



Archeology Program

National Park Service
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NPS NEWS

Former National Park Service Archeologist Ruthann Knudson Passes



Retired NPS archeologist Ruthann Knudson died on March 25, 2018. Knudson was born in Milwaukee, WI, in 1941, and graduated from Denfeld High School, Duluth, MN in 1959 as valedictorian. She entered Hamline University in St. Paul.

During her summers at Hamline University, Knudson cooked for the dining room at Yellowstone NP, and at Spruce Tree Lodge at Mesa Verde NP. She recalled that it wonderful introduction to the Wetherill Mesa Archaeological Project and the Navajo community. Consequently, she transferred to the University of Minnesota to be an archeologist. Knudson received her BA in anthropology in 1963. She spent the summer as an Interpretive Ranger at Bandelier NM.

Knudson received her MA from University of Minnesota and her Ph.D. from Washington State University. Her research focused on the North American Plains and Rockies, with particular emphasis on Paleoindian studies. During graduate school she crewed for Marie Wormington at the Frazier Agate Basin site, and with Marie and Joe Ben Wheat at the Jurgens site. In 1971, she was at the Crabtree Flintknapping School in southern Idaho, and in 1972 she worked with Robert S. MacNeish on the Ayacucho project in Peru. She founded the *Newsletter of Lithic Technology* with Guy R. Muto in 1972.

After earning her Ph.D, Knudson taught at the University of Idaho (1974-1981). She was a Senior Archeologist on the BOR Dolores Archeological Project (DAP) (1978-1980). She was the SAA Legislative Coordinator (1979-1980) and helped add archeology to the NHPA 1980 amendments; ensure passage of the DAP funding authorization; and add CRM into the Central Idaho Wilderness Act. During this time Knudson also represented the Coordinating Council of National Archeological Societies. She was a Senior Project Scientist at Woodward-Clyde Consultants (1981-1987).

Knudson returned to Federal service in 1989, when she worked for the BLM in Lewistown, MT. From there, Knudson moved to the NPS WASO Archeological Assistance Division. In 1996 she moved to Agate Fossil Beds NM, where she served as Superintendent until retiring in 2005.

In retirement, Knudson served on the Friends of the Museum of the Plains Indian Board; North Central Resource & Development Area Board; Great Falls-Cascade County Historic Preservation Advisory Commission; Upper Missouri River Heritage Area Planning Corporation Board; and Montana Burial Preservation Board. She taught at Great Falls College, Montana State University, and continued her consulting business and research activities. She has also been on the boards of the American Society for Conservation Archaeology, SAA Preservation Action, Women's Council on Energy & Environment, Plains Anthropological Society, and Idaho Archaeological Society. She was recognized professionally through a number of honors and awards including the prestigious Margaret Mead Award from the American Anthropological Association.

Knudson was an expert flint-knapper and provided detailed illustrations for research studies. She also established Paleo-Designs. Paleo-Designs illustrated and sold notecards featuring Paleoindian points and

conducted private cultural resource management activities. Knudson counted gardening, flowers, and vegetable and fruit canning among her leisure activities. Her many friends and colleagues will miss her energy and enthusiasm.

Sara Dolan Chief of Integrated Resource Management at San Juan Island National Historical Park

Sara Dolan has been chosen as the new Chief of Integrated Resource Management at San Juan Island NHP. She has been employed as an NPS archeologist since 2008. She received her MA in archeology at Northern Arizona University in 2005 and worked as a project manager for a cultural resource management firm in Tucson.

From 2008 to 2015, Dolan worked as an archeologist and historic preservation specialist at Pu'uhonua o Hōnaunau NHP. Her projects mainly included pre-contact and post-contact site assessments and preservation maintenance focusing on stabilization of traditional dry-set stonework structures. Most recently, she worked as a Section 106 compliance archeologist at Yosemite NP.

Dolan began her new job at San Juan NHP on April 1, 2018.

By Brandon Cadwell

New Superintendent of Chaco Culture National Historical Park, Aztec Ruins National Monument



Denise Robertson has been named superintendent of Chaco Culture NHP and Aztec Ruins NM. A California native, Robertson first worked for the NPS in 1998 as an interpretive ranger at Redwood National and State Park and then on the National Mall from 1999 to 2000. She spent the next six years as a park ranger in California for the U.S. ACE at reservoir recreation sites.

Robertson returned to the NPS in 2006 as South District interpretation ranger and education and volunteer program manager at Sequoia and Kings Canyon National Parks. Ten years later, she moved into a management analyst position in the office of the Sequoia and Kings Canyon superintendent. Robertson will assume her new role at the two parks on June 24, 2018.

