federal regulation, DoD and Navy goals. These goals consist of managing and maintaining cultural properties in a sustainable manner through a comprehensive program that considers the preservation of historic, archaeological, architectural, and cultural values; is mission supporting; and results in sound and responsible stewardship. To meet DoD and Navy goals, the cultural resource program at China Lake has developed and implemented several initiatives; 1) Long term planning, 2) Understanding of installation and tenant missions and objectives, 3) Coordination and consultation, 4) Innovation 5) Education.

The cultural resources team is ultimately led by PWO Commander Brian Longbottom. Navy Personnel who contributed significantly to the 2016 accomplishments of the cultural resources program include Peggy Shoaf (Retired), Robin Hoffman (NAVAIR), Robert Jensen (NAWCWD), Alex Bethke (NAVFAC), Andy Yatsko (NAVFAC/Region), David Sproul (NAVFAC), John O’Gara (Retired), Tom Campbell (Retired), Dale English (NAVFAC), and the Cultural Team listed above.

**Long Term Planning / Mission Enhancement /Archaeological Resources**

Proactive management rather than reactive management has been the goal of the China Lake Cultural Resource Program since 2007. FY16 marks the year in which 57,901 acres of installation lands were inventoried. This action was in large part carried out under Section 110 of the National Historic Preservation Act.

Under the same proactive approach, China Lake also evaluated 16 sites located in or near priority target areas.



**Cultural Resource Team (from left to right): Mike Baskerville, Nancy Pahr, Tracy Buday and Barbara Bane. (Back Row) Seth Sampson.**

**Rock Art Recordation Technology Demonstration Project**

The 2010 Coso Petroglyph National Historic Landmark Management Plan identified several issues associated with the management of rock art located on the installation. The biggest risk was a lack of adequate documentation which in turn has led to questions about site conditions and damage to the petroglyphs or even theft without the program knowing. Several attempts to record rock art within Little Petroglyph Canyon had been attempted but they all suffered from significant limitations in that they either focused on a single aspect of the rock art found in the canyon or were of insufficient quality to provide the information

required to manage the resource. In late 2015 Mike Baskerville and Alex Bethke discussed the issue and with some research came to conclusion that current technology might have reached a point at which it could accurately and digitally record the resource. Given past issues associated with recordation and lacking a complete of understanding of the capabilities of the technology to be used, the team decided to conduct a limited 200 meter test within the canyon. The selected portion of Little Petroglyph Canyon was chosen because of its high concentration of rock art as well as diversity of rock art styles. The goal of the demonstration was to:

- Test a variety of technology
- Determine if the technology could record the rock art in a cost and time effective manner
- Make the product interactive with GIS
- Produce results that could be used to manage the resources in the canyon
- Provide useful outreach materials to both educators and researchers

Such a technological demonstration had never been attempted for cultural resources within Region Southwest. As a result, the NAVFAC Desert IPT contracting team was challenged with devising a viable method of acquiring such innovative work. Additionally, it was not clear which of the technologies had the best chance for success. To develop the scope of work, it became evident that the Navy team needed input from the contracting community and an industry forum was held to gather ideas and feedback from those who knew specific technologies best. The industry forum was attended by thirty representatives from ten companies. One of the most important concepts that resulted was the notion of allowing contractors to define the best methodology rather than the government dictating them. In the end, the Navy accepted a proposal submitted by PacArctic and Paleowest Archaeology, the former being a Native Alaskan Corporation. A working version of the project was demonstrated to archaeologist and other

interest parties at the 2016 Great Basin Anthropological Conference to much wonderment and celebration by conference attendees who impelled the team to reveal more.

While the final product is pending Navy review, it is clear that the project has achieved major breakthroughs in several areas:

1. The two hundred meter section of the canyon (both walls) were recorded in eleven days using photogeometry, GPS base stations and drones, a similar sized project using traditional methods occurred at Little Lake, CA whereas previous efforts have taken 20 years and several hundred volunteers;
2. As a computer based system, the canyon is now available to people around the globe through a 3-D version, allowing individuals to experience the canyon whereas both security and safety currently limit access to the site;
3. Detailed 3-D modeling now makes the canyon's petroglyphs and panels available to researchers around the world, complete with coordinates, to facilitate additional study of the National Historic Landmark without having to access or further destroy the site; and;
4. Enables installation staff to identify the exact location of individual panels and conduct meaningful resource monitoring.



**Anthropomorphic figure located in Dead End Canyon.**

It should also be also noted that much of the computer programming and software development was custom produced, requiring international cooperation from several gaming and photographic software designers to complete.

