Paleoenvironmental Research, Climate Modeling, and At-Risk Archaeological Site Monitoring at Tyndall Air Force Base

By Kendra Kennedy, Mark Grippo, William Pringle, Katherine Szoldatits, and Andrew Orr; Environmental Science Division; Argonne National Laboratory

As the effects of climate change continue to unfold—with more frequent and intense storms, alterations in weather patterns, rising sea levels, and more—many Federal agencies are preparing for how climate change will impact their resources, mandates, and responsibilities, including those relating to cultural resources. Argonne National Laboratory (Argonne) is assisting the U.S. Department of the Air Force (DAF) with these efforts, particularly in coastal areas that are experiencing the effects of sea-level rise.

Tyndall Air Force Base (AFB) is located on the Gulf of Mexico, just south of Panama City in Bay County, Florida. The installation, which contains hundreds of known archaeological sites, suffered extensive damage from Hurricane Michael, a Category 5 storm that hit the Florida Panhandle in October 2018. Although planning efforts were already underway to address known coastal issues (Figure 1), the ravages of Hurricane Michael spurred intensified interest in strategic planning for future impacts of climate change.

Prior to the hurricane, Argonne’s Sociocultural Systems Department, part of the Environmental Science Division (EVS), through funding by the Air Force Civil Engineer Center (AFCEC), began developing a coastal erosion control plan for Tyndall AFB, including management recommendations for protecting vulnerable archaeological sites and completing a paleoenvironmental study to identify submerged areas likely to contain archaeological sites.

Following Hurricane Michael, Argonne supported Tyndall AFB and AFCEC in revising the scope of the projects to include (1) the previously planned paleoenvironmental study, (2) a new coastal risk modeling and analysis effort, and (3) a monitoring plan revised to specifically target archaeological sites at greater risk of impacts from climate change.

The paleoenvironmental study, which centered on submerged areas bordering Tyndall AFB, identified potential locations of submerged archaeological sites, such as landforms that would have been conducive to habitation and use by past peoples...
before the areas became inundated as a result of prehistoric sea-level rise (i.e., relic river channels and shorelines), as well as submerged historic cultural resources (i.e., shipwrecks). The coastal risk modeling and analysis used geospatial analysis to model sea-level rise, storm surge inundation, and shoreline erosion for 2025, 2050, and 2100 using various storm and emissions scenarios (Figures 2 and 3).

Argonne created geospatial datasets to show the extent of future coastal flooding and erosion, from best-case to worst-case scenarios. Using these projections, Argonne identified known archaeological sites along Tyndall AFB’s coastlines that are most at-risk from climate change-induced impacts. Finally, the data gathered from the first two aspects of the project enabled creation of a targeted monitoring plan for archaeological sites and areas with a high probability to contain archaeological sites, ranked according to likelihood of impacts from future coastal erosion, inundation, and sea-level rise.

The three-part approach of this project provided Tyndall AFB with a comprehensive study that enables determination of when and where to allocate resources for monitoring and mitigation or protection of archaeological sites. Protective measures completed at nearby Florida installations include the construction of living shorelines consisting of limestone and/or oyster shell breakwaters and native plantings that stabilize the shoreline and create new habitat for fish and other animals while also reducing erosion that threatens archaeological sites. The study completed by Argonne simplifies identification of at-risk archaeological sites that would benefit from protection against coastal erosion and facilitates climate change planning for years to come. Tyndall AFB and other DAF installations in Florida, having already experienced severe impacts of climate change on cultural resources, are leading the way in creating strategic plans, methods, and solutions for protecting the Nation’s rich cultural heritage from an uncertain climate future.

**Solar Enhanced Use Lease Project at Edwards Air Force Base**

By Cultural Resources Program, 412 CEG/CEVA, Edwards AFB CA

Nearly five years of collaboration among the Air Force, civic stakeholders, and private industry came to fruition last February for a 2,600-acre Solar Enhanced Use Lease (EUL) project at Edwards AFB, California. It is the largest ground-mounted solar array project constructed on an Air Force installation.


Since 2011, Edwards AFB has conducted numerous negotiations with Tribes, the California State Historic Preservation Officer (SHPO), Kern County, and other interested parties with support from Headquarters Air Force, Air Force Materiel Command, the Air Force Civil Engineer Center, and the Air Force Legal Operations Agency.

The Air Force evaluated 6,000 acres of Edwards AFB’s northwest corner to identify 4,000 acres appropriate to lease for solar development, which ultimately included an area of 2,519 acres.

Within the project Area of Potential Effect (APE) is the Bissell Basin Archaeological District (BBAD) that includes 151 eligible or contributing prehistoric archaeological sites, two historic homesteads, and 71 additional non-eligible sites. To resolve adverse effects to eligible resources, the Edwards AFB Cultural Resource Manager coordinated with the Tribes, SHPO, Advisory Council on Historic Preservation (ACHP), and project managers to prepare and implement an MOA with attached HPTP. The HPTP excluded, avoided, and preserved 14 sites from data recovery.

Before the project, Edwards AFB established government-to-government relationships with four Federally recognized Tribes. In 2011, the base commander initiated Section 106 consultation with 14 Federally recognized Tribes. The 14
Tribes included 4 Tribes that Edwards previously established relationships with as well as 10 Tribes that Kern County traditionally consulted. In 2017, the Air Force invited the Tribes to participate in the establishment of a PA. The Tejon Indian Tribe and the San Manuel Band of Mission Indians accepted the invitation to consult on the project. Following the selection of a project developer, the Air Force followed recommendations to pursue an MOA.

Working closely with these Tribes, Edwards AFB established open communications and developed a relationship of trust among signatories. Through continuous coordination and consultation, the MOA and HPTP provided the guidance and requirements for data recovery and other strategies for managing cultural resources mitigation. As field work began, site-specific work plans were initiated for data recovery investigations throughout the APE. The Air Force and Tribes reviewed and agreed to these proposals before implementation. Summary letter reports describing work completed were submitted monthly and as required. The Tribes, Edwards AFB, and the SHPO were all allowed time to comment before the work in each report was considered complete.

