



## FY 2008 Secretary of Defense ENVIRONMENTAL AWARDS

### CULTURAL RESOURCES MANAGEMENT – INSTALLATION



#### SUMMARY

Vandenberg Air Force Base, California, is home to the 30th Space Wing and the most outstanding Cultural Resources Management program in the United States Air Force for FY 2008. Remotely located on California's Central Coast, the installation provides America's only capability to launch military and commercial satellites into polar orbit and

conduct intercontinental ballistic missile testing without over-flying populated areas. This critical, national security mission is accomplished by a military, civilian and contractor workforce of more than 11,000 people, working on 99,572 acres that were ancestral lands of Native Americans, traversed by Spanish explorers, settled by ranchers and western homesteaders, and later an operational base for the Nation's military forces.

The richness and diversity of the base's historical record and cultural history is preserved and guarded by the dedicated cultural resources managers of the 30th Civil Engineer Squadron's Environmental Flight. Through daily implementation of the Integrated Cultural Resources Management Plan (ICRMP), the installation has demonstrated a focus on program management that is in lock-step with DoD's Defense Installation Support Plan objective 2.5 aimed at maximizing mission capability while protecting and preserving over 1,600 irreplaceable archaeological resources and historic properties, 14 rock art sites, and other cultural assets for benefit and enjoyment of future generations.

#### FY 2008 ACCOMPLISHMENTS

- Completion of a Memorandum of Agreement with the California State Historic Preservation Officer (SHPO) and the Santa Ynez Band of Chumash Indians for a \$3.7M stream restoration/erosion control project, and execution of innovative mitigation measures that combined archaeological data recovery with heavy construction resulting in streamlined delivery schedules, \$400K in heavy equipment cost avoidance and recovery of four layers of archaeological deposits down to 19 feet underground and dating back to 9,000 years before present
- Adaptive reuse of a rare Cold War-era erector/launcher through completion of a Historic American Building Survey/Historic American Engineering Record resulting in \$500K savings from launch hardware transfer, \$2M in overall program cost avoidance, and making a new launch mission possible
- Protection of 75 archaeological sites as part of a \$27M, 97-mile long fiber-optics system upgrade by developing avoidance measures in consultation with the proponent, the Chumash Indians and the SHPO
- Hosting the Federal Law Enforcement Training Center's Archaeological Resources Protection Act course, training 25 multi-agency cultural resources managers, law enforcement and legal professionals
- Awarded a DoD Legacy Program grant for National Public Lands Day at the "Boathouse" that enabled a historic preservation public awareness event attended by senior leaders and 75 community volunteers
- Compliance with the Native American Graves Protection and Repatriation Act through repatriation of human remains and other funerary objects from base archaeological collections into possession of the Chumash Indians
- Attainment of a complete inventory of surface archaeological sites and development of a geo-archaeological sensitivity model for use on a project-by-project basis
- Renewal of a curation agreement with the federally-certified archaeological repository at the University of California, Santa Barbara and development of a cost-saving policy for discarding unanalyzed materials
- Redesign and testing of Section 110 management methods used to assess archaeological site conditions, map badly-deteriorated areas, and prioritize stabilization and data recovery requirements using GPS, GIS and a numerically-based ranking system for potential use DoD-wide
- Recovery and development of curation agreement for a rare, 12-million year old Miocene dolphin fossil



## INTRODUCTION

Vandenberg Air Force Base (VAFB), the third largest Air Force installation, is home of the 30th Space Wing. Remotely located on California's Central Coast, the installation provides America's only capability to launch military and commercial satellites into polar orbit and conduct intercontinental ballistic missile testing without over-flying populated areas. The 30th Space Wing also operates the Western Range consisting of instrumentation sites along the California coast providing a vast array of space and missile tracking equipment and is also home to Missile Defense Agency test and operations programs. These critical, national security missions are accomplished by a combined military, civilian and contractor workforce of more than 11,000 people working on a 99,572 acre property that was the ancestral lands of Native Americans, traversed by Spanish explorers, settled by ranchers, and later an operational base for the Nation's military forces.

