
PERMIAN QUARTERLY

Permian Basin Programmatic Agreement Quarterly Newsletter

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Cactus pads (nopales) and abundant fruits (tunas) are pictured. Both the pads and fruits are edible and readily available today in grocery stores that have ingredients for Mexican food dishes. Cactus and other desert plants were used in the prehistoric past for food, medicine, fiber, crafts, and building material. A new book describes the uses of plants found in archeological contexts within the Carlsbad Field Office. Read more about it inside this newsletter.

Introduction to the Permian Basin Programmatic Agreement (PA)

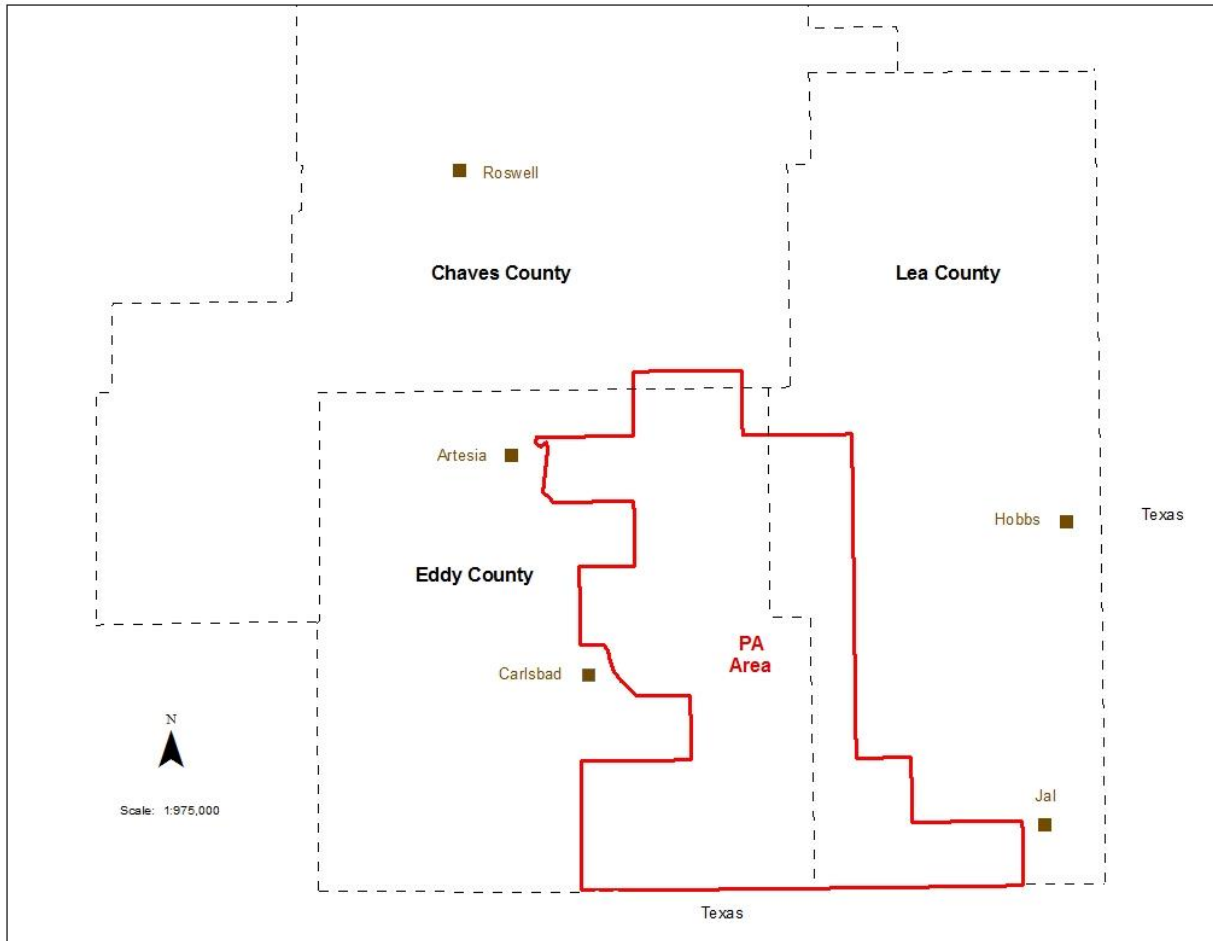


Figure 1. Map showing the Permian Basin PA Area.

