

Jornada Research Institute

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The Jornada Research Institute (JRI) has as its mission the study of the archaeological, ethnohistoric, and natural resources of the northern Chihuahuan Desert of Arizona, New Mexico, the Trans Pecos west and adjacent regions. JRI is committed to the protection and preservation of these resources so that current and future generations may benefit from their research and educational values. JRI is represented by a group of talented researchers from diverse backgrounds, allowing the institute to focus on multi-disciplinary approaches while sharing and engaging the public through a variety of educational and training opportunities.

Did you know that... Researchers have discovered potato starch residues in the crevices of a 10,900-year-old stone tool in Escalante, Utah — the earliest evidence of wild potato use in North America. This is the first archaeological study to identify a spud-bearing species native to the southwestern United States, *Solanum jamesii*, as an important part of ancient human diets. *Solanum jamesii* (common name, wild **potato** or **Four Corners potato**) is a species of nightshade. "The Four Corners Potato is endemic to Grand Staircase, Mesa Verde and Bears Ears, and this month Indigenous farmers have planted the tiny potato and are watching it flourish in farms across our ancestral homelands. These timeless foods grow amid the stark cliffs and dunes that surround, for example, Big Bear Farm in Jemez Pueblo, where the Jemez River continues to swell from melting Rocky Mountain snowpack. Indigenous farmers are re-learning the physiology of this crop, using sun, soil, and water, as well as songs and prayers to create a beautiful blessing for our Bears Ears communities."

Sources: <https://unews.utah.edu/utah/>; <http://utahdinebikeyah.org>



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"THE MISERABLE HISTORY OF SEASONAL ALLERGIES"

It's that time of year...winds, pollen, blowing dust and bug parts. Allergies have been with us since the dawn of time, and people of many different cultures have struggled to find relief. Kara Wada (Quartzly, April 3, 2019) writes that over 5,000 years ago, the Chinese used the berries of the horse-tail plant to relieve congestion and decrease mucous production associated with plant fever during the fall. In Egypt, the "Papyrus Ebers" written around 1650 BC, recommended over 20 treatments for coughs or difficulty breathing using honey, dates, juniper and beer. Paradoxically, Europeans exported Inca tobacco to experiment with seasonal allergies. Now, Big Pharma has thrown spaghetti at the wall. Personally, I'll take the beer. -JH

SPRING 2019 NEWSLETTER

Joan Price Receives Award

The El Paso Archeological Society President Fernando Arias presents Joan Price with their 2018 Award of Distinction “in Recognition of Her Southwest Archaeological Research and Her Love of the Southwest Culture and Its People” at the State Line Restaurant last Sept. 15.

Joan, a research associate with JRI, has worked for more than 20 years at the Three Rivers Petroglyph Site, where she conducts tours and gives presentations about the cultural landscape of the region. She has published numerous articles about the Native American ancestral homelands. She is one of JRI’s most active research associates. Not only does she contribute to JRI’s mission of research, she has spear-head the Institute’s commitment to publication and outreach with her work in the local schools in Alamogordo, and her interesting field trips to Three Rivers Petroglyphs. Congratulations Joan!!!



Photo by Jorge Salgado.



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JRI Conducts Annual ARPA Training

The Jornada Research Institute conducted its third annual training course on the looting and vandalism of archaeological sites in Albuquerque, April 30th-May 1st, 2019. It was hosted by the US. Bureau of Reclamation, Albuquerque Area Office. We would like to express our appreciation to the staff at AAO for their assistance.

The two-day workshop combined classroom instruction and discussion of the Archaeological Resources Protection Act, (its key provisions and case studies), and related legislation, with field instruction in assessing and recording site damage. Classroom presentations covered profiles of looters and their techniques, along with types of damage to prehistoric features and petroglyphs. Class time was also spent on working through the statutory regulations of the Archaeological Resources Protection Act, and how to frame field assessments within the stipulations of ARPA as it relates to criminal and civil penalties. Several cases studies of looting investigations were examined, and the use and value of site record data bases were discussed in developing looting chronologies and site risk assessments for development of monitoring plans. The field portion of the training involved attendees conducting damage assessments on a simulated archaeological site.

Participants in the training came from various institutions and organizations, including the Pueblos of Santa Clara and Laguna, the US. Air Force, PNM of New Mexico, and private CRM professionals.