VAFB is bordered by 42 miles of Pacific Ocean coastline providing a scenic backdrop for a tremendously rich and varied cultural resource history. With humble military beginnings as Camp Cooke, an Army training post during World War II for over 36,000 troops, the base grew into a preeminent Cold War asset during the 1950s following property transfer to the Air Force and renaming of the installation in 1958 in honor of the 2nd Air Force Chief of Staff, General Hoyt S. Vandenberg. Today, the base confronts the daily challenge of sustaining military operations and delivering mission capability, while assuring the preservation of its irreplaceable cultural resource heritage and assets.

## BACKGROUND

The bedrock for program implementation is the base's Integrated Cultural Resources Management Plan (ICRMP). With contributions from nationally recognized historic preservation experts such as Thomas F. King and renowned California archaeologist Michael J. Morato, this impressive 14-volume set establishes specific practices and procedures for managing all aspects of the cultural resources management program and implements objective 2.5 and associated measures and outcomes of DoD's Defense Installation Support Plan. The ICRMP ensures that mission planning and execution are made possible through early identification of cultural resource assets allowing maximum availability of mission-essential property and acreage. These cultural resource assets include more than 1,600 prehistoric archaeological sites that attest to a Native

American presence going back 9,000 years, historical sites including launch complexes (one of which is a National Historic Landmark), and many other irreplaceable buildings of exceptional Cold War significance.

Cultural resources program management at Vandenberg AFB is accomplished by the cultural resources team within the Conservation Element of the 30th Civil Engineer Squadron's Environmental Flight. Four dedicated archaeologists ensure that Vandenberg's cultural assets are protected and preserved while supporting mission execution.

## PROGRAM SUMMARY

FY 2008 was witness to many outstanding program accomplishments supporting ICRMP objectives including an archaeological investigation to support a daunting, \$3.7M in-house erosion control project displacing 52,000 cubic yards of soil; integration of cultural resource requirements into a large-scale housing privatization initiative; adaptive reuse of a Cold War-era rocket launcher saving upwards of \$500K; hosting a Federal Law Enforcement Training Center Archaeological Resources Protection Act (ARPA) course training over 25 multi-agency personnel; protection of 75 archaeological sites during a \$27M, 97-mile long fiber-optic communications system upgrade by coordination with the project proponent to develop avoidance measures; enhancing 434 acres of endangered species habitat by removing three highly aggressive invasive plant species without damaging 14 archaeological sites and one National Historic Landmark; hosting the University of California at Davis archaeological field school to evaluate two large prehistoric sites bisected by base firebreaks at no cost to the government and saving \$150K in labor costs; and award of a \$4K DoD Legacy program grant for National Public Lands Day that enabled a fantastic public awareness event at the historic Coast Guard 'Boathouse' attended by senior leaders and community volunteers.

## ACCOMPLISHMENTS

### OVERALL CULTURAL RESOURCES MANAGEMENT

FY 2008 emphasized robust programming, planning and budgeting for cultural resource requirements based on ICRMP goals, resulting in headquarters program validation through FY 2010 and out-year requirements projections built through FY 2015.



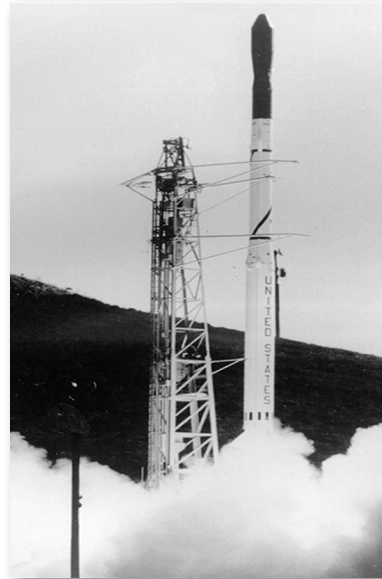


An impressive Section 110 management program exists at Vandenberg to address numerous exceptionally significant sites located along the harsh coastline and elsewhere. Sensitive and threatened sites are monitored annually along with sites within one of 20 zones. Following site-specific condition assessments, management recommendations are provided which can result in stabilization measures or, in the extreme, data recovery excavations. The program was revamped in FY 2008 to incorporate global positioning system (GPS) and geographic information system (GIS) capability, a data dictionary, and a numerically-based ranking system to better prioritize and justify preservation requirements. Once testing the beta version is finished, the methods will be finalized and made available for use at other installations.