The PA is an alternate form of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, that is offered to the oil and gas industry, potash mining companies, and for other industrial projects located in southeastern New Mexico. The PA can be used for federal projects located on Bureau of Land Management (BLM) land or BLM sponsored projects located on private property. Originally begun as a Memorandum of Agreement (MOA), it was extended for a period of three years in April 2013 as a Programmatic Agreement (PA) and the PA was further extended for a period of 10 years beginning in May 2016. The PA area is located partially in Chaves, Eddy, and Lea counties. Proponents of projects within the PA area may contribute to a dedicated archeological research fund in lieu of contracting for project specific archeological surveys, provided their proposed projects avoid recorded archeological sites. This dedicated fund is then used to study the archeology and history of southeastern New Mexico.

Current PA News

New Publication Describes Plant Use in Southeastern New Mexico

In the press and in popular imagination archeology is often associated with finds of colorful exotic artifacts, such as ancient jewelry or intricately carved stones, but in reality the exciting discoveries being made today often come in drab and dull forms. In particular charred remains of plant material can be the portals to past times that were filled with color and life and these bits of charcoal can also be road maps showing where people went and how they interacted with their environments.



Figure 2 (left). A feature at prehistoric site LA 159158 is filled with charred plant remains. The north arrow is marked in centimeters.

The charred remains are separated from the soil matrix through a process called flotation, where samples are submerged in agitated water within a container. The lighter charred plant remains, called macrofloral samples, float to the top and are collected. Macrofloral samples are usually identified in laboratories specializing in this service.

Figure 3 (right). Macrofloral and heavy fraction samples wrapped in temporary cheesecloth and wire cloth containers dry on a line at Sitting Bull Falls. These samples were processed by local school children at an earth day event. Sitting Bull Falls is a popular scenic attraction in Eddy County, New Mexico.



Through the years a number of macrofloral samples, as well as related plant phytolith, starch, and pollen samples requiring microscopic identification, have been recovered from prehistoric sites within the Carlsbad Field Office (CFO) boundaries. These samples were processed as component parts of excavations undertaken for the mitigation of sites involved in oil and gas or construction projects. A major addition to this inventory of plant evidence was the completion in 2013 of a project to sample 500 features located within the Permian Basin PA area. These samples were processed for radiocarbon dates, as well as for the macrofloral, phytolith and starch identifications of the plants represented in them.

In order to make this accumulated information available to researchers and the general public BPA Project 3 was undertaken through the Permian Basin PA, with the objective of producing a reference book describing plant utilization by the prehistoric populations living in what is now southeastern New Mexico. The culmination of BPA Project Number 3 is a new publication entitled *Plant Utilization in Southeastern New Mexico: Botany, Ethnobotany, and Archaeology*, by William Whitehead and Conor Flynn

