



# Archeology Program

National Park Service  
U.S. Department of the Interior



September 2017 Archeology E-Gram

## NPS NEWS

### Glen Canyon NRA Archeologists Present Poster on Looting and Vandalism at Pecos Conference



Glen Canyon archeology technicians Jakob Maase, Jocelyn Pettit, Ryan Washam, and Brittany Lewellen overlooking Lake Powell, with the poster they presented at the 80th Annual Pecos Conference.

NPS archeological technicians Brittany Lewellen, Ryan Washam, Jakob Maase and Jocelyn Pettit presented results of a graffiti study in Glen Canyon NRA at the 80th Annual Pecos Conference. The park covers 1.25 million acres in the archeologically rich, Four Corner's area of northeast Arizona and southeast Utah. In the 10% of the park that has been surveyed, over 2,600 sites were found.

The team used ArcGIS to study how people are accessing the most heavily vandalized sites in the park. Data indicate that people are traveling to archeological sites via the water. Knowing this will help focus graffiti prevention efforts. The poster also highlighted Glen Canyon's work with partners and other divisions within the park, who work to educate visitors about why they should not vandalize archeological sites; mitigation measures; and the role of law enforcement.

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### **Mesa Verde National Park Launches Archeology Podcast Series**

Mesa Verde NP has launched a podcast series about the prehistory and archeology in the Four Corners area. "Mesa Verde Voices" connects issues ancestral Puebloans faced with issues residents of the region face today. The first three episodes are "Revealed by Fire," "Corn = Life" and "Moving On." While Mesa Verde acts as a "jumping off point" for most of the episodes, the series also explores Puebloan history in other parts of the Four Corners.

The podcast is a result of a partnership between the national park, Mesa Verde Museum Association, KSJD Public Radio and Mesa Verde Country Tourism Bureau. Producers have secured funding for five new episodes for the 2018 season. The project is funded by grants from the Ballantine Family Fund, Mesa Verde Museum Association and Mesa Verde Country.

The podcasts are also designed to be used as driving tours of Mesa Verde NP. Visitors are encouraged to download episodes in advance because Wi-Fi can be unreliable in the park. The episodes are available for free on iTunes or at [mesaverdevoices.org](http://mesaverdevoices.org).

Mesa Verde Country Tourism Bureau also has launched the “Ancient Voices” podcast to guide visitors through the Canyons of the Ancients NM. Funded by a grant from the Colorado Tourism Office, the series is available for free on Mesa Verde Country’s website at <http://www.mesaverdecountry.com/ancient-voices/>

*From story in Durango Herald*



Children dig holes for mangrove saplings as volunteers help stabilize the shoreline at De Soto National Memorial. (Photo: Zack Wittman)

### **Citizen Science Volunteers Help Restore Shoreline at De Soto National Memorial**

Eighty volunteers donated 400 hours to assist archeologists from the NPS Southeast Archeological Center (SEAC) and De Soto NM staff to create "living shorelines" that restore native habitats and protect eroded coastline and threatened archeological resources in the park.

Traditionally, "hard armoring" using rocks, revetment, and seawalls have been used to protect eroding shorelines. While these techniques protect archeological sites, they can impede water flow and retard habitat restoration. Living shorelines are "soft" techniques that use shell and living plants such as mangrove. While providing a protective buffer against boat wakes, storm surges, and erosion, they

promote living landscapes. If successful, oysters will colonize and create reefs, and mangroves will filter water, trap sediment, and "grow" the shoreline to protect archeological resources.

Using oyster shells donated from restaurants through the "Shuck & Share" program organized by the Marine Discovery Center, New Smyrna Beach, Florida, shells were placed into marine-grade mesh bags. After "curating" for months, the bagged shells are ready to become substrate. Mangrove seedlings were grown until the age of three through partnerships with public schools, and universities. Over 1500 shell bags and 300 mangrove trees were deployed during the project. Over the next year, these plots will be carefully monitored and studied.

Marine biologists from the University of Central Florida (UCF), members of the Coastal Conservation Association, local Boy Scouts, and the Florida Public Archaeology Network (FPAN) also participated in the project.