### **HISTORIC BUILDINGS & STRUCTURES**

There is no better example of adaptive reuse than the efforts occurring at Space Launch Complex 5 (SLC-5). The central piece of launch hardware at SLC-5, the SCOUT (Solid Controlled Orbital Utility Test) erector/launcher, is one of only three in the world and is being transferred to U.S. Navy ownership for installation and use at the Pacific Missile Range Facility. There, the old SCOUT hardware will find new life in a program exploring rail-launched space vehicles capable of launching small satellites for technology demonstration missions at low cost. Through diligent and careful coordination with the SHPO, the project proponent, base Plans and Programs, and completion of a Historic American Building Survey/Historic American Engineering Record (HABS/HAER), a unique chapter in US missile history has been documented in detail while a valuable space launch asset was given new life in national defense with a \$500K cost savings to the taxpayer from hardware transfer and an overall program costs savings of up to \$2M.

The base also successfully completed the final phase of an eight-year, \$4M project for preservation of Space Launch Complex 10 (SLC-10), a National Historic Landmark built in 1958 for the U.S. Air Force's Intermediate Range Ballistic Missile training and testing program, and later adapted for space flight purposes. These preservation/rehabilitation efforts ensure that SLC-10 will remain the best surviving example of an early launch complex built during the infancy of US space exploration and reconnaissance programs. SLC-10, the Missile Heritage Center, preserves one of the most extensive collections of launch control hardware from the 1950s.



*Adaptive Reuse in action! The SLC-5 SCOUT erector/launcher is being transferred to the U.S. Navy's Pacific Missile Range Facility for use in the Low Earth Orbit Nanosat-Integrated Defense Autonomous System (LEONIDAS). Cultural resources managers worked with the project proponent to ensure this Cold War asset would once again find new life in space launch programs. Successful completion of a HABS/HAER made this possible.*

### **ARCHAEOLOGICAL RESOURCES**

More than 1,600 prehistoric archaeological sites attest to a Native American presence on Vandenberg spanning 9,000 years, including four historic Native American villages, another 12 unnamed village sites, 14 rock art sites, hundreds of shell midden sites, and numerous cemeteries. Additionally, 118 historical archaeological sites date from the Mission Period and up to the Camp Cooke years. In general, cultural resources managers adhere to a philosophy of preservation in place whenever possible, seeking ways to help proponents avoid sites and costly and time-consuming National Register evaluation excavations. Using a state-of-the-art GIS in day-to-day project reviews, the cultural resources staff is able to quickly perform a virtual survey to provide project proponents with a preliminary assessment of cultural resources issues and recommendations.

Last year, the base implemented innovative and aggressive stabilization actions at 15 sites, plus data recovery at one site where no feasible stabilization measures existed. Section 110 monitoring protects cultural resources from illicit damages to some extent, but the cultural resources staff receives additional support in this effort from Conservation Law Enforcement, and, occasionally, base legal staff. To ensure all partners are knowledgeable and well-trained in this area, VAFB hosted a one-week Federal Law Enforcement Training Center course on ARPA, providing training to 25 attendees from multiple installations and federal agencies.



## **NATIVE AMERICAN PROGRAM**

Vandenberg AFB has a long-standing partnership with the Santa Ynez Band of Chumash Indians as joint stewards of all Native American cultural resources on base. The Wing Commander's 2008 appointment of the cultural resources team leader to the position of base Native American Liaison demonstrates his commitment to effective government-to-government interactions. In the capacity of Liaison, the cultural resources team leader fostered mutually positive relationships by coordinating the Wing Commander's attendance at an event honoring Native American veterans and a Tribal Pow-Wow, and later coordinating the Chumash Tribal Chairman's attendance at a weekend hunting excursion on base with the Wing Commander. The cultural team leader also performs annual coordination and renewal of Tribal member base passes for the purposes of fishing, hunting, collecting native plant materials for traditional practices, visiting sacred sites, and related activities.