For a demonstration of the public program, paste the following address into your web browser: <http://extranet.hmxmedia.com/Paleowest/v10/index.html>. Allow up to 30 seconds for the images to focus once you have navigate to a panel.

Overall, the technology demonstrated that a resource as complex as Little Petroglyph Canyon can be recorded in a two month period vs decades using older methods and at a considerable savings to the Navy.

***Native American Program***

China Lake currently consults with eight federally recognized tribes and coordinates with one non-federally recognized tribe. Routine consultation consists of two bi-annual meetings, one of which is hosted by the NAWS China Lake Commanding Officer. Topics covered during this meeting are related to the progress of Section 106 and 110 projects, proposed inventories, and Coso Hot Springs (an important

spiritual site and an area of longstanding controversy between the tribes and the Navy). The controversy is associated with the development of geothermal facilities near the site and changes to the behavior of the Hot Springs. When held at China Lake, these meetings usually end with a tour of a specific site important to the attending tribes.

Prior to 2009, such tribal meetings could generally be described as hostile. Two changes in NAWS China Lake policy resulted in a markedly improved tone:

- The Installation Commander attends all meetings with the tribes; and
- The tribes have been given greater access to the installation.

While these actions appear to be benign, they have had a major impact in the productivity of the meetings and the installation’s ability to move forward with its military mission. In 2016, the cultural program provided a Petroglyph Tour Guide Training at the request of the tribes. This training was intended for interested tribal members and conducted in conjunction with a pine nut harvesting reconnaissance with tribal members to determine whether or not the Pinyon trees located on the installation have produced sufficient quantities of nuts for harvesting.

The installation is in progress of renegotiating the existing Coso Hot Springs Access Agreement with seven of the installation’s eight federally recognized tribes -the Timbisha tribe has already signed a new agreement. The intended purpose of the agreement is to increase the number of formal visits from eight to twelve, allow for emergency visitation (illness), and to give responsibility for coordinating visitation the tribes. In total, this agreement seeks to provide more respectful authority to the tribes for access to such a religious and culturally important site.

While the progress in Native American relations cannot be fully measured in monetary terms, the overall improvement in relations has resulted in a significant reduction of tension between the Navy and Native American tribes, which has allowed both groups to focus on

resolving critical issues to move forward in a productive manner.

### *Curation*

There is one long term goal for the NAWS China Lake curation facility - to enable an easy and accessible research or viewing experience for academics and tribal members. This goal took a significant step forward in FY16 with the addition of Tracy Buday as the Navy Region Southwest Curation Specialist. Tracey has been instrumental in organizing the artifact collection. There have been several part-time, collateral duty curators, each with their own vision and other priorities. The result was a collection organized in multiple ways, posing issues for individuals visiting the facility. Tracy is in the process of reorganizing the collection and updating associated records, making it easier to find collections. Additionally, she has implemented existing collection policy established in the installation's ICRMP, modified policy where it has not been working, and serves as a single point of contact for questions or scheduling visits.

Until 2016, the China Lake Curation Facility only housed collections from China Lake. In the spring of 2016, 452 boxes were transferred to the facility from San Nicholas Island, in an effort to consolidate collections to better meet federal standards and regulation, not to mention create efficiencies in programming and funding. Tracy has made this process both possible and implemented seamlessly to ensure accountability for all the artifacts and records. Tracy's efforts and presence alleviated tribal concerns when three tribes visited China Lake to meet Regional and China Lake Cultural Staff, inspect the curation facility, and go through the collections.

Moreover, the management of the collections would not be possible without the Friends of China Lake Archaeology. This volunteer organization was originally formed to stand up the curation facility but has since taken on the responsibility of assisting Tracy as the Curation Specialist to organize and maintain the artifact and records collections. The core group of six volunteer's averages 1,248 hours annually to processing and bettering the collections housed at

China Lake and have been acknowledged for their extraordinary role in the program's success by RADM Smith in his tenure as CNRSW.



**Display of baskets, pottery and grinding stone found on China Lake Ranges and curated at the installation's Curation Facility.**

The overall organization of the curation has steadily increased, culminating in the current status in FY16. With the integration of GIS data, and the addition of a full-time curator, substantial improvements have been made to the overall organization of the collections. The tangible results have come in increased response times to operators, tribes, researchers, and even congressional inquiries, thereby freeing other archaeologists to focus attention on managing cultural resources and the mission. Indeed, researchers can now find materials in a matter of minutes compared to hours or days, and the volunteers that have worked at the facility for over a decade have saved the Navy millions of dollars in man-hours and collections management.