*By Margo Schwadron*

### **NPS Park Cultural Landscapes Program Posts Introduction to Cultural Landscapes**

The NPS Park Cultural Landscapes Program has posted on their website *Cultural Landscapes 101*, a visual introduction to cultural landscapes of the national park system.

It includes a set of posters to celebrate the 101st birthday of the NPS. During August 2017, parks and programs used the "101" opportunity to introduce the basics of related activities, highlight lesser-known places and stories, and encourage visitors to discover new areas. *Cultural Landscapes 101* and *Landscape Characteristics 101* present the fundamentals of NPS cultural landscapes and can be enjoyed by both preservation professionals and those who are new to cultural landscapes.

The materials were developed by NPS staff and interns Lia Nigro, Rich Freitas, Mary Scales English, Meg Frisbee, Dinah Gewalt, Fielding Link, Kelsey Mork, David Hasty, Roberta Young, Chris Beagan, Vida Germano, Daniel Weldon, Emily Kambic, and Julie McGilvray.

To view, download, and explore the posters, go to <https://www.nps.gov/articles/cultural-landscapes-101.htm>

### **Call to Action #3-History Lesson Team Develops, Shares Resources**

The team that led Call to Action #3-History Lesson has developed resources to help NPS history practitioners design, implement, and evaluate dynamic history programming for our Second Century. *Best Practices for History Lessons and History Discovery Events* gathers ideas, resources, and exemplary history projects and programming that create a foundation for practicing engaged and relevant history. These tools and ideas can be scaled up or down. They can be used by folks doing historical interpretation within the NPS, as well as those outside of the agency looking for best practices in connecting people, places, and histories.

Explore "Best Practices for History Lessons and History Discovery Events" at <https://www.nps.gov/articles/series.htm?id=76AEAA2B-1DD8-B71B-0BDC55E305DD4006>.

Also, check out some of the great work of our peers, including archeologists, that inspired us to produce these guidelines and resources at <https://www.nps.gov/articles/history-discovery-events-gallery.htm>. Among the featured History Lessons are *Linking Hispanic Heritage Through Archeology* and *The Urban Archeology Corps in Richmond, VA*.

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### **National Park Service Finalizes Guidance on Plant Gathering Regulation**

The NPS has finalized public guidance for the NPS Plant Gathering Regulation (36 CFR 2.6). *Tribal Leaders Guide to the National Park Service Plant Gathering Regulation* provides guidance on how to request and develop a plant gathering agreement with the NPS. Here is additional information:

- The main public website for the NPS Plant Gathering Regulation is [https://www.nps.gov/history/tribes/final\\_rule.htm](https://www.nps.gov/history/tribes/final_rule.htm) or click "NPS Plant Gathering Regulation" from [nps.gov/tribes](https://www.nps.gov/tribes)
- The Tribal Leaders Guide will also be posted on the public NPS websites for the American Indian Liaison Office and the Cultural Anthropology Program.
- A new NPS e-mail address: [plant\\_gathering@nps.gov](mailto:plant_gathering@nps.gov) has been established to receive questions from both NPS employees and the public.
- Coming Soon: American Indian Liaison Office and the Cultural Anthropology Program is working on a centralized internal location to post all existing information regarding the regulation so that it is available 24-7 for NPS employees.

The NPS Plant Gathering Regulation was finalized on August 8, 2016. It provides a mechanism for federally recognized Indian tribes to negotiate and enter into a plant gathering agreement with the NPS to continue cultural traditions that pre-date the establishment of a park unit. The regulation can be found at: <https://federalregister.gov/a/2016-16434>.

### **National Park Service Awards Historic Preservation Grants to Native American Groups**

The NPS has announced the award of \$517,471 in Tribal Heritage grants to 14 American Indian and Native Alaskan organizations to support the protection of America's native cultures. Projects funded by these grants will document histories, preserve traditional and performing arts, conduct surveys of historical and archeological sites, protect historic properties, and provide education and training for participants of historic preservation programs.

Administered by the NPS, Tribal Heritage grants are appropriated annually by Congress from the Historic Preservation Fund, which is funded through Outer Continental Shelf oil lease revenues. More than 600 Tribal Heritage grants have been awarded throughout the previous 26 years of the program.