Rock art sites on Vandenberg are regarded as sacred by the Chumash, and, as such, are the most frequently visited resources on base by cultural resources staff, Conservation Law Enforcement officials, and rock art specialists to ensure all remains well at these one-of-a-kind resources. Improvements were recently completed at the Honda Ridge rock art site to enable easier and safer visitation by Tribal Elders, including trail clearing and widening, improving two resting benches along the path, and constructing steps and a ramp up to the viewing platform. The guest register installed



*In FY 2008 VAFB completed refurbishment of a rock art viewing platform for easier and safer visitation by Chumash Tribal Elders and the many visitors to Honda Ridge rock art site. Following consultation with the Tribe, upgrades were completed to the platform, enhancing the setting of this sacred site. A guest register, interpretive panel, and pamphlet dispenser at the trailhead help foster respectful visitation by the public.*

at the trailhead and dispensers for pamphlets about the rock art and plants used by Native Americans continue to promote responsible visitation to this site.

Cultural resources managers also attained compliance with the Native American Graves Protection and Repatriation Act (NAGPRA) through repatriation of Native American human remains from VAFB archaeological collections to the Santa Ynez Band of Chumash Indians. Staff carefully coordinated two repatriation ceremonies on behalf of the Chumash.

## **CURATION**

Archaeological collections from VAFB are curated at the federally certified repository at the University of California at Santa Barbara through a recently renewed curation agreement. This location was selected in consultation with the Santa Ynez Band of Chumash Indians. Recent periodic inspections of the repository and VAFB collections were performed in compliance with NAGPRA and human remains were identified in multiple separate accessions. These human remains were analyzed, digitally scanned in three dimensions to provide a permanent record for future anthropological research, de-accessioned, and recently repatriated to the Chumash Indians.

During the recent inspections, Vandenberg discovered unanalyzed shell remains and unprocessed soil column samples in several accessions. An improved discard policy was developed for these items to free up much-needed space at the repository. Through consultation with the Chumash, the base arranged to have unanalyzed shell from both the repository and current investigations delivered to the Chumash for ceremonial use.

## **CULTURAL RESOURCES AWARENESS AND EDUCATION**

Recognizing historic preservation is conducted in the public interest, Vandenberg developed numerous publications and other interpretive materials to provide to military personnel, base civilians, Native Americans, professional archaeologists, students, and anyone else who visits the base. These materials include historical and archaeological monographs, portable exhibits, interpretive displays, and myriad pamphlets on topics ranging from rock art to rockets. Monographs are available for purchase through the local museum, historical society, and archaeological society. Pamphlets are available free of charge at selected rock art sites and the cultural resources offices, and are handed out during tours, Earth Day, and other events. Tours of rock art and archaeological sites are provided many times each year





to school children, visiting dignitaries, museum members, and professional organizations.

An event that is held on an annual basis is Cultural Heritage Awareness Day, where base personnel are introduced to Chumash history and culture, including traditional food, song, dance, and craftwork (along with several other cultures represented at Vandenberg). By sharing their heritage and culture with base personnel, this event raises awareness that Vandenberg is situated on the ancestral lands of the Chumash Indians, and that a vibrant and creative Chumash culture thrives in a neighboring community.

## COMMUNITY RELATIONS

Public outreach and fostering good community relations go hand-in-hand for the Vandenberg cultural resources staff. One excellent example was National Public Lands Day at the former U.S. Coast Guard Rescue Station (a.k.a., “The Boathouse”) in September 2007. Vandenberg was selected from 49 applicants under this DOD Legacy Program. The \$4K grant was used to host more than 75 local community and base personnel at this historic site, who volunteered to paint, do minor carpentry, and general clean-up while getting a rare opportunity to tour the building with the base architectural historian and simply enjoy some fresh ocean air and sunshine. The event was attended by senior leadership, and the 30th Space Wing Commander provided an opening dedication, emphasizing the importance of historic preservation.