The data recovery project for the EUL presented substantial challenges. Construction activities for the solar farm were taking place while data recovery was ongoing. This created a unique set of issues for cultural resources and the historic preservation requirements. To prevent undue impacts to the resources, Edwards AFB coordinated weekly meetings with the Tribes and daily meetings with the operators and field work contractors. Tribal monitors and two independent archaeologists provided by Edwards AFB observed all activities.

Archaeological investigations located another 102 new sites, bringing the total site count to 253 sites of differing sizes and complexities within the BBAD and construction footprint. Data recovery work was conducted at 157 of these sites. Some sites were avoided due to changes in construction activities or the development footprint.

Two inadvertent discoveries under NAGPRA were made over a three-year period of fieldwork. The first discovery was made during the installation of desert tortoise fencing. The second discovery was made during the construction of a stormwater basin. Both discoveries were reburied, in accordance with the NAGPRA Plan of Action, resulting in construction workarounds and permanent restriction of access to the burial sites.

The greatest benefit of this project was the installation’s increased and open communication with Tribal partners in addition to protection of resources, where possible, and retrieval of the most information about the sites subject to impacts.

With a project of this size, complexity, and number of stakeholders, there are typically going to be unexpected issues to address. By following the MOA/HPTP and by coordinating with consulting parties, this project successfully limited impacts to cultural resources.


By Jayne Aaron, Environmental Planner and Architectural Historian, EA Engineering, Science, and Technology, Inc.

Climate change poses great challenges for cultural resources, such as historic buildings and archaeological sites. Cultural resources are vulnerable to climate impacts including fire, inundation, deterioration, and destruction from sea-level rise and storm-related flooding and erosion. In this growing climate crisis, A Guide to Incorporating Climate Considerations into Integrated Cultural Resources Management Plans (Legacy Project CR-20-002) has recommendations for Department of Defense (DoD) cultural resources managers that are twofold.

First, it is recommended to encourage the use of historic buildings to reduce carbon emissions. Approximately 38% of global greenhouse gases are produced by the construction and operation of buildings. In the same way people recycle aluminum
cans, newsprint, and bottles, etc., they can reuse existing buildings whenever possible. The environmental value of reusing historic buildings is far better for the planet than demolition and new construction. As the saying goes, “The greenest building is the one that is already built.”

Second, due to the threats of climate change, it is recommended to prepare historic properties for worsening climate impacts and take steps to make climate resilience a priority. Rising sea levels, extreme weather events, devastating wildfire, and other climate-related issues are impacting historic resources. With sea-level waters rising dramatically over the next century, sea-level rise may endanger coastal military installations around the Nation. Mission-necessary infrastructure may also be damaged by flooding, severe storms, and fire.

Climate change is no longer a distant threat. Its impacts are already occurring, with serious and growing risks to the installations necessary to support the military mission. DoD Directive 4715.21, Climate Change Adaptation and Resilience (2016), requires that all operations, planning activities, business processes, and resource allocation decisions include climate change considerations. The built infrastructure required to support the military mission on DoD installations is extensive, and many of these facilities are historic. The Department’s Cultural Resources Programs are designed to support the military’s combat readiness mission while maintaining the long-term sustainability of its historic properties. Therefore, cultural resource management needs to adapt to the broad range of climate-related changes to protect historic properties.

The DoD Legacy Resource Management Program funded Legacy project CR-20-002 to develop guidance to meet this need. (Disclaimer: This project was funded by the DoD Legacy Resource Management Program. Any findings or recommendations of this report are those of the principal investigator and contributors. This guidance document is a DoD Legacy Program work product and as such does not represent official policy, position, or opinions of the Department of Defense. This report should not be construed as official DoD policy or position unless so designated through other issuances.) The guidance document presents one methodology for considering potential ways to improve resiliency for cultural resources and integrating climate change risks into cultural resources management. Information in the guidance document is presented in two parts.

Part I includes an overview of climate risks to military installations and missions; climate change and cultural resources management requirements; an introduction on climate change and adaptation; sources of adaptation-related information; and a summary of climate and adaptation considerations for individual Integrated Cultural Resources Management Plan (ICRMP) program elements. This guide also presents potential options for integrating these climate adaptation strategies into the ICRMP.

Part II offers a step-by-step method for carrying out the climate adaptation planning process and integrating the outcomes into the ICRMP. The appendices in this guidance document provide additional sources of adaptation-related information and a set of detailed worksheets that support installation-level climate adaptation planning and ICRMP integration.

The guide and its fact sheet are available at:

Legacy CR-20-002, Climate Adaptation Guide for Cultural Resources, Guide:

Legacy CR-20-002 Fact Sheet:
2023 Secretary of Defense Environmental Awards
Adapted from 2023 Secretary of Defense Environmental Awards Materials

Each year since 1962, the Secretary of Defense honors installations, teams, and individuals for outstanding conservation achievements, innovative environmental practices, and partnerships that improve quality of life and promote efficiencies without compromising mission success. This past spring, the 2023 Secretary of Defense Environmental Awards recognized outstanding accomplishments from October 1, 2020, through September 30, 2022. A diverse panel of 54 volunteer judges with relevant expertise from Federal and state agencies, academia, and the private sector evaluated the 2023 award nominees to select one winner for each of the nine categories that cover six subject areas, including Cultural Resources Management (CRM).

Two Environmental Awards given this year were CRM, Small Installation, and CRM, Individual/Team. Through CRM programs, DoD identifies areas likely to contain cultural resources and works to protect these assets for future generations. CRM awards recognize DoD’s stewardship of its extensive cultural resources, including archaeological sites, the historic built environment, and cultural landscapes. Specifically, the awards highlight projects that include partnering with external stakeholders, such as Tribes, SHPOs, local communities, and installation personnel working in master planning, public works, and range management.