### *Community Engagement/Education*

There are a number of identified purposes of the National Historic Preservation Act. One of those purposes is to manage cultural resources as public stewards "in the public interest so that its vital legacy of cultural, educational, aesthetic, inspirational, economic, and energy benefits will

be maintained and enriched for future generations of Americans.” The China Lake Cultural Resource Program takes this responsibility very seriously.

FY 2016 provided multiple educational and outreach opportunities for the installation, local, and Native American communities.

In FY 2015/2016 China Lake participated in the City of Ridgecrest’s Annual Petroglyph Festival. The festival began in 2015 under the coordination of the City of Ridgecrest and was designed to draw people from around the United States in order to diversify the economy. The China Lake Cultural Program provided guides through Little Petroglyph Canyon and Seep Springs. The guides provided a general narrative on the possible age of the rock art , various theories related to the function of the rock art, and ensured that there were no impacts to the resources.



**Historic Cabin located in the area of Cactus Flat.**

At other times, the CRM Program also provided tours of Little Petroglyph Canyon for the Foreign Navy Attaché Program and various tenant commands on the installation. During these tours, information related to the prehistory and history of the region was provided along with a talk about the role of the CRM Program in the Installations Mission.

The curation facility often receives requests from various internal and external community organizations. During FY 2016, several tours of

the facility were given to the Maturango Museum Docents Group and the Antelope Valley Sea Cadets.

Representatives of the program also participated in the training of future Petroglyph Guides. The Program is sponsored by the Maturango Museum and supported by the Installations Public Affairs Officer. As part of this training, the China Lake CRM Staff provides background on the history and prehistory of the region, the Coso Petroglyph National Historic Landmark, general theories related to age and meaning of the petroglyphs, and protocols associated with visitation. The potential guides were then given a tour of Little Petroglyph Canyon in which they were shown points of interest and provided with talking points.

For the last nine years, China Lake has hosted the California State Los Angeles Desert Archaeological Field School led by Dr. Helen Wells from California State University Los Angeles (CSULA). The field school consists of four classes held on alternating weekends in the fall. The purpose of the class is to familiarize students with general field techniques associated with site recordation and site testing. Unlike most field schools, this class is not intended to excavate the entirety of the site. The students are also introduced to the operation of GPS units and ARCGIS. The field class functions as part of the Section 110 program at China Lake with a special focus on sites located on the installation’s South Range that were previously recorded in 1940’s and are located in areas not currently in use by installation operations. Students that take the class, in large part, are training to be archaeologist but also include students from the university’s cultural anthropology and forensics programs. Students from the forensics program participate in the class in order to become familiar with archaeological data recovery processes. Most of the forensic students are also interns at the Los Angeles County Sheriffs Forensics Laboratory. In return for work on base, the school provides the installation with updated site records and documentation related to a site’s eligibility. The program has been extremely helpful and altered perceptions about the prehistoric use of the South

Range. The school has recorded and tested sites that have produced pottery traded into the region from the four corners area, clay beads associated with puebloan cultures living in southern Arizona, pottery from the Colorado River area, and obsidian from sources located as far as western Utah and northern California.

In one case, the class saved the Navy several hundred thousand dollars. For instance, the group tested a large prehistoric site that previously had been determined eligible under NHPA Criterion D, data for which a scientific basis did not exist and unduly restricted the installation's operations. In another, the CSULA Program recorded and evaluated 22 sites, finding artifacts that have provided significant insight into the use of the south range. Regardless of the outcome, the China Lake's Cultural Resources Program's relationship with CSULA illustrates the maturity and resulting ability to be a leader in the stewardship, management, and education of cultural resources in Southern California.

### **CONCLUSION**

NAWS China Lake is committed to protecting its cultural resources. To this end, the installation's Cultural Resources Program and its accomplishments are evidence of that dedication.

The efforts and objectives of the cultural resource management team have significantly contributed to the goals and mission of NAWS China Lake through increased efficiency and innovation. The combined efforts of personnel working at NAWS China Lake, NAVFAC Southwest, Regional Native American Tribes, California State University Los Angeles, and the Ridgecrest Community have produced significant achievements during the past fiscal year, including:

- Inventory of 57,901 acres
- Recordation of 594 sites
- Evaluation of 371 sites
- Completion of a technology demonstration project that recorded 200 meters of Little Petroglyph Canyon.

The NAWS China Lake cultural resource team is a leader in innovative approaches to site recordation and out-year planning; while significantly adding to our knowledge of the past, it has also developed cost and time saving methods. The firm foundation set by these efforts will continue to provide further achievements in the years to come.