Attendees at the 2019 JRI training on looting and vandalism recording archaeological site damage as part of their training.

Research Updates

Initial Results of Archaeological Survey of Gypsum Dune Field at Guadalupe Mountains National Park

Alexander Kurota¹, Robert Dello-Russo¹, and Julie McGilvray²

¹ – Office of Contract Archeology, University of New Mexico; ² – Guadalupe Mountains National Park

Guadalupe Mountains National Park (GUMO) in far West Texas comprises a rough and rugged landscape where archaeological field work comes with significant challenges. To date, archaeological research in this part of Texas has been limited. Early studies were completed in the area by Paul and Susanna Katz. Harry Shafer led a Texas Archeological Society (TAS) field school in the park in 1972. Beyond this mid-twentieth century research, little work has been done to better understand the landscape, settlement patterns, and site types in the park. However, GUMO is undertaking several new and continuing areas of work, including significant research into historic sites associated with the Apache Wars; ongoing research along the Butterfield Overland Mail Route Corridor; and research to gain a better understanding of the pre-contact environments along the west side of the park. The first phase of work along the west side of the park is summarized below and focuses on site types within the gypsum sand dunes. The park hopes to follow this initial project in the gypsum dunes with research expanding into the red quartzose dune fields (located to the east of and abutting the gypsum dune fields) and then to canyon sites along the western escarpment of the Guadalupe Mountain range (first identified by Shafer and TAS), which contain evidence of lengthy occupation.

In March of 2019, the OCA in conjunction with the researchers at GUMO and Tierra Vieja Consulting performed an archaeological sample survey of the parabolic gypsum dune field within GUMO. The project area is located on the west side of the Guadalupe Mountains in Hudspeth County, Texas. The gypsum dune field at GUMO is an area of approximately 2000 acres of parabolic dunes that are gradually migrating out of dry Paleolake King in an east/northeast direction (Figure 1).

The objectives of this project included evaluating the age of any archaeological sites encountered during the inventory and assessing what types of occupation they reflected. Another research goal was to assess whether the prehistoric sites were associated with “hearth mound” features - remnant dunes preserved with a cryptobiotic soil crust on the surface. Hearth mound features have been documented in detail within a gypsum dune field at White Sands National Monument in the Tularosa Basin of New Mexico.

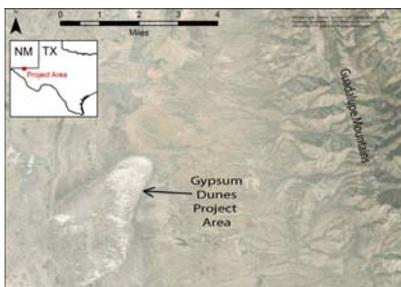


Figure 1. Project area map.
Source: Google Earth.



Figure 2. OCA field crew documenting sites in a dune field.



Figure 3. Flaked stone

(Continued on Page 5).

Kurota, et al, Continued.

The hearth mound sites at White Sands also revealed a specific pattern to their distribution referred to as a “horizontal stratigraphy model” (Kurota et al. 2012; 2013). This model assumes that, while crossing the Basin floor, prehistoric people always camped at or near the leading edge of the dune field. With the entire dune field constantly moving in a northeast direction, the camp site locations would also have moved in the same direction. This resulted in a pattern with the oldest sites having been located deep in the dune field (to the southwest) and the youngest having been established near the most recent leading edge (to the northeast). Because of the assumed similarities of the two gypsum dune fields, one research goal was to evaluate whether a similar horizontal stratigraphy model could be identified within the distribution of prehistoric sites at GUMO. After two field sessions in March, 33 sites have been documented, 31 of which are believed to be prehistoric camps and two are historic roads. The prehistoric sites consist of single or multiple thermal features associated with artifact scatters (Figure 2), although some sites revealed no features. Working together with geomorphologist Dr. David Rachal, OCA and GUMO researchers have learned that the gypsum dune area had experienced severe erosional effects that have completely stripped all of the thermal features of organic remains. Indeed, none of the 31 prehistoric sites thus far recorded had features retaining charcoal or other datable material. Loosely scattered fire-cracked limestone cobbles are what typically remained in the hearth features. As a result, dating the individual sites will have to rely solely on the association with diagnostic artifacts, such as ceramics and projectile points. Interestingly, only one site within the gypsum dune field contained ceramics while the rest consisted of flaked stone and ground stone scatters. This is very different than ceramic-heavy sites located with the red quartzose dune fields to the east of the gypsum fields. The occasional projectile points found at some of the sites indicate mostly Late Archaic or Middle Archaic periods of occupation. Common artifact assemblages consist of one or more projectile points, bifaces, utilized flakes and scrapers. Occasional tabular knives and chopping tools were also found. Such tools indicate a variety of activities including hunting, working with hard and soft materials and the cutting and processing of vegetal matter. The presence of cores and debitage also indicate lithic reduction and tool manufacturing activities (Figure 3). Aside from the camp sites, three sites associated with small natural water reservoirs have been recorded. These reservoirs likely would have filled with seasonal surface runoff. Prehistoric people would have been aware of these natural depressions and would have periodically visited them to access potable water. OCA researchers are now in the process of data analysis and report preparation. GUMO is planning to begin field work sessions in the red quartzose dunes in 2020 with a National Park Service.