CRM, Small Installation Award

The 2023 winner of the CRM, Small Installation Award is the Iowa Army National Guard (IA ARNG). The IA ARNG’s Camp Dodge Joint Maneuver Training Center is the primary training installation for Iowa, made up of around 4,500 acres of land. The Camp Dodge Joint Maneuver Training Center is one of the few active training facilities that pre-dates the First World War. The installation hosts historic structures from the Works Progress Administration (WPA) and Second World War eras that are still in use today. The CRM program’s efforts to preserve the integrity of the historic sites while also ensuring their usefulness in Camp Dodge’s important mission have allowed for continued use of these historic structures.

The IA ARNG’s major accomplishments in fiscal years (FYs) 2021-2022 included:

• The Camp Dodge CRM program restored the WPA-built limestone perimeter fence and gatehouse. The WPA constructed the fence in 1937 using locally sourced limestone. The perimeter fence includes 99 stone pillars and the original gatehouse. The Camp Dodge CRM Program reused stone pieces from the existing fence to help rebuild some of the damaged stone pillars. New grout was specially mixed to have the same look and consistency of the original materials. The CRM program replaced light fixtures on the fence with historic-looking light fixtures that imitated the appearance of gas lights.

• The Camp Dodge CRM program was able to offset part of the cost of repairing the fence by leveraging state funds. Rebuild Iowa Infrastructure Funds gave the CRM program $56,000 of the total $373,000 project costs.

• Camp Dodge displayed innovative thinking in adapting its historic bathing pavilion into modern classroom spaces. Camp Dodge replaced leaking windows with modern windows that were weatherized with wood trim to match the structure’s original historic character after consultation with the SHPO. Camp Dodge is currently replacing the roof but keeping its original, 45-degree-angle design, which will help keep the building cool.

• The Camp Dodge CRM program worked with the SHPO to repair the historic 1940s Herrold Schoolhouse, which was incorporated into the installation during the camp’s expansion during the Second World War. The CRM program repaired the building’s soffits and restored the crumbling façade with a wood-detailed overhang. The schoolhouse is still in use as a location for debriefing training events.

• The Camp Dodge CRM program has secured funds for an internship opportunity with Iowa State University’s archaeology and architecture programs to work with CRM staff directly. Students will complete work-study projects tied to their research and the resources on post.
The 2023 winner of the CRM, Individual/Team Award is the Cultural Resources Office Team, Eglin AFB, Florida. Eglin AFB is home to the 96th Test Wing, which comprises 3,211 military personnel, 2,967 civilians, and 1,916 contractors. The Cultural Resources Office Team supports the warfighter by meeting present compliance responsibilities, planning future activities to minimize cultural resources impacts, and managing those resources responsibly. The team is composed of 12 environmental professionals. The Cultural Resources program goals are outlined in the ICRMP, and they affirm that Eglin AFB will remain in compliance with applicable cultural resources laws and regulations, provide both internal and external opportunities for cultural resources education to the community, and improve Tribal relationships.

The Eglin AFB Cultural Resources Office Team’s major accomplishments in fiscal years (FYs) 2021-2022 included:

- Eglin AFB has the unique challenge of managing the Eglin Gulf Test and Training Range (EGTTR), which comprises nearly 123,000 square miles of airspace over the Gulf of Mexico, an area with a rich maritime history, and known for submerged archaeological sites and historic shipwrecks. To improve EGTTR mission readiness, the Cultural Resources Office Team established partnerships, consultation parameters, and standard operating procedures (SOPs) to assess effects on cultural resources and ensure National Historic Preservation Act (NHPA) compliance. The SOPs saved an estimated $40 million expenditure during an EGTTR fiber-optic cable project.

- In 2021, after years of collaboration with stakeholders, including six Federally recognized Native American Tribes, the Cultural Resources Management Team finalized and established a Programmatic Agreement (PA) among Eglin AFB, the Florida SHPO, and the ACHP regarding the management of historic properties at Eglin AFB. This extremely comprehensive PA improves and streamlines Eglin AFB’s ability to assess cultural resources impacts more effectively and ensure NHPA compliance.

- The Cultural Resources Office Team maintained a robust education and outreach program that brings respect and awareness to cultural resources, recruits community support for stewardship of Eglin AFB’s heritage, and enhances community relations. These efforts educate hundreds of attendees. For example, the Cultural Resources Office Team supports the Thunderbird Intertribal Powwow, including providing an educational display that reaches over 300 students.

- The Cultural Resources Office Team protects archaeological sites from weathering and erosion along the many shorelines within the installation boundary. The team worked with Eglin AFB’s Natural Resources section to execute numerous living shoreline projects during the achievement period, resulting in the protection of 14,000 linear feet of shoreline and 11 archeological sites. These projects focus on immediately halting coastal erosion as well as further developing a long-term solution for this issue.

- The Cultural Resources Office Team has fostered a strong relationship with the Florida SHPO due to continuous communication and a comprehensive PA. Through close consultation with the SHPO, the team cleared the $13 million modernization and upgrade project of a 57,000-square-foot historic aircraft hangar ensuring ongoing and effective use by the Air Force and continuance of the mission.

- The Cultural Resources Office Team sustained an active and strong government-to-government relationship with six Federally recognized Native American Tribes through consultations, regular and open communications, annual meetings, participation in outreach programs, and improvement of the Installation Tribal Relations Plan with better readability and organization.

Congratulations to the award winners!

For more information, please visit: https://www.denix.osd.mil/awards/2023secdef/.
Disguising Solar Panels as Ancient Roman Tiles in Pompeii

Adapted from TechXplore article

Solar panels have been disguised as ancient Roman tiles or terracotta bricks to match the city skyline. The innovative solutions adopted by the archaeological park of Pompeii pave the way for an inspiring model: turning architectural constraints into assets, boosting heritage and sustainability.

“They look exactly like the terracotta tiles used by the Romans, but they produce the electricity that we need to light the frescoes,” says Gabriel Zuchtriegel, Director of the Archaeological Park of Pompeii. This solution is part of a more comprehensive strategy to turn costs into savings opportunities and to embrace sustainable development.