Junior Archeologist event at Harriet Tubman National Historical Park

Archeologists at Harriet Tubman NHP hosted a junior archeologist event at Harriet Tubman NHP. NPS employee Amy Roache-Fedchenko helped participants form hypotheses about items they found, such as what they were made from and who might have used them. Roache-Fedchenko, along with Jessica Bowes is a museum specialist at Fort Stanwix National Monument in Rome, New York.

National Park Service Archeologists Excavate at Home of Author of Conan the Barbarian

A team of NPS archeologists excavated a storm cellar at the home of writer Robert E. Howard. Howard is known for writing the Conan the Barbarian series during the 1930s. Jeffrey Shank, an NPS archeologist, created a digital underground image of Howard's backyard to pinpoint potential areas of interest for his team. The team hopes that any discovery they make at the excavation site will lead toward helping the public better understand the author, who committed suicide at the age of 30.

By Joshua Peguero, Station KTXS

New National Park Service Resource Stewardship and Science Website Launched

The NPS National Capital Region, Resource Stewardship and Science (RESS) supports regional parks with expertise in biology, ecology, archeology, cultural anthropology, history, historic preservation, and more; and they've launched a new website. The site creates a platform for regional cultural resource programs and brings together existing sites for the Museum Resource Center, the NCR Inventory & Monitoring Network, and the Chesapeake Watershed Cooperative Ecosystems Studies Unit. Plus, it's mobile friendly so you can even learn about RESS on the go!

With the launch of this new site, the Center for Urban Ecology website is being retired. Redirects from this site to the natural resource part of the new RESS site are being used to make the transition as seamless as possible.

To visit the site, go to nps.gov/RESSNCR

By Megan Nortrup

Fossil footprints 'unique in the world' show a human chasing a giant sloth

In a western corner of White Sands NM, NPS scientists recently found a human print inside a ground sloth's paw marks, they report in a new analysis of the park's tracks in the journal *Science Advances*.

"Thousands and thousands of trackways," called megatracks, crisscross the area, said Vince Santucci, a senior NPS paleontologist and a coauthor of the new report.

In 1981, geologists investigated tracks of camels and other four-footed animals at the nearby White Sands Missile Range. In 2011, researchers began a systematic survey of the megatracks in the national monument. This survey revealed a collection of human tracks: 27 individual footprints that vanished into a dune. Santucci and his colleagues measured the stride and the gait to predict where beneath the dune the next print should be and excavated the dune. "Right where we anticipated they would have been, were human footprints," he said. The tracks, if exposed to moisture, will crumble shortly after excavation. The ancient walkers made prints in deposits of lake sediment, which were covered over time by a layer of sand. They are at least 11,000 years old, because several are super-imposed on the tracks of a giant ground sloth that became extinct at the end of the Pleistocene.

To read the article, go to <http://advances.sciencemag.org/content/4/4/eaar7621.full>

From story by Ben Guarino, Washington Post

FEDERAL NEWS

Arizona May Put People With Minimal Training in Charge of Identifying Archeological Sites

The Pascua Yaqui Tribe, Tohono O'odham Nation, Gila River Indian Community, Salt River Pima-Maricopa Indian Community, and Cocopah Indian Tribe are opposing a proposed law that would allow people with minimal training to look for historic artifacts on state land — a move that could lead to the destruction of important archeological sites.

House Bill 2498 was introduced earlier this year by Representative David Cook, a cattle rancher from Globe. "What's going on, in my opinion, is government corruption at its best," Cook told the *Phoenix New Times*. "Government agencies are being held hostage to mandate giving work to these

archeologists. This mechanism that's going on inside government is doing nothing but driving funding towards the individuals that do this type of work."

In Arizona, ranchers can graze their livestock on public land in addition to private property. If they want to make any changes to state land, they need to get permission from the State Land Department first, which means going through a process that the Arizona Cattlemen's Association says is overly burdensome, expensive, and time-consuming. Typically, as part of that process, ranchers have to pay for an archeological survey. Anything that's considered a "ground-disturbing activity," such as using tractors and chains to rip out creosote bushes, requires an archeologist's evaluation. If they discover any sites or objects more than 50 years old, state officials are notified, as are Native American tribes.

Cook's bill would change who can perform those evaluations, allowing the state's historic preservation officer to select "an individual who has completed a national cultural resources training program to perform the survey report." "This does not define the type of national training program or similar course of study," the Arizona Archaeological Council wrote to members of the Arizona Legislature.

Cook's bill allows "para-archeologists" who have taken a 40-hour class to perform a survey and determine whether there are historic or archeological sites present. A professional archeologist in the state preservation office would later review the written reports, but wouldn't necessarily visit the site in person. Currently, the only people who can survey a new site and evaluate its significance are archeological consultants who have been granted a permit under the Arizona Antiquities Act.