More information about Tribal Heritage grants can be found online at [www.nps.gov/thpo/tribal-heritage/index.html](http://www.nps.gov/thpo/tribal-heritage/index.html).

### **Yucca House National Monument Expansion Gets County Approval**

A long-standing access issue at Yucca House NM is one step closer to being resolved. Montezuma County commissioners agreed to support a key land donation to the monument so the public access point could be relocated off a ranchers' land.

In 2014, rancher Larry Pickens asked the county to abandon Road 20.5, which accesses Yucca House NM because tourist traffic and parking interfered with his farming operation. The request was denied because the federal public road easement through the rancher's land can't be abandoned until another access point is created. Conservationists Bernard and Nancy Karwick offered to donate to the NPS a 160-acre parcel adjacent to Yucca House, allowing for a new access point.

Problem solved? No. In 2017, county commissioners passed a No Net Loss of Private Lands ordinance. The ordinance requires a federal land agency that acquires private land to be put in the public domain has to offer an equal amount of federal land to the private sector. The commissioners' main complaint had

been purchases by Canyons of the Ancients NM of 12,000 acres of private inholdings and archeological-rich bordering land from what has been “willing sellers.” The No Net Loss policy created a “standstill,” on the Yucca House issue because Congress and potential bill sponsors needed county support to approve the land donation that would enlarge the monument.

Recently, however, the commissioners recognized that their original vote for the land donation happened before the No Net Loss policy took effect, and they again voted 3-0 to support the donation.

The secluded Yucca House National Monument was established in 1919, and is surrounded by a ranch. The 800-year old, unexcavated pueblo village has the ruins of 600 rooms, 100 kivas, several towers, multiple plazas, unexplained structures, and one great kiva.

*From story by Jim Mimiaga Journal Staff Writer*

### **Ancestral Connections at Guadalupe Mountains National Park**

September 14-17, 2017, the Mescalero Apache Tribe of New Mexico held a Blessing Feast to celebrate the Guadalupe Mountains and the aboriginal lands that they hold sacred. This was the first of ceremonial events that will take place in the next four years at sacred mountain sites in New Mexico and Texas.

Guadalupe Mountains National Park was honored to host the event. On September 16, the tribe and a BLM representative presented three programs at the visitor center. The topics included a film on the Mescalero Apache Tribal history and their Nde Bizaa Language program, caves of the Guadalupe Mountains, and a presentation on Mescalero foods and uses of native plants.

An elder of the tribe shared his thoughts on the event. He said, “Last night, here, I listened to the song of the coyote, I have not shared his song in these mountains since I was a boy. It’s good to return.”

*By Elizabeth Jackson*

### **Chiricahua National Monument Celebrates Buffalo Soldiers**

Chiricahua NM displayed exhibits at the Visitor Center September 4-30, 2017, to honor Buffalo Soldiers. In 1885-1886 Buffalo Soldiers patrolled Bonita Canyon, that became part of Chiricahua NM. One exhibit describes the past and future archeological work in Bonita Canyon to document the Buffalo Soldiers’ encampment. Kristina Whitney, the park archeologist, developed this exhibit.

Another exhibit focuses on Colonel Charles Young and the Buffalo Soldiers. Young was the highest ranking African American officer in the US Army until his death in 1922. He was a West Point graduate, a university professor, a military attaché to Haiti under President Theodore Roosevelt, and the first African American national park Superintendent. This exhibit is on loan from the Charles Young Buffalo Soldiers NM in Ohio.

For more information about Chiricahua NM, go to [www.nps.gov/chir](http://www.nps.gov/chir). For further information about Charles Young or the Buffalo Soldiers, go to [www.nps.gov/chyo](http://www.nps.gov/chyo).

*By Libby Schaaf*

## **FEDERAL NEWS**

### **New Archeological Sites in Alaska**

Archeologists at Colorado State University's Center for the Environmental Management of Military Lands (CEMML) have made discoveries placing Native Americans in Alaska 14,000 years ago. The sites are located on 1.6 million acres of land at Fort Wainwright, southeast of Fairbanks. Julie Esdale and her team have uncovered tools and the remains of bison, mammoth, elk and other large game at sites used by nomadic hunters in the region.