“Pompeii is an ancient city which in some spots is fully preserved. Since we needed an extensive lighting system, we could either keep consuming energy, leaving poles and cables around and disfiguring the landscape, or choose to respect it and save millions of euros.”

Technically called “traditional [photovoltaic] tiles,” the invisible solar panels are made from a polymer compound, which allows the sun’s rays to filter through. The photovoltaic cells are then integrated into it by hand and covered with a layer of the polymer compound to give it the look of stone, wood, concrete, and brick. As a result, such a solution can be installed not only on roofs but also on walls and floors.

Solutions like traditional PV tiles are crucial for matching sustainability with conservation, protection, and enhancement of heritage. “One key aspect is to look at the cultural sites, ancient buildings, and historic cities not as obstacles, but as assets for reducing our carbon emissions,” says Francesca Giliberto, an architect specializing in conservation and management and a postdoctoral researcher at the University of Leeds.

The effectiveness of such an approach is proven by the successful experience of Pompeii. “The invisible photovoltaic not only helps us cut the energy bills but it also makes our archaeological park more enjoyable. This is therefore just the beginning. From now on, we will be taking this solution into account for all future renovation and restoration projects,” says Zuchtriegel.

To read the original article, please visit: https://techxplore.com/news/2022-12-disguising-solar-panels-ancient-roman.html.

New Open-Access Journal Issue Devoted to Refining Archaeological Data Collection & Management

By Michael Heilen, Director, Statistical Research, Inc., and Shelby Manney, Deputy Environmental Program Manager, Arizona Army National Guard

DoD envisions data as strategic assets needed by operators and military decision makers to enhance operations and capitalize on the full value of DoD investments and capabilities. Indeed, to be mission-ready and ensure national security, DoD increasingly relies on diverse digital data. Yet, like many agencies and organizations today, DoD has lacked the enterprise data management capabilities necessary to ensure that trusted, understandable data are visible, securely available, linked, and useable in real time for those that need them, and when they are needed. In September 2020, DoD released a data strategy to help transform the Department into a data-centric enterprise with a modernized approach to collecting, managing, and governing DoD data. This DoD Data Strategy provides the vision, guiding principles, essential capabilities, goals, and objectives necessary to transform DoD into an organization driven by data.

Along with natural resources, facilities management, and other operational data, cultural resources data are routinely needed by DoD personnel and DoD partners for situational awareness and rapid decision-making. Yet, across the United States and globally, countless cultural resource data
sources remain siloed and difficult to find, let alone access, integrate, understand, and reuse in a reliable and efficient manner. DoD is not alone in this regard. Many government agencies struggle with managing and leveraging cultural resource data, even though those data are needed to fulfill their legal compliance and stewardship responsibilities, as well as to support long-term planning efforts aimed at mitigating the effects of climate change, encroachment, and other pressing challenges.

In a recent issue of *Advances in Archaeological Practice* devoted to the topic of “Refining Archaeological Data Collection and Management,” Michael Heilen and Shelby Manney explore the scope and scale of what they refer to as “archaeology’s data problem.” This special issue—sponsored by the Arizona Army National Guard and published entirely in Gold Open Access by the Society for American Archaeology and Cambridge University Press—addresses many questions and concerns involving data practices and workflows that need to be confronted in addressing archaeology’s data problem. Are the right kinds of data being collected? For which constituencies are the data useful (or not useful) and how can the quality, utility, and durability of archaeological data be improved? What ethical concerns surround the collection and management of archaeological data, and how do data practices protect or harm the interests of Indigenous peoples, descendant communities, and other stakeholders? How should sensitive data be stored, accessed, shared, and governed, both now and in the future?

Next steps for implementing the DoD Data Strategy require the development of measurable Implementation Plans that are unified across DoD by common performance measures and lexicons. Necessarily, enhancing the visibility, access, interoperability, and utility of cultural resource data will be important to strategy implementation. Fortunately, with today’s emerging data management methods and technologies, archaeology’s data problem can be mitigated and surmounted. Many of the insights and recommendations provided by the authors of articles in the special issue strongly align with the DoD Data Strategy and suggest pathways critical to helping DoD achieve its data-driven vision, goals, and objectives. As such, it is well worth a look. Click the links below for free and immediate access.

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**Advances in Archaeological Practice Vol. 11, No. 1**

Refining Archaeological Data Collection & Management

Guest edited by Michael Heilen and Shelby Manney

- Heilen, Michael, and Shelby A. Manney (2023). [Refining Archaeological Data Collection and Management](https://doi.org/10.1017/aap.2022.41)
- Gupta, Neha, Andrew Martindale, Kisha Supernant, and Michael Elvidge (2023). [The CARE Principles and the Reuse, Sharing, and Curation of Indigenous Data in Canadian Archaeology](https://doi.org/10.1017/aap.2022.33)
- Klehm, Carla (2023). [The Use and Challenges of Spatial Data in Archaeology](https://doi.org/10.1017/aap.2022.38)
Digitally Enabled Discovery: Introducing CultureConnect, a Digital Platform to Drive Patron Engagement, Learning, and Organizational Reach

By Molly Bompane, U.S. Army Heritage and Education Center, Curator and Exhibits Branch Chief

The U.S. Army Heritage and Education Center's Digital Future: Building Capacity with New Technologies

Over the years, the U.S. Army Heritage and Education Center (USAHEC) has undergone a modernization effort. USAHEC aligned its vision with the U.S. Army War College’s (USAWC) objectives and reevaluated its role within the archives, museum, and history worlds. USAHEC sees a future where user activity takes place in a highly decentralized virtual environment. Therefore, USAHEC must:

- Understand and anticipate the evolving needs of its users.
- Elevate digital experiences to improve services and online assistance.
- Develop and use digitized resources to create different products for all audiences.
- Connect with and deliver virtual exhibits, programs, and collections to a global audience.