*30th Space Wing Commander, Colonel Steve Tanous addresses a crowd of volunteers during a September 2007 National Public Lands Day event held at the scenic Coast Guard rescue station, the ‘Boathouse’, located on south base. More than 75 volunteers dedicated time and talent to cleanup and minor aesthetic repairs while learning the importance of historic preservation. The event was made possible by a DoD Legacy Program grant.*

Perhaps the most unique link forged with the community by the cultural resources section followed the discovery of an exposed fossil along the coast. Cultural resources staff assisted paleontologists from the Natural History Museum of Los Angeles County with removal of an intact fossil from shale bedrock and transportation to the museum. Preliminary analysis suggests the fossil is a juvenile specimen of a new species of Miocene dolphin dating to roughly 12 million years ago. Vandenberg retained ownership of the fossil, but loans it to the museum for academic research. Two resin casts of the fossil were prepared by the museum, one for display at Vandenberg and one for public display at the museum in the neighboring town of Lompoc.

Active membership in professional societies, such as the Society for California Archaeology, and presenting papers at annual meetings is another means of promoting good relations and academic collegiality. Additionally, two members of the cultural resources staff teach anthropology courses at the local community college. One member is on the board of the local historical society, and another is on the board of the local archaeological society.



*An interpretive display was installed at the Boathouse on National Public Lands Day in September 2007. Designed completely in-house, the display describes the history of the Coast Guard rescue station that operated from 1936-1941. Today, visitors to the Boathouse can learn about the history of the structure and the 1982 modifications to the area to support West Coast Space Shuttle operations.*





Cultural resources manager Beth McWaters-Bjorkman expresses her delight after excavating and preparing for transport a complete Miocene dolphin fossil. This emergency excavation to save the rare paleontological discovery from an intensive erosion environment was completed in two days. The fossil is now available for study at the Natural History Museum of Los Angeles County.

through the fabric resulting in a double benefit: the creation of habitat for an endangered butterfly and more effective site stabilization from the plants' root system holding the fabric and soil in place.



Not your typical Section 110 management practice: stabilizing 9,000 year old shell midden using bio-degradable erosion control fabric. Native wind-tolerant plants were added to the fabric to trap wind blown sand. One year later, much of the fabric is buried by sand, and new plants are naturally establishing.

### ENVIRONMENTAL ENHANCEMENT

Archaeological investigations supporting the privatization of military family housing on Vandenberg discovered one National Register eligible prehistoric archaeological site in a location where several homes were planned for construction. By working with the project proponent, cultural resources staff developed creative mitigation measures combining a strategy of avoiding all construction at the site with installing a small park featuring drought-tolerant native plants used by the Chumash and interpretive displays about traditional uses of these plants.

Managing more than 1,800 prehistoric, historical, and architectural resources on an installation that includes 15 endangered species of plants and animals can be challenging. Efforts by the natural resources staff to enhance 434 acres of prime Western Snowy Plover habitat by removing three highly aggressive invasive plant species had the potential to damage 14 archaeological sites and one National Historic Landmark. By collaborating, methods evolved from using bulldozers to flatten sand dunes to employing a controlled burn, courtesy of the Vandenberg Hot Shots Fire Crew, and allowing the wind to naturally flatten the sand mounds that had been created by the invasive vegetation.

Cultural and natural resources personnel also collaborated during recent efforts to stabilize archaeological sites along the coastline where heavy winds created blow-outs. Bio-degradable erosion control fabric was installed in these blow-outs, and then native wind-adapted plants were planted

### MISSION ENHANCEMENT

Two recent massive efforts to upgrade mission critical communication and information transfer infrastructure ran across remote, pristine landscapes on base. The \$27M Combat Information Transmission System project installed fiber-optic cable across 97 miles of the base and through 75 archaeological sites. The cultural resources section worked with project engineers to develop avoidance measures for all 75 sites, including re-routes and directional boring under sites, saving more than \$2M in National Register eligibility excavations and shaving more than two years off the project schedule.