Two sites are particularly important: McDonald Creek in the Blair Lakes Archaeological District, and the Delta River Overlook in the Heart of the Glaciers Archaeological District. The McDonald Creek site is the second oldest in Alaska, dating to the late Pleistocene epoch. Esdale, working with Kelly Graf, Texas A&M, has found evidence of people camping at the site at least three times in the past: 14,000, 12,000 and 6,000 years ago. Stone tools – most of them flakes created when sharpening projectile points – have been uncovered, along with bison, mammoth and waterfowl remains.

The Delta River Overlook is a campsite with evidence of occupation at least 12 times from 12,000 to 2,000 years ago. Esdale's team is working with Ben Potter, University of Alaska at the site. Together they have uncovered stone tools, fire pits, and remains of bison, elk, caribou, waterfowl and small mammals. Some of the artifacts were buried under more than 12 feet of silt deposited over the centuries.

CEMML works with the Army, Air Force, U.S. Army Corps of Engineers and other federal agencies on lands managed by the U.S. government. CEMML scientists provide, among other services, natural and cultural resources management.

### **Interagency Fire Planning Committee Releases New Resource Advisor Guide**

The revised READ Guide is now available. Renew your knowledge and familiarize yourself with the various aspects of Resource Advising!

The Resource Advisor provides professional knowledge and expertise for the protection of natural, cultural, special management areas, and other resources within an emergency incident such as wildfires or after floods and hurricanes; or planned events. The NPS always needs more Archeology Resource Advisors. If you are interested in becoming a READ, contact the Fire Program Manager in your park.

To download a copy of the Guide, go to

<https://www.nwcg.gov/sites/default/files/publications/pms313.pdf>

### **Archeologists Call for More Protection for Chaco Region**

Archeologists have issued a report calling for more protection of the area surrounding Chaco Culture NHP, saying increased oil and gas development has the potential to destroy the landscape of the Chaco culture. They have asked for the federal government to make permanent a 10-mile buffer zone around Chaco park.

The report comes as federal officials revamp a management plan that will guide development as more companies look to tap shale deposits in the San Juan Basin, already one of the nation's largest natural gas fields. Archeologist Paul Reed contributed to and edited the report, which includes essays by Anna Sofaer, Robert Weiner, and Richard Friedman; G. B. Cornucopia; Carolyn Heitman and Sean Field; and Ruth Van Dyke.

The report details new research using satellite and laser-imaging tools that has uncovered previously indiscernible sections of roads that connect sites throughout northwestern New Mexico. Research also has provided insight into the importance of the landscape to whatever activities were drawing people to Chaco centuries ago. Researchers noted less tangible features, like unobstructed views to distant buttes or mountain peaks.

A World Heritage Site, Chaco and its outlying archeological remnants have become the focus of the fight over expanded drilling. Environmentalists have long complained about pollution from fossil fuel extraction and coal-fired power plants in the region, and now tribal leaders have joined in with concerns about the potential effects on cultural resources. Park staff also raised concerns about light pollution from oil and gas operations. Chaco was the site of the first national park observatory and has been recognized for its dark skies.

The archeologists argue that existing regulations do a good job of protecting physical sites but that there is no consideration of less tangible aspects. The Bureau of Land Management followed the letter of the law in protecting the site but allowed for 12 pump jacks to be installed within view of the great houses. The nearest one is less than a mile away.

Industry officials say developers can operate in a way that protects significant sites.

*From report by Susan Montoya Bryan, Associated Press*



#### **The Federal Archeologist's Bookshelf**

*Aquatic Adaptations and the Adoption of Arctic Pottery Technology: Results of Residue Analysis* by Shelby L. Anderson, Shannon Tushingham, and Tammy Buonasera. *American Antiquity* 82(3), 2017, 452-479.