USAHEC needed a space between its website and digital collections to curate digital content. As a result, USAHEC acquired the CultureConnect platform.

Why CultureConnect?

CultureConnect helps develop cultural content to engage with audiences online. CultureConnect supports multimedia from audio, video, and image zooming to three-dimensional objects and animations. Through the platform, USAHEC can create content and publish it anywhere, across the web, through mobile applications, in galleries, on kiosks, on touch screens, and in social media. USAHEC can engage its audiences at its museum, at their homes or workplaces, or on the go—all from the USAHEC website.

CultureConnect: What Can It Do—and What Can USAHEC Do?

Starting last fall, USAHEC’s team learned about the CultureConnect platform, which is designed for non-technical staff. Through CultureConnect, USAHEC can create a rich virtual presence. The interface is fully customizable, and the platform includes a variety of layouts and design controls that enable staff to develop new digital products.

The CultureConnect platform and product suite includes:

- Online exhibitions
- Mobile guides
- Advanced gallery interactives
- Digital labels
- Group and individual tours
- Virtual programming
- Distance learning
- Scavenger hunts and games
- Visitor/Patron surveys

The Minister of Defence of Northern Macedonia, Slavjanka Petrovska, explores USAHEC’s Desert Storm online exhibition with staff members during a visit in July 2022. Source: USAHEC
What Has USAHEC Created?

Online Exhibitions

USAHEC aims to translate existing exhibits into a digital environment. By developing online exhibits, USAHEC is not only preserving them but has found that these exhibits can evolve online. An online exhibit can explore content to a greater degree and allow for deeper engagement with users. USAHEC’s online exhibitions currently include This Will Not Stand: The U.S Army’s Road to Victory in the Persian Gulf War; Where in the Hell Is Korea? Warfare in the Land of Sorrow; The Army Heritage Trail; and Carved in Stone, Cast in Bronze: Commemorative Sculpture of the Civil War Era.

Mobile Guides and Wayfinding

Through mobile guides, visitors can experience content throughout USAHEC’s campus on their personal devices. After scanning a QR code or downloading USAHEC’s application, visitors can access enhanced content. Wayfinding includes global positioning system and interactive maps and modules. Additional interactive tools under development are scavenger hunts and games, hotspots, emoji responses, and image galleries for voting, quizzes, and content ratings. Interactive elements immerse visitors in an experience that rewards their exploration, such as through the USAHEC’s Army Heritage Trail mobile guide.

In-Gallery Interactives

In-gallery interactives enhance content in USAHEC’s galleries. Through animated touchpoints like hot spots and digital labels, USAHEC can incorporate rich-media content. For example, by scanning a QR code under the famous painting of Medal of Honor Recipient Calvin P. Titus scaling the wall during the Peking Rebellion, visitors can hear him discuss the event.

The Path Forward

As USAHEC’s CultureConnect team develops more digital tools, USAHEC realizes its digital future lies not only in disseminating digital products and services but in sharing this new skill set. As USAHEC shares this digital infrastructure across the Army, USAHEC will empower other Army entities to follow suit. USAHEC is currently working with the 10th Mountain Division and Letterkenny Army Depot to develop prototypes of this concept.

USAHEC will also test different ways to enhance the USAWC’s curriculum and virtual programming and distance learning, including live lectures and virtual events. The team will also test the platform’s tour capacity. Using CultureConnect, tour guides can lead group tours and communicate with attendees through a handheld device.

USAHEC is focused on fostering scholarship and research about the U.S. Army. Digitally enabled operations are the future, and for USAHEC, as a steward of the Army’s heritage, implementing digital development tools like CultureConnect is key.

To see the complete offerings in CultureConnect, visit the landing page at: https://usahec.usa.yourcultureconnect.com/
Indigenous Knowledge and Why It Matters: Integrating Ancestral Wisdom and Approaches into Federal Decision Making

Adapted from White House Press Release

The White House Office of Science and Technology Policy (OSTP) and Council on Environmental Quality (CEQ) released the first-ever Guidance for Federal Departments and Agencies on Indigenous Knowledge. The guidance, and accompanying implementation memorandum, recognized that to make the best scientific and policy decisions possible, the Federal government should value and, as appropriate, respectfully include Indigenous Knowledge.

The release of this Guidance is important because respectful inclusion of Indigenous Knowledge at all levels within the Federal government can result in decisions that are based on a more holistic and comprehensive understanding of the world.

What Is Indigenous Knowledge?

As the Guidance details, Indigenous Knowledge—also referred to as Traditional Knowledge or Traditional Ecological Knowledge—is a body of observations, oral and written knowledge, innovations, practices, and beliefs that promote sustainability and the responsible stewardship of cultural and natural resources through relationships between humans and their landscapes. Indigenous Knowledge cannot be separated from the people inextricably connected to that knowledge. It applies to phenomena across biological, physical, social, cultural, and spiritual systems. Indigenous Peoples have developed their knowledge systems over millennia and continue to do so based on evidence acquired through direct contact with the environment, long-term experiences, extensive observations, lessons, and skills.

This familial intimacy with nature enables the ability to detect often subtle micro-changes and to base decisions on deep understanding of patterns and processes of change in the natural world of which people are a part. The information and summative historical and cultural ecology contained within Indigenous languages, practices, values, place names, songs, and stories hold data and knowledge that are relevant today.

For example, it is estimated that, currently, at the global scale, Indigenous Peoples—and longstanding, place-based communities—manage over 24% of land, which contains ~40% of all ecologically intact landscapes and protected areas left on the planet, and a staggering ~80% of the world's biodiversity. In short, evidence suggests that the most intact ecosystems on the planet rest in the hands of people who have remained close to nature. Indigenous Knowledge is not just applicable to land and water use; it is relevant to all human systems.

Why Now?

When more forms of evidence are considered, better decision making results. Recognition and inclusion of Indigenous Knowledge in Federal decision making benefit everyone.