Citations

Kurota, Alexander, F. Scott Worman, and Patrick Hogan

- 2012 *Hearth Mound Survey and Limited Excavations at White Sands National Monument, Otero and Doña Ana Counties, New Mexico*. OCA/UNM Report No. 185-1035. Office of Contract Archeology, University of New Mexico, Albuquerque.
- 2013 *New Model for Prehistoric Hearth Mounds Distribution at White Sands National Monument*. In *Advances in Jornada Mogollon Archaeology: Proceedings from the 17th Jornada Mogollon Conference*, edited by Todd L. VanPool, Elizabeth M. McCarthy, and Christine S. VanPool, pp. 95-112. El Paso Museum of Archaeology, TX.

(More Research Updates on Page 7)

5th Tularosa Basin Conference: research/public engagement

By David Greenwald

May 17, 18 and 19 brought a number of researchers together in Tularosa where papers were presented on topics of the history, archaeology, geology, geomorphology, ethnohistory, paleobotany, biology and symbolism of various resources and locations. Twenty presentations were made during two days at the Tularosa Community Center followed by a tour to Three Rivers Petroglyph Site and another to the Twin Kivas Site and Creekside Village.

Participants were led by Joan Price under special permit to the portion of Three Rivers that is located on State Lands where Joan shared some rarely visited Jornada Mogollon images. At the Twin Kivas Site, participants were shown both kiva depressions, the smaller of the two currently being tested and now confirmed to represent another great kiva in Tularosa Canyon. On the hike into Creekside Village, the tour group encountered Dr. Vance Holiday and Brandon Fennerty (Graduate Student) from the University of Arizona, who were engaged in their second season of documenting the floodplain stratigraphy of the Rio Tularosa. Dr. Holiday briefly explained his interests in studying the deposits to the group and then posed for the photo that includes Dr. Holiday (left), Dr. Jim Neely (front, who was his undergraduate advisor), Dave Greenwald (long-time acquaintance of Dr. Holiday), Dr. Dave Love (collaborator on geomorphological studies at White Sands), and Dr. Jon Sandor (graduate student with Dr. Holiday). Note the stratigraphy shown in the exposure next to the ladder. Much was discussed during the tour of Creekside Village, with alternate hypotheses and interpretations offered by some tour participants. Comments regarding the unique setting and resources contained within Tularosa Canyon were expressed by several of the participants. Truly, Tularosa Canyon has a story to tell, one that is only now beginning to reveal itself.



Photo by Maryann Wasiolek, 5-19-19: The Posse.

Research Updates, Continued.

Rock Art Academy, Symposiums and Graffiti **By Margaret Berrier**

There hasn't been as much report writing for me this winter or spring except for some minor editing for papers which will be published soon. Although I am still working on some rock art documentation I've been busier with a variety of other activities.

In February I was one of four instructors for the Texas Archaeological Society's Rock Art Academy at the El Paso Museum of Archaeology. The academy consisted of one day of lectures and hands on demonstrations at the museum and a second day spent exploring sites at Hueco Tanks State Park & Historic Site. The event was very popular and so there were 50 participants. This class was an introduction to rock art and hopefully will get more people participating in the much needed systematic, scientific documentation of rock art.