One of the most interesting (because it involves food!) and longstanding challenges in hunter-gatherer studies is understanding the causes of the adoption of ceramics. Pottery is usually a big commitment for a foraging group, because ceramic vessels tend to be heavier and more fragile than membranes (skin, gut, etc.), basketry, or wood, and represent a significant labor and resource investment in mining clay, preparing temper, and collecting firewood. However, as the authors of this study point out, ceramics have many advantages. Under the appropriate conditions, the adoption of ceramics would be a logical choice for food processing and storage.

In northern Alaska, the geographical focus for this study, Anderson et al. recognize two major pottery traditions: one associated with pre- 1500 BP Choris and Norton sites; and one associated with post-1500 BP Birnirk, Thule, and late pre-contact sites. Earliest pottery, for the most part, post-dates 2300 BP, is found primarily in coastal sites, and shows a north to south chronological trend. To glean this information, the team examined a breath-taking 45,000 site forms and 15,000 site reports. They include a detailed and extensive table of information on pottery sites in Alaska in the article.

Given the moist climate, short production season, and lack of fuel for firing, what were the advantages of pottery for prehistoric Alaskan populations? Anderson et al. suggest that pottery may play a crucial role in the rendering of fish and whale oil and argue that the adoption of pottery in Alaska may be linked to expansion of reliance on marine resources. They test this hypothesis by conducting chemical analyses of 20 pottery samples dating to 2700-200 BP from loci on Cape Krusenstern in western Alaska. They looked for bio-markers identifying specific taxa and that indicated that the vessel was heated

“Criteria Used to Interpret Lipid Sources” and “Residue Analysis Results” carefully demonstrates the organic chemical logic of their hypotheses and findings. (Those of you who did not take Organic Chemistry might want to skip this part. However, to understand the Discussion, consult footnotes in Table 3 for meanings of the acronyms.) The findings suggest that the ceramics were used to process freshwater fish and terrestrial mammal species, and not marine fish or whale. As the authors point out, however, these results are preliminary and not definitive. Compound-specific isotopic baseline data are needed for taxa from the region, and larger samples of pottery pre-dating 1500 BP, to refine the analysis.

It would also be useful to unpack ‘marine organisms.’ Do these taxa include mussels and clams? In other areas of the world, women, children, and elderly people contribute small but reliable amounts of protein and fat to the diet that become critical when hunters’ efforts are unsuccessful. This is the same sector of the population that is most likely to have made pottery. Identifying marine invertebrates in ceramic vessels has the potential to illuminate important dietary components that are often obscure.

This study is but one in a larger research program examining the history of habitation on Cape Krusenstern funded by the NPS. The research is a nice example of a Cooperative Ecosystem Study Unit partnership.

(Correction: In the August issue of the E-Gram, we commented that the author of the reviewed article, Lynn Gamble, did not mention Channel Islands NP was manager of the El Monton site. In fact, the NPS is not the manager of Site 333. It is located on an inholding in the park, and is managed by The Nature Conservancy. Our apologies for any misconceptions.)

### **International Archaeology Day**

International Archaeology Day (IAD) is right around the corner! In 2017, IAD takes place on October 21. NPS is a sponsor and collaborating institution for IAD. Let’s make it a big day for archeology!

Hosting archeology events on or around October 21? Sign up to be a collaborating organization and register events on the International Archaeology Day website, which is hosted by the Archaeological Institute of America. AIA will help the NPS promote its IAD events. Encourage your partner organizations to register, as well.

Parks can promote their IAD events in the CMS, over social media, and through public affairs. Archeology and Communications Program folks will draw on the IAD database to promote your events over social media.

- Learn more about International Archaeology Day: <https://www.archaeological.org/archaeologyday>
- Sign up to be a collaborating organization: <https://www.archaeological.org/archaeologyday/CollaboratingOrganizationInfo>
- Post your event to the IAD database: <https://www.archaeological.org/archaeologyday/events>
- Find a media toolkit, hashtags for social media, and printable posters: <https://www.archaeological.org/archaeologyday/about>

### **GRANTS AND TRAINING**

(No announcements submitted.)