Looking to the Future

With the Guidance for Federal departments and agencies on Indigenous Knowledge now issued, OSTP and CEQ will work with agencies to ensure that the Guidance is meaningfully implemented into Federal decision making. Building on the collaboration of an interagency working group of more than 25 agencies that developed the Guidance, OSTP, with CEQ, is establishing a National Science and Technology Council Subcommittee on Indigenous Knowledge to provide a mechanism for agencies to focus on Guidance implementation. The Guidance is intended to include and benefit all Indigenous Peoples, not only Federally recognized Tribes and Peoples. It will also aid Federal agencies in their ability to bring forward Indigenous Knowledge for the benefit of all Americans. The Guidance is one step toward successfully elevating Indigenous Knowledge as a common practice.

To read the full article, please visit: https://www.whitehouse.gov/ostp/news-updates/2022/12/02/what-is-indigenous-knowledge-and-why-does-it-matter-integrating-ancestral-wisdom-and-approaches-into-federal-decision-making/.
**The Department of the Interior Strengthens Tribal Consultation Policies and Procedures**

Adapted from U.S. Department of the Interior Press Release

The Department of the Interior (DOI) announced in December 2022 new policies and procedures to strengthen and fulfill the Federal government’s responsibility to ensure regular and meaningful consultation with American Indian and Alaska Native Tribes, as well as a second policy for consultation with Alaska Native Claims Settlement Act (ANCSA) Corporations.

The Office of the Assistant Secretary for Indian Affairs consulted with Indian Tribes and ANCSA Corporations to gather feedback from Tribal leaders and ANCSA Corporation representatives on the new policies and procedures.

**The Tribal consultation policy and procedures seek to, among other things:**

- Bolster DOI’s consultation policy to encourage early, interactive, pre-decisional, informative, and transparent consultation.
- Establish a model for seeking consensus.
- Require that DOI staff undergo training before participating in consultation.
- Codify the Secretary’s Tribal Advisory Committee (STAC).
- Prioritize Departmental statutory or regulation waivers when in the best interest of Tribes.
- Clarify that the DOI’s decision makers must invite Tribes to engage in consultation.
- Require a record of consultation.

**The Alaska Native Corporation Consultation policy and procedures seek to, among other things:**

- Outline the requirements for consultation between ANCSA Corporation officials and DOI officials.
- Clarify that the Departmental Manual chapter applies to all DOI bureaus and offices.
- Identify the responsibilities of the DOI bureaus and offices in the consultation process.
- Establish an ANCSA Corporation consultation annual report for DOI bureaus and offices.

DOI’s new policies help further the policy goals and intent of President Biden’s “Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships,” which outlines the Administration’s efforts to engage Indigenous communities early and often in Federal decision making.

To read the full article, please visit: [https://doi.gov/pressreleases/interior-department-strengthens-tribal-consultation-policies-and-procedures](https://doi.gov/pressreleases/interior-department-strengthens-tribal-consultation-policies-and-procedures).

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**Pentagon Native American Heritage Month Celebration**

Adapted from Native News Online article

The Pentagon hosted a historic celebration on November 10, 2002, in recognition of Native American Heritage Month.

The celebration was the first of its kind and included a presentation of an eagle staff and military colors by the Kiowa Black Leggings Warrior Society from Oklahoma, dance performances, and presentations by speakers from various branches of the U.S. military.

“Native people have been serving in the military since before we were citizens,” U.S. Air Force Lieutenant Colonel Maureen Trujillo, also an enrolled citizen of the Cochiti Pueblo, said during the celebration. “As of 2020, just over 20,000 of...
the active-duty force is American Indian or Alaskan Native and approximately 140,000 American Indians call themselves veterans today.”

The event was organized to pay tribute to the service of American Indian veterans throughout American history.

Hundreds of people gathered in the courtyard of the Pentagon for the celebration rich with traditional American Indian culture, including an opening prayer by Pechanga Band of Indians Tribal Chairman Mark Morocco; traditional drum groups, including the Uptown Singerz; and a group of singers from the Cochiti Pueblo.

Speakers at the event included American Indian veterans and Native and non-Native DoD officials.

“We were able to break the Japanese and German codes, but no one has ever been able to break ours,” Deputy Assistant Secretary of Defense, Environment and Energy Resilience Richard Kidd said to Thursday’s crowd. “As a result, this administration is investing millions of dollars into Indigenous language preservation.”

After the presentations concluded, a round dance was announced by Meskwaki and Navajo Nation traditional dancer Larry Yazzie. Then, local drum group the Uptown Singerz sang a series of songs while people visited, smiled, and took photos of the historic celebration at the Pentagon.

Former Pentagon Force Protection Agency Senior Advisor and Blackfeet Nation citizen Dr. Walter Lamar commented on the occasion’s significance.

“It was a dream to one day hear the sounds of American Indian drums and singing in the hallways of the largest military building in the world,” Lamar said during Thursday’s event.

To read the original article, please visit: https://nativenewsonline.net/currents/pentagon-hosts-historic-native-american-heritage-month-celebration.
UPCOMING EVENTS, CONFERENCES, WORKSHOPS, AND TRAINING

Advisory Council on Historic Preservation (ACHP): Section 106 Agreements Seminar
Sacramento, CA; July 13, 2023
Online; September 14, 2023
This is a four-hour, single-session course that builds skills in managing consultation and documenting agreed-upon steps to resolve adverse effects in a Section 106 review of a Federal undertaking. The seminar is designed for cultural resources, environmental, and legal practitioners who are fluent in Section 106 implementing regulations and the review process. For more information, please visit: https://www.achp.gov/training/classroom/section-106-agreements-seminar-digital-and-person-classroom-course.

ACHP: Section 106 Essentials
Online; September 12-13, 2023
This is an eight-hour course for anyone interested in an overview of the Section 106 review process. It focuses on applying the vocabulary and principles of the Section 106 review process in real-world scenarios. For more information, please visit: https://www.achp.gov/training/classroom/section-106-essentials-digital-and-person-classroom-course.