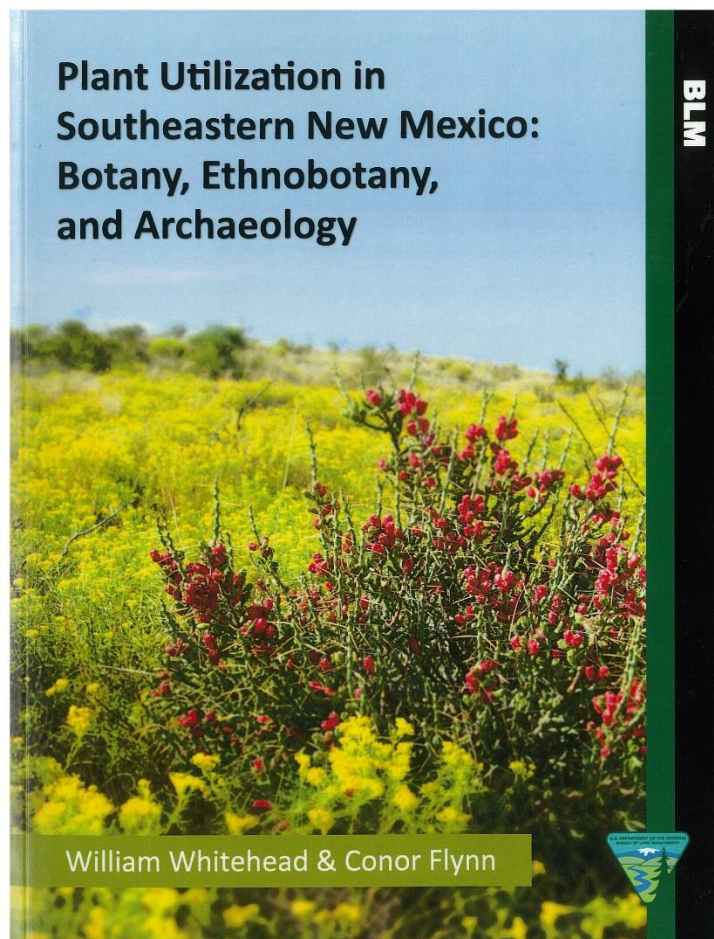


Figure 4. The cover of *Plant Utilization in Southeastern New Mexico: Botany, Ethnobotany, and Archaeology*.

The book is profusely illustrated with color photographs of 172 identified plants along with maps showing the general distribution of the plants within the CFO boundaries. The text describes the uses of the plants, primarily based upon ethnographic and historic accounts, the time of the year that the plants mature, or the time that the fruit ripens or the probable time of the year each plant was harvested and/or

used. This is important information for making inferences about the plant remains found in archeological contexts.

The CFO encompasses portions of the High Plains and the Basin and Range Province physiographic regions and includes the northern end of the Chihuahuan desert, the largest desert in North America. These differences in topography are expressed also in the types of plants growing in different parts of the field office. The different plants in turn influenced the ways, and in which seasons, people used the plants for daily life. Handy appendices summarize the distribution of plants by ecoregion, the use of plants by season (with specific uses for each plant part) and a summary appendix listing the uses for each plant, with references to the origin of the information.

Additional context material is provided by an illustrated discussion of the archeology of the CFO in general and specifically about the Apache occupation of the region. These sections of the book combine information about the plants with the ways in which people used them for food, medicine, fiber, crafts, and building materials. The Apache section includes quotes and observations from historic and contemporary speakers that express their philosophies for using and conserving the plants that were important in their lives.

Beyond the goal of putting plant use in context, however, the book also provides a handy guide for the field identification of common trees, shrubs, forbs, and grasses.

A limited number of printed copies of the *Plant Utilization in Southeastern New Mexico: Botany, Ethnobotany, and Archaeology* are available. Interested readers can obtain a copy at the Carlsbad Field Office, 620 East Greene Street, in Carlsbad, or by sending me (cstein@blm.gov) a U.S. Postal Service mailing address. An unlimited number of electronic versions of the book are available in PDF format. These PDF versions are too large to send through the BLM e-mail system, but interested readers can send me (cstein@blm.gov) a U.S. Postal Service mailing address to receive a copy on a cd.

Other News from the Permian Basin

PA Reports are Available at tDAR

The articles in the *Permian Quarterly* are necessarily brief. Readers interested in more detail about a specific topic or a more in-depth discussion of the archeology of southeastern New Mexico can download reports from the Digital Archeological Record (www.tDAR.org). These are free of charge and most reports are available to anyone who signs up, however, some are restricted to qualified researchers. A list of reports produced for the PA and its predecessor, the Permian Basin Memorandum of Agreement (MOA) and available on tDAR, is listed below as a service for readers of the *Permian Quarterly*.