**SLIGHTLY OFF-TOPIC: New Experiment Reveals Secret Behind 200,000-Year-Old Neanderthal Glue** *From story by George Dvorsky, Gizmodo*



Tar collected in a birch bark “container.” (Image: Paul Kozowyk)

We typically think of fire, stone tools, and language as the “killer apps” of early human development, but the ability to glue stuff together was as much of a transformative technology as any of these. Over a hundred thousand years ago, Neanderthals used tar to bind objects together, yet scientists have struggled to understand how they were able to produce this sticky substance. A new experiment reveals the likely technique used by Neanderthals, and how they converted tree bark into an ancient form of glue. New research reveals the ingenuity and intellectual capacities of Neanderthals, and the likely method used to produce this ancient adhesive.

Based on archeological evidence, we know that Neanderthals were manufacturing tar during the Middle Pleistocene Era. The oldest traces of this practice date back to a site in Italy during a time when only Neanderthals were present in Europe. Similar tar lumps and adhesive residues have also been found in Germany, the oldest of which dates back some 120,000 years ago. The Neanderthals used tar for hafting. It was a force multiplier in engineering, allowing them to think outside the box and build completely new sets of tools.

What makes the presence of tar at this early stage in history so intriguing, however, is that Neanderthals were making adhesives thousands of years before the invention of ceramics, which by the time of the ancient Mesopotamians was being used to produce tar in vast quantities.

For years, archeologists have suspected that Neanderthals performed dry distillation of birch bark to synthesize tar, but the exact method remained a mystery—particularly owing to the absence of durable containers that could be used to cook the stuff up from base materials. Attempts by scientists to replicate the suspected Neanderthal process produced tar in miniscule amounts and far short of what would be required for hafting.

A research team led by Paul Kozowyk from Leiden University has replicated the distillation process. Tar can be derived from the dry distillation of organic materials, typically birch bark or pine wood, so Kozowyk’s team sought to reproduce tar with these substances and the cooking methods likely at the disposal of the Neanderthals.

It’s very likely that the Neanderthals stumbled upon the idea while sitting around the campfire. “A tightly rolled piece of birch bark simply left in a fire and removed when partially burned, once opened, will sometimes contain small traces of tar inside the roll along the burned edge,” explained the authors. “Not enough to haft a tool, but enough to recognize a sticky substance.”

With this in mind, the researchers applied three different methods while recording the amount of fuel, materials, temperatures, and tar yield for each technique. Their results were compared to artifacts to see if they were on the right (or wrong) track. By the end of the experiments, the researchers found that it was entirely possible to create tar in the required quantities using even the simplest method, which required minimal temperature control, an ash mound, and birch bark.

“A simple bark roll in hot ashes can produce enough tar to haft a small tool, and repeating this process several times (simultaneously) can produce the quantities known from the archaeological record,” write

the researchers. “Our experiments allowed us to develop a tentative framework on how the dry distillation of birch bark may have evolved, beginning with the recognition of small traces of birch bark tar in partially burned bark rolls.” They added: “Our results indicate that it is possible to obtain useful amounts of tar by combining materials and technology already in use by Neanderthals.”

The researchers were able to obtain 16 grams of useable tar in a single experiment. What’s more, temperature control doesn’t need to be as precise as previously thought, and a durable container, such as a ceramic container, is not required. That said, the process did require a certain amount of acumen; for this process to come about, Neanderthals needed to recognize certain material properties, such as the degree of adhesiveness and viscosity. We’ll never be certain this is exactly what Neanderthals were doing, but it’s a possibility with important implications for early humans in general.

Read the full paper at <https://www.nature.com/articles/s41598-017-08106-7>

**Experimental methods for the Palaeolithic dry distillation of birch bark: implications for the origin and development of Neandertal adhesive technology** *Scientific Reports* 7,  
Article number: 8033

*Archeology E-Gram*, distributed via e-mail on a regular basis, includes announcements about news, new publications, training opportunities, national and regional meetings, and other important goings-on related to public archeology in the NPS and other public agencies. Recipients are encouraged to forward *Archeology E-Grams* to colleagues and relevant mailing lists. The *Archeology E-Gram* is available on the *News and Links* page <https://www.nps.gov/archeology/public/news.htm> on the NPS Archeology Program website.

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