ACHP: Section 106 Practitioners Workshop
Washington, DC; August 8-9, 2023
This is a 16-hour classroom course, presented in 2, 8-hour sessions, in which participants explore best practices and build skills in the application of the Section 106 review process to Federal undertakings. The course is well-suited to individuals who participate in Section 106 reviews on a routine basis and need to further develop or maintain fluency in the vocabulary and concepts of Section 106 review in complex situations. For more information, please visit: https://www.achp.gov/training/classroom/section-106-practitioners-workshop-person-classroom-course.

PROGRAM UPDATES AND ANNOUNCEMENTS

2022 White House Tribal Nations Summit
The 2022 White House Tribal Nations Summit, hosted at the Department of the Interior on November 30-December 1, 2022, provided an opportunity for Administration and Tribal leaders to discuss ways the Federal government can invest in and strengthen nation-to-nation relationships as well as ensure that progress in Indian Country endures for years to come. Full video of the Summit is available at: https://doi.gov/blog/2022-white-house-tribal-nations-summit.

Safeguard Tribal Objects of Patrimony Act
Passed in December 2022, this act prohibits the exportation of Native American cultural items and archaeological resources that were illegally obtained; provides for the return of such items, including voluntary returns; and establishes and increases related criminal penalties. The act makes it a Federal crime to export, attempt to export, or otherwise transport from the United States Native American cultural items and archaeological resources without obtaining an export certification; requires the Department of the Interior and the Department of State to each designate a liaison to facilitate and hold trainings and workshops on the voluntary return of human remains and cultural items; and increases the maximum criminal penalties for violating NAGPRA. To learn more, the act is available at: https://www.congress.gov/bill/117th-congress/house-bill/2930?q=%7B%22search%22%3A%5B%22Safe-guard+Tribal+Objects+of+Patrimony+Act%22%5D%7D&s=1&r=1.

National Native American Veterans Memorial
The National Native American Veterans Memorial opened on November 11, 2020, on the grounds of the National Museum of the American Indian in Washington, DC. The memorial was dedicated with a procession and ceremony on the National Mall on November 11, 2022. This tribute to Native heroes recognizes for the first time on a national scale the enduring and distinguished service of Native Americans in every branch of the U.S. military. To learn more, visit: https://americanindian.si.edu/visit/washington/nnavm.
DoD Cultural Resources Program
The Department's cultural resources are the Nation's heritage, and DoD holds these assets in trust for all Americans. As stewards of the Nation's largest inventory of Federally managed historic properties, DoD maintains, promotes, and interprets the cultural resources it manages, both to support the defense mission and to preserve America's military heritage for future generations. The Cultural Resources Program is managed by DoD's Deputy Federal Preservation Officer, responsible for policy, governance, and oversight of DoD's cultural resources management and stewardship.

DoD Native American Affairs Program
DoD’s Native American Affairs Program is managed by the Senior Advisor and Liaison for Native American Affairs (SALNAA). The SALNAA is responsible for developing and implementing DoD’s American Indian, Alaska Native, and Native Hawaiian consultant policies; managing the DoD Native American Lands Environmental Mitigation Program (NALEMP); advising DoD on matters relating to Native Americans and Native Hawaiian organizations; managing DoD outreach activities to Tribal governments on behalf of the Office of the Secretary of Defense; and facilitating Tribal Nations’ contact with DoD offices on matters of concern.

Native American Lands Environmental Mitigation Program (NALEMP)
DoD NALEMP addresses environmental impacts on Indian lands and Alaska Native Claims Settlement Act-conveyed properties from former DoD activities with maximum Tribal participation, through government-to-government consultation.

Secretary of Defense Environmental Awards Program
The Secretary of Defense Environmental Awards celebrate Military Service members and civilians for their exceptional commitment to protecting human health and the environment while advancing the military mission. The Awards honor installations, teams, and individuals for outstanding conservation achievements, innovative environmental practices, and partnerships that improve quality of life and promote efficiencies without compromising mission success.

U.S. Army Corps of Engineers Mandatory Center of Expertise for the Curation of Management of Archaeological Collections (USACE MCX-CMAC)
The USACE MCX-CMAC maintains state-of-the-art technical expertise in the curation of archaeological collections and collections management.

USACE Tribal Nations Technical Center of Expertise (TNTCX)
The TNTCX is USACE’s technical lead and advisory center on matters of importance to fulfilling the Federal Trust responsibility to Tribal Nations. The TNTCX offers services and deliverables on a reimbursable basis to Tribal Liaisons, project managers, and cultural resources staff at USACE Districts, DoD installations, and other Federal agencies.

USACE Technical Center of Expertise (TCX) for the Preservation of Historic Buildings and Structures
The TCX is USACE’s technical lead and advisory center on matters of the historic built environment falling within the agency’s responsibility under the NHPA. The TCX offers services and deliverables on a reimbursable basis to project managers and cultural resources staff at USACE Districts, DoD installations, and other Federal agencies.

Engineer Research and Development Center-Construction Engineering Research Laboratory (ERDC-CERL) Cultural Resources Management Team
The Cultural Resources Management Team is a component of the ERDC-CERL’s Land and Heritage Conservation Branch and partners with DoD organizations, individual installations, and other Federal agencies to provide both practical compliance and methodological research.

Veterans Curation Program (VCP)
The VCP is a five-month program in the flagship lab locations (Alexandria, Virginia; Augusta, Georgia; St. Louis, Missouri; and San Mateo, California) that provides employment, vocational training, and technology skills to veterans.
seeking to improve their access to the mainstream job market. The VCP was created to process at-risk archaeological collections belonging to the USACE. Many of these collections require rehabilitation to meet Federal standards, and the VCP employs veterans as laboratory technicians to perform this work. This includes cataloging and photographing artifacts, and cleaning, scanning, and re-housing photographs and documents, providing veterans with valuable bridging experience from the military into the public sector.