Permian Basin Programmatic Agreement Reports

BPA #1 - *Selection of Sites to Address Questions in the Southeastern New Mexico Regional Research Design: A Landscape Approach*. SWCA, 2015, tDAR Number 398963

BPA #2 - *An Assessment of Transect Recording Unit Survey and Subsurface Testing Methods at Four Sites in the Permian Basin, New Mexico*. SRI, 2015, tDAR Number 399783

BPA #3 - *Plant Utilization in Southeastern New Mexico: Botany, Ethnobotany, and Archaeology*. SWCA, 2016, tDAR Number 397836

BPA #4 - *The Merchant Site: A Late Prehistoric Ochoa Phase Settlement in Southeastern New Mexico*. Versar, Inc., 2016, tDAR Number 427192

The Merchant Site: A 14th Century Village in Southeastern New Mexico. Versar, Inc., 2016, tDAR Number 427193 (a public report)

BPA # 5 – *Permian Basin Research Design 2016 – 2026 (2 Volumes)*. SWCA, 2016, tDAR Number 427268

Permian Basin Memorandum of Agreement Reports

Task Order 1 – *Synthesis of Excavation Data for the Permian Basin MOA*. SWCA, 2009, tDAR Number 378484

Task Order 2 - *A Class III Cultural Resource Survey for the Permian Basin MOA Area, Chaves and Eddy Counties, New Mexico*. Lone Mountain Archaeological Services, Inc., 2010, tDAR Number 378468

Task Order 5 - *The Laguna Plata Site Revisited: Current Testing and Analysis of New and Existing Assemblages at LA 5148, Lea County*. New Mexico. TRC Environmental, Inc., 2010, tDAR Number 378476

Task Order 6 – *The Boot Hill Site (LA 32229): An Oasis in the Desert, Eddy County, New Mexico*. TRC Environmental, Inc., 2011, tDAR Number 378477

Task Order 7 - *A Class III Transect Recording Unit Survey and Geophysical Prospection at the Burro Tanks Site (LA 32227)*. Chaves County, New Mexico. SWCA, 2011, tDAR Number 378478

Task Order 10 - *Macrofloral, Phytolith, and Starch Analyses, and AMS Radiocarbon Dating for the Permian Basin MOA, New Mexico*. Lone Mountain Archaeological Services, Inc., 2013, tDAR Number 391881

Task Order 11 – *The Geologic and Archaeological Contexts for Lithic Resource Acquisition in Southeastern New Mexico*. Statistical Research Inc., 2013, tDAR Number 391880

Rocks and Ancient People in Southeastern New Mexico. Statistical Research Inc., 2013, tDAR Number 391882 (a public report)

Task Order 12 – *Archaeological Prospection for Ring-Midden Features in Southeastern New Mexico Using Lidar Data: An Experimental Study*. Statistical Research Inc., 2015, tDAR Number 399004

An Experimental Project to Conduct Digital Survey for Ring-Midden Features Using Lidar Data. Statistical Research Inc., 2015, tDAR Number 399006 (a public report)

Carlsbad Field Office Base Map is Available On-Line

A Carlsbad Field Office base map with multiple layers showing different features present within the field office boundaries is available at https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html. This Geographic Information System (GIS) map allows the user to turn on and off different layers showing such things as the transportation network, recreation areas, hydrology, geology, caliche pit

locations, and much more useful information. Archeological sites are not indicated, but locations surveyed for archeological sites are shown. The map requires an ArcReader installation in order to work. ArcReader is a free program from ESRI (www.esri.com).

Newsletter Contact Information

Questions or comments about this newsletter or the Permian Basin PA may be directed to Martin Stein, Permian Basin PA Coordinator, BLM Carlsbad Field Office, 620 East Greene Street, Carlsbad, New Mexico 88220. Phone: (575) 234-5967; E-mail address: cstein@blm.gov. Unless otherwise attributed all newsletter content was written by Martin Stein.