Redundant communications capabilities were required between key launch facilities on north base to support Missile Defense Agency development and testing projects. The Diverse Communications Project installed approximately six miles of communications cable through eight archaeological sites. Employing similar measures, the project was able to avoid all eight sites using re-routes or directional boring, saving more than \$500K in National Register eligibility excavations and accelerating project schedule milestones by six months.





Firebreaks run for more than 200 miles along the base perimeter, and require annual maintenance after winter rains. Bisecting more than 60 archaeological sites, cultural resources staff developed appropriate firebreak maintenance practices for each site and plans for full site evaluations. Last summer, Vandenberg hosted the University of California at Davis archaeological field school, directed by two doctoral students collecting data for their dissertations. The six-week long field school evaluated two large sites along the firebreak, providing 22 undergraduate students in archaeology with valuable educational experience, and providing Vandenberg with a savings of more than \$150K in archaeological services.

Following the fires in Santa Barbara last year, the US Forest Service contacted Vandenberg AFB requesting assistance from a specific staff archaeologist experienced in Burned Area Emergency Response (BAER). Vandenberg immediately responded by providing the professional services of this individual who subsequently spent two weeks surveying the fire-damaged area, resulting in a BAER assessment that quantified \$23K for emergency stabilization and rehabilitation efforts.

### **CULTURAL RESOURCES COMPLIANCE**

In 2008, cultural resources managers were key players in the successful execution of an enormous in-house Civil Engineering construction project displacing 52,000 cubic yards of soil for protection of a mission-critical road. The \$3.7M San Antonio Creek's Stream Restoration and Erosion control project impacted a multi-layered archaeological site with a 9,000 year-old component located 19 feet below ground surface. Innovative data recovery efforts were coordinated with the project construction schedule, realizing \$400K in heavy equipment cost savings. Project execution was made possible only through intense management involving daily interaction with the project proponents, engineers and contracting staff, and most importantly with the external stakeholders, the Chumash Indians and the SHPO. Working closely with the Chumash and the SHPO, cultural resources managers wrote and negotiated a complex Memorandum of Agreement (MOA) in less than six weeks, ensuring short-fuse project milestones could be satisfied. The ensuing five-week archaeological excavation was closely managed by the cultural resources team leader resulting in completion of all MOA requirements, adherence to the engineer's project schedule, and the recovery of the oldest and most deeply-buried archaeological deposits ever excavated on VAFB.

Lastly, anticipating the possibility NAGPRA-regulated objects might be encountered during data recovery for the San Antonio Creek erosion control project, Vandenberg consulted the Tribe and crafted a NAGPRA Written Plan of Action defining the steps that would be taken in the event NAGPRA objects were recovered.



*Archaeologists at work at the \$3.7M San Antonio Creek Stream Restoration and Erosion Control Project. An innovative subsurface survey obtaining soil cores helped Vandenberg identify multiple layers of well-preserved, deeply buried archaeological deposits, some older than 9,000 years before present. Coordinating data recovery with project construction enabled Vandenberg to save \$400K in heavy machinery support costs.*

### **CONCLUSION**

Vandenberg Air Force Base protects and preserves an incredible inventory of prehistoric and historical archaeological sites, historic buildings and structures, and other cultural resource assets through diligent ICRMP implementation that ensures the base's ability to execute space and missile launch mission requirements. Innovative approaches to site preservation and cultural resource compliance resulted in remarkable cost avoidance and accelerated project schedules. Stakeholder involvement is a program cornerstone and marked by positive relationships with the SHPO, an outstanding Native American consultation program, and close coordination with project proponents. Local community interest is high and fostered by a robust public outreach program. These accomplishments demonstrate why Vandenberg Air Force Base was recognized for the most outstanding Cultural Resources Management program in the United States Air Force for FY 2008