**Advisory Council on Historic Preservation (ACHP)**
The ACHP is an independent Federal agency that promotes the preservation, enhancement, and productive use of the Nation’s historic resources, and advises the President and Congress on national historic preservation policy. The ACHP offers a variety of free and affordable on-demand, web-based courses, including What is Section 106?; Successfully Navigating Section 106 Review: An Orientation for Applicants; Coordinating National Environmental Policy Act (NEPA) and Section 106; Basics of NEPA and Section 106 Integration; and Early Coordination with Indian Tribes in Infrastructure Projects. E-learning courses are available at: [https://www.achp.gov/training/elearning](https://www.achp.gov/training/elearning).

**National Conference of State Historic Preservation Officers (NCSHPO)**
The NCSHPO is a nonprofit organization whose members are SHPOs. The NCSHPO supports communication among SHPOs, Federal agencies, and other organizations. It also educates the public and elected officials about the national historic preservation program, legislation, policies, and regulations.

**National Association of Tribal Historic Preservation Officers (NATHPO)**
The NATHPO is a national, nonprofit corporation composed of THPOs and associate member Tribes. The NATHPO’s overarching purpose is to support the preservation, maintenance, and revitalization of the culture and traditions of Native peoples of the United States.

**National Native American Graves Protection and Repatriation Act (NAGPRA) Program**
The NAGPRA Program addresses the rights of lineal descendants, Indian Tribes, and Native Hawaiian Organizations to Native American cultural items, including human remains, funerary objects, sacred objects, and objects of cultural patrimony.

**Department of the Interior Tribal Leaders Directory**
The Tribal Leaders Directory provides contact information for each Federally recognized Tribe.

**U.S. Department of Housing and Urban Development (HUD) Tribal Directory Assessment Tool (TDAT)**
HUD developed TDAT to help users identify Tribes that may have an interest in the location of a HUD-assisted project. The tool includes Tribal contact information to assist users with initiating Section 106 consultation under the NHPA.

**National Center for Preservation Technology and Training (NCPTT)**
The NCPTT helps preservationists find better tools, materials, and approaches to conserving buildings, landscapes, sites, and collections.

**National Register of Historic Places (NRHP)**
The NRHP is the official list of the Nation’s historic places worthy of preservation. Authorized by the NHPA of 1966, the National Park Service’s NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America’s historic and archeological resources.

**National Register of Historic Places Bulletins**
The National Register Bulletin series provides guidance on evaluating, documenting, and listing different types of historic places.

**National Archives and Records Administration (NARA)**
NARA explores U.S. history through NARA documents, photos, and records.
LINKS, TOOLS, AND PRESERVATION PARTNER INFORMATION

Library of Congress
The Library of Congress is the Nation’s oldest Federal cultural institution, and it serves as the research arm of Congress. It is also the largest library in the world, with more than 162 million items. The collections include books, sound recordings, motion pictures, photographs, maps, and manuscripts.

Strategies for Sustainable Historic Preservation
Offered as part of the Whole Building Design Guide continuing education courses, this web-based, on-demand course introduces the historic preservation process. Specifically, it focuses on how to balance sustainability goals, and operations and maintenance practices, with preservation solutions.

National Preservation Institute (NPI)
The NPI offers continuing education and professional training for those involved in the management, preservation, and stewardship of cultural heritage. It serves individuals and groups from the government and private sectors by providing seminars in historic preservation and cultural resource management.

FedCenter Training
FedCenter sponsors on-demand training courses; Federally sponsored and nonprofit training course announcements; and links to various other Federal, state, local, and private training providers’ websites.

The Digital Archaeological Record (tDAR)
tDAR is a repository for digital archaeological investigations records. The DoD Cultural Resources Program archives files on tDAR. The DoD Cultural Resources Program Collection on tDAR is available at: https://core.tdar.org/collection/70330/osd-cultural-resources-program-collection.

American Cultural Resources Association (ACRA)
ACRA is the national trade association supporting and promoting the common interests of cultural resource management firms of all sizes, types, and specialties. Member firms undertake many of the legally mandated cultural resource management studies and investigations in the United States.

Society for American Archaeology (SAA)
The SAA is an international organization dedicated to the research, interpretation, and protection of the archaeological heritage of the Americas. The society represents professional, student, and avocational archaeologists working in a variety of settings, including government agencies, colleges and universities, museums, and the private sector.

Society for Historical Archaeology (SHA)
The SHA is the largest scholarly group focusing on the archaeology of the modern world. The society is concerned with the identification, excavation, interpretation, and conservation of sites and materials on land and under water.

Society of Architectural Historians (SAH)
The SAH promotes the study, interpretation, and conservation of architecture, design, landscapes, and urbanism worldwide for the benefit of all.
The Department of Defense (DoD) maintains thousands of historic and cultural resources that form an integral part of mission support and readiness. The Department’s cultural resources are the Nation’s heritage, and the Department holds these assets in trust for all Americans. As stewards of the Nation’s largest inventory of Federally owned historic properties, DoD strives to maintain and interpret those resources it manages to support the defense mission and to preserve military and cultural heritage for future generations. Cultural resources are mission-enhancing assets, connecting our fighting men and women with their proud history and traditions. The Department continues to use and maintain some of the Nation’s most treasured cultural resources as an integral part of mission support and readiness.

The DoD historic property portfolio includes 49 individual National Historic Landmarks, 3,171 National Historic Landmark contributing properties, 2,396 individual and contributing historic assets listed in the National Register of Historic Places, over 15,000 historic assets determined eligible for inclusion in the National Register of Historic Places, and over 132,000 recorded archaeological sites. Military Services and other DoD Components manage these cultural resources at the installation level and work closely with public stakeholders, including American Indian and Alaska Native Tribes, Native Hawaiian Organizations, State Historic Preservation Officers, and the Advisory Council on Historic Preservation. Sound cultural resources stewardship ensures DoD’s compliance with applicable historic preservation Federal laws, Executive Orders, and regulations in support of the defense mission.

Visit the Cultural Resources Program website at www.denix.osd.mil/cr/ for more information.

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