Cook noted that Arizona already uses para-archeologists on some projects. But, according to Kathryn Leonard, the Arizona SHPO, para-archeologists are currently allowed to perform surveys under the supervision of a professional archeologist only. Those para-archeologists have been certified through the Department of Agriculture's Natural Resources Conservation Service. The NRCS' cultural resources training includes four hours of online study, eight hours of classroom training, and eight to 16 hours of fieldwork. Anyone can go through the training — even ranchers themselves.

In a March committee hearing, Senator Jamescita Peshlakai, a Democrat from the Navajo Nation, asked Cook if he'd consider amending his bill to take out the language that allows para-archeologists to perform surveys. Cook declined. The bill has been approved by the Arizona House of Representatives, and is waiting for a vote from the Arizona Senate.

From story by Antonia Noori Farzan, Phoenix New Times

Utah's San Juan County Files Claim Over Access to Recapture Canyon

San Juan County, Utah, is claiming a right of way through controversial Recapture Canyon. Without state support, county officials filed a stand-alone lawsuit against the U.S. government, citing records indicating the county maintained a "road" there since 1886. The canyon, famed for cliff dwellings and an illegally built ATV trail, has been a source of friction between county officials and federal land managers, who closed the canyon east of Blanding to motorized use in 2007 to protect its archeological resources. The suit identifies the Recapture route as County Road D5314, running from Recapture Dam to Perkins Road, and seeks a right of way 66 feet across.

In 2015, Utah officials filed a notice of intent to pursue title to the Recapture right of way with the Interior Department. The northernmost portion of the 9.22-mile route through Recapture was the scene of a 2014 protest ride organized by San Juan County Commissioner Phil Lyman. While Lyman did not drive

his ATV on closed routes, his involvement led to a conviction on conspiracy charges in federal court, a 10-day sojourn in jail, and being honored as Utah's county commissioner of the year in 2015 for his willingness to stand up to federal "overreach" on public lands.

Most recently, the BLM declined the county's long-standing request to authorize a motorized route there, a decision the state had challenged before the Interior Board of Land Appeals. The county's new claim filed in U.S. District Court addresses status of the long-repealed RS2477, created through a frontier-era law that granted counties title to roads crossing public land. To qualify, such roads had to be in continuous use and open to the public for at least 10 years before 1976.

Documents in the lawsuit include U.S. Army maps depicting a "thoroughfare" through the canyon in from 1886. The county "regularly expended public funds" to maintain RS2477 after 1925 and later designating it D5314. A 1903 edition of "The American Anthropologist" describes the route as "well traveled." Aerial photographs from the 1950s through 1976 "confirm the continuing existence and use of the road."

Evidence of this maintenance is hard to discern on the ground today, except for the trail that off-road enthusiasts cut along the canyon's benches, crossing Recapture Creek in half a dozen places. Without BLM authorization, trail builders moved boulders, limbed ancient juniper trees and installed crossing grates. Two local men were prosecuted and fined for the work after the BLM determined trail construction damaged archeological sites and could lead to looting.

Critics point out that San Juan County failed to list Recapture Canyon, hardly a mile from the county's main population center, among the routes it intended to claim back in the early 1980s. The county's interest in the canyon did not appear to register until it became a popular destination for ATV riders, which attracted the attention of wilderness advocates who pressured the BLM to restrict access. The canyon has been a public lands flashpoint ever since.

By Brian Maffly, Salt Lake Tribune

Judge Dismisses Historic Preservation Claim in Drilling Case

A U.S. district judge has dismissed claims by environmentalists who argued that oil and gas development near Chaco Canyon, NM, violated historic preservation laws because of potential threats to culturally significant sites. The U.S. District Court for the District of New Mexico issued an opinion rejecting claims raised by groups opposed to oil and gas drilling on public and tribal lands near Chaco Culture NHP. Browning appeared to deliver a partial win to drilling opponents in late March 2018 when he issued an order agreeing with their claims that BLM violated NHPA in approving some development.

The decision comes in a long-running dispute over management of land surrounding Chaco Culture NHP. Since 2015, the groups have argued in court that the BLM routinely approves development in the area without adequately weighing impacts on the environment and cultural resources. Efforts to petition the federal government to set aside large parts of the Chaco region as an area of critical environmental concern have been unsuccessful. Located in a remote area of northwest New Mexico, Chaco Canyon holds thousand-year-old Ancestral Puebloan ruins, and the greater area is home to Navajo communities.

In a 132 page decision, Browning wrote that BLM adequately considered potential impacts near oil and gas wells. Chaco Canyon and related sites are outside the zone of the challenged wells' impacts. "All of those individuals who visit those historic sites might be inconvenienced, or their experience might be less

enjoyable, but that harm does not outweigh the potential hundreds of thousands to millions of dollars of economic harm the operators will endure.”