I have also been privileged to help out with a couple of other projects at the El Paso Museum of Archaeology. The museum has been having some great shows on different types of pottery. In January they opened a show on Salado ceramics and featured Allen Dart as one of their wonderful lecture series presenters in April. Allen used some of my photos of the collection in his talk. In April the museum opened "Ancient Borderland: The Jornada Mogollon Region". One aspect of the exhibit was photos of rock art from the region including several I took. The museum is contemplating more shows along this line which I hope to which I hope I can make contributions.

March and April were traveling months for me. In late March I traveled to Flagstaff, Arizona so she could learn about the area where I will lead a field trip to for the 2019 American Rock Art Association's 2019 Symposium.

In early April represented JRI as a speaker at the joint meeting of the Torrance County Archaeological Society and Manzano Mountain Art Council. I spoke about my love of petroglyphs and art and how it inspired me to start documenting rock art. A few weeks later I was off to Albuquerque to give my first talk at a Society for American Archaeology (SAA) in Albuquerque. My subject was "Ceremonial Depictions of Bighorn Sheep Anthropomorphs in the Jornada Mogollon."

May activities have not been as much fun as the rest of the spring. New Mexico news recently contained information about graffiti on the Lincoln National Forest near Chloride.

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Berrier, Continued.

I worked with the new LNF archaeologist Belinda Mollard to determine that the graffiti at the rock art was not new (although there was new spray paint nearby in the canyon) and provided a report and photos I wrote in 2012. Belinda is hoping to have a rock art documentation of the site sometime in the near future. I also learned about graffiti in the Organ Mountains reported by the students at NMSU who were recording the archaeology in that area as part of a BLM project. The BLM will receive copies of the documentation and I hope to help with a more complete documentation of the rock art in the shelter. Still more bad news came recently when the BLM reported spray paint at Pony Hills. One of the challenges to reporting and “restoring” damaged sites is the need to have complete documentation of the sites!

To end on a more positive note, I have really enjoyed acting as chairperson for the American Rock Art Association's Awards Committee. One new award they are providing this year are scholarships for Master's and Ph'D students. Maybe JRI can find some candidates and help them to apply for next year or work with them on projects. The photos below are from Alamo Mountain.



In the News.

Extracted from: University College London. "Abrupt climate change drove early South American population decline." ScienceDaily. ScienceDaily, 9 May 2019.
<www.sciencedaily.com/releases/2019/05/190509080039.htm>

Abrupt climate change some 8,000 years ago led to a dramatic decline in early South American populations, suggests new research.

Archaeologists working in South America have broadly known that some 8,200 years ago, inhabited sites in various places across the continent were suddenly abandoned. In this new study, archaeologists examined data from nearly 1,400 sites consisting of more than 5,000 radiocarbon dates to understand how population changed over time, and cross-referenced this information with climate data.

Researchers Dr Philip Riris and Dr. Arroyo-Kalin (UCL Institute of Archaeology) studied ancient records of rainfall such as marine sediments for evidence of exceptional climate events. Within windows of 100 years, they compared the Middle Holocene to the prevalent patterns before and after 8,200 years ago. They wanted to connect the dots between disparate records that span the Northern Andes, through the Amazon, to the southern tip of Patagonia and all areas in between.

Unpredictable levels of rainfall appear to have had a negative impact on pre-Columbian populations until 6,000 years ago, after which recovery is evident. This recovery appears to correlate with cultural practices surrounding tropical plant management and early crop cultivation, possibly acting as buffers when wild resources were less predictable.

The study focused on the transition to the Middle Holocene (itself spanning 8,200 and 4,200 years ago), a period of particularly profound change when hunter-gatherer populations were already experimenting with different domestic plants and forming new cultural habits to suit both landscape and climate change.

While the research shows that there was a significant disruption to population, the study highlights that indigenous people of South America were thriving before and after the middle Holocene.

Abandonment of certain regions and the need to adapt quickly to new circumstances may have promoted the exploration of alternative strategies and new forms of subsistence, including the early adoption of low scale cultivation of domestic plants.

The authors believe that the research offers crucial historical context on how ancient indigenous South American populations dealt with climate change.

Dr Arroyo-Kalin concluded: "Our study brings a demographic dimension to bear on understandings of the effects of past climate change, and the challenges that were faced by indigenous South Americans in different places. This understanding gauges the resilience of past small-scale productive systems and can potentially help shape future strategies for communities in the present."