Browning also rejected environmentalists' claims that BLM didn't fully weigh potential impacts associated with hydraulic fracturing and horizontal drilling on wells in the area. BLM's most recent resource management plan for the area, from 2003, does not closely analyze the techniques, and drilling critics argued that the agency should hold off on permitting while it works on updating the RMP.

The oil and gas industry welcomed Browning's ruling, saying the 2015 lawsuit was more about derailing drilling rather than protecting the environment or the state's cultural treasures. The plaintiffs can challenge the decision in the 10th U.S. Circuit Court of Appeals. The appeals court has previously denied the groups' bid to halt permitting for drilling in the Chaco area. Environmental groups involved in the case are Diné Citizens Against Ruining Our Environment, the San Juan Citizens Alliance, WildEarth Guardians and the Natural Resources Defense Council. They are represented in part by the Western Environmental Law Center.

From stories by Ellen M. Gilmer, E&E News, and Susan Montoya Bryan, Associated Press

Bureau of Land Management Renames Anasazi Heritage Center

The Anasazi Heritage Center was renamed the Canyons of the Ancients Visitor Center and Museum during a ceremony in March 2018. The new name intentionally avoids the word “Anasazi.” Once used by archeologists to refer to the Ancestral Puebloan people who built most of the pueblos and cliff dwellings in the Southwest, the word is a Navajo term that can mean “ancient enemies.”

Museum volunteers, BLM staff, Ute Mountain Ute tribal members, representatives from Congress and interested locals gathered at the center north of Cortez for the official renaming and the unveiling of a new sign. After speeches from several dignitaries, including Representative Scott Tipton and representatives from the offices of Senator Michael Bennett and Interior Secretary Ryan Zinke, visitors celebrated with cake and tours of the museum and nearby Escalante Pueblo.

The Canyons of the Ancients National Monument is home to more than 6,000 archeological sites. Almost 4 million artifacts from those sites are stored in the museum.

From story by Stephanie Alderton, Durango Herald Staff Writer

SLIGHTLY OFF TOPIC: Archeology in the Palm of Your Hand

By Ashley McCuiston, David Brown and Thane Harpole (fairfield@fairfieldfoundation.org)

New technologies are redefining how archeologists share the past with the present. The thrill of discovery, methodologies and interpretations, and the need to preserve vital, irreplaceable resources –the challenge is communicating these to the public. The Fairfield Foundation launched a new initiative in 2017 to tackle some of these issues using drones, photogrammetry, and 3D printing.

The foundation's goal is to demonstrate the process of archeology at the Fairfield Plantation site, Gloucester County, Virginia. The 1694 manor house has been the focus of excavations since 2000 by a team of professional archeologists involving hundreds of volunteers each year. The process of

excavation, and the historical discoveries, inform and educate everyone involved. It is crucial that this outdoor classroom and laboratory experience be accessible to all.

To increase accessibility, foundation staff use a DJI Phantom 4 Pro drone to photograph the surface after the completion of every excavated layer. A GISoft PhotoScan transforms the photographs into a detailed digital elevation model, creating a virtual landscape alongside an archeological archive that is far more detailed than standard documentation would produce. Repeating this process after the excavation of each layer allows accurately portrayal of the excavated archeological layers. More important, though, is the overlay of these scans using precise locational data. From this, they can create three-dimensional polygons of each excavation unit and layer and graphically demonstrate the excavation process.

This is only half the process, though. Much of the interest and appeal of archeology is derived from tactile experiences. 3D printing technology now allows researchers to take individual polygons and print, paint, and assemble them like a puzzle. This can be achieved with older field documentation as well, although additional manipulation is necessary to compensate for fewer excavation photos and less elevation data. The result is stunning and the preliminary outreach programs suggest that it not only connects users with the space, but provokes discussions regarding archeological methods and interpretation.

The initial prototype combines older and current excavation areas for the south gable of the manor house. As excavations continue, the printed area will expand to cover the entirety of the 60' x 80' foundation. Staff are also designing and printing the manor house, which burned in 1897 and was dismantled shortly thereafter. Six photographs and the archeological evidence provide a blueprint for this stage of the project, and the benefit of 3D printing is that any mistakes can be easily redesigned and reprinted. Printing the missing architectural elements as individual elements (ie. windows, doors, walls, etc.) rather than complete units, will extend the educational potential of the entire project.

The digital and physical models will be made available to the public at no charge and updated with each excavation season. Students and teachers across the globe will be able to download and print the Fairfield archeological site and the Manor House and use Fairfield Foundation lesson plans to teach about archeology, architecture, history, and public engagement.

For more information about 3-D printing, go to <https://fairfieldfoundation.org/the-past-in-plastic-3d-printing-archaeology-at-fairfield/>.

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 www.nps.gov/archeology/public/news.htm on the NPS Archeology Program website.

Contact: Karen Mudar at dca@nps.gov to contribute news items and to subscribe.