

# News NMAC

NEWSLETTER  
OF THE  
NEW MEXICO  
ARCHEOLOGICAL COUNCIL

2002 Number 1

January 2002

## **NMAC Grant Program for 2002 - Proposals Accepted Thru Mar. 15.**

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## **Strontium Isotopes Reveal Sources of Architectural Timber in Chaco Canyon, New Mexico**

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## **Origins of Private-Sector CRM**

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## **ARMS Regulation Amendments Proposed**

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## **Archaeological Collections Overwhelming Repositories**

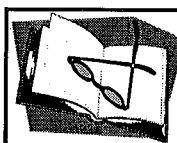
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### **Book Reviews**

- **Casas Grandes Research Enters  
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**Last date for contributions to  
NewsMAC 2002 (2) will be  
March 14, 2002.**



## **President's Report**

Mike Bremer

I hope this issue of *NewsMac* finds everyone better off than they were a year ago even though it was a tough one for the Country. Despite the tragedy and ongoing conflict in the Country it was a good year for the New Mexico Archaeological Council (NMAC). We managed to host several workshops and symposia, hold quarterly meetings, participate in Heritage Preservation Week at the Archaeology Fair, and symposia on Fire Effects on Cultural Resources, and the Past as Present. It was a good year and is very much a credit to the officers of the organization.

So, another year of *NewsMAC* fires up and we look forward to keeping the professional and avocational archaeological community informed on the nature of Archaeology and Historic Preservation in New Mexico. We also start off with a new executive organization and I would like to thank all those who showed enough confidence in me to elect me as the President of the NMAC. I would also like to start out by thanking the outgoing officers:

- We cannot possibly say enough good things about all that Brad Vierra has done for Council in the two years he devoted to it. Brad has done an outstanding job as President of the Council and the reputation he established for the position will be difficult to live up to. Thanks for a job extremely well done.
- Let us not forget the great contributions of John Roney who as vice-president coordinated the workshops and acted as the next in line when things got rough. We all greatly appreciate John's hard work.

(Continued on page 3)



## Calendar

### NMAC

- Jan 24  
Albuquerque § **Genizaro Settlements: Legacy of the Past** – lecture by Mr. Moisés Gonzales, Assistant Planning Director, Rio Arriba County, and Carnuel Land Grant heir. At the National Hispanic Center.
- Feb 22  
Albuquerque § **San Jose de las Huertas: A Late 18th Century Buffer Community** – lecture by Dr. Nan Rothschild, Columbia University. At the National Hispanic Cultural Center.
- Mar 15 **NMAC 2002 Grant Requests** must be received in the NMAC P.O. Box. Info: see page 3.
- Mar 21  
Santa Fe § **Beyond Biscuitwares: New Perspectives on the Pueblo Archaeology of the Rio Chama Valley** – lecture by Dr. Kurt Anschutz, Program Director, Rio Grande Foundation for Communities and Cultural Landscapes. At the Forum, College of Santa Fe.
- Apr 15 **NMAC 2002 Grant Awards** will be announced.
- Apr 18  
Santa Fe § **Pueblo Perspectives on History and Preservation in the Homeland** – lecture by Mr. Herman Agoyo, Tribal Council Member and Director, San Juan Pueblo Realty Office. At the Forum, College of Santa Fe.

§ Note: Past As Present series lecture. All lectures begin at 7:00; refreshments follow. \$5.00 at the door. Info: NM/HPD (505) 827-6320; NewsMAC 2001(4) pg. 15.

### Other

- Jan 10-12  
Mobile AL **SHA 2002 Conference on Historical and Underwater Archaeology** – at Adam's Mark Hotel. Theme is Colonial Origins. Info: < [http://www.sha.org/Meetings/sha2002/sha\\_2002\\_front.htm](http://www.sha.org/Meetings/sha2002/sha_2002_front.htm) >.
- Jan 10-12  
Tucson AZ **8th Biennial Southwest Symposium** – in the Leo Rich Theater, downtown. Reception Friday evening at the AZ State Museum on the Univ. of Arizona campus. Several field trips on Sunday. The final program is online at: < [w3.arizona.edu/~anthro/2002Symposium/](http://w3.arizona.edu/~anthro/2002Symposium/) >.
- January 11  
Roswell **T-PAS Meeting** – 9:00 am at Nuthin' Fancy.
- Feb 14-19  
Boston MA **AAAS 168th Annual Meeting**. Info: < [www.aaas.org](http://www.aaas.org) >.
- Mar 6-9  
Stors CT **Society of Ethnobiology 25th Annual Meeting**. Info: Luci Fernandez (860) 486-5248; < [fernande@neca.com](mailto:fernande@neca.com) >.
- Mar 20-24  
Denver CO **Society for American Archaeology 67th Annual Meeting**. Info: < [meetings@saa.org](mailto:meetings@saa.org) >.
- Apr 5-6  
Albuquerque **Eleventh Albuquerque Antiquarian Book Fair** – benefit for the Maxwell Museum archives & library. Info: Alan Shalette (505) 291-9653 or < [AlShal@aol.com](mailto:AlShal@aol.com) >; see < [www.unm.edu/~maxwell/aabf.html](http://www.unm.edu/~maxwell/aabf.html) >.
- Apr 11-13  
Las Cruces **Historical Society of NM-Arizona Historical Society Joint Conference** – at the Las Cruces Hilton. Info: Annual Conference Program, P. O. Box 1912, Santa Fe, NM 87504; < [www.hsnm.org](http://www.hsnm.org) >.
- May 3-5  
Farmington **Archaeological Society of NM Annual Meeting** – at San Juan College, hosted by the San Juan Archaeological Society. Info: Dr. Joe Simmons, Pres., SJAS, P.O. Box 118, Flora Vista NM 87415; (505) 326-0193.
- May 24-27  
Dubois WY **American Rock Art Research Association 29th Annual Conference**. Info: < [www.arara.org](http://www.arara.org) >, or contact ARARA, AZ State Museum, University of Arizona, Tucson, AZ 85721-0026, Attn: Sharon Urban.

## NEW MEXICO ARCHEOLOGICAL COUNCIL

P.O. Box 25691  
Albuquerque NM 87125

### Web Site

< [HTTP://WWW.UNM.EDU/~VANPOOL/NMAC/NMAC.HTML](http://www.unm.edu/~VANPOOL/NMAC/NMAC.HTML) >

### NewsGroup

< [NMAC-L@LINUX08.UNM.EDU](mailto:NMAC-L@LINUX08.UNM.EDU) >

### 2002 OFFICERS

**President – MIKE BREMER**  
(505) 438-7846

< [MBREMER@FS.FED.US](mailto:MBREMER@FS.FED.US) >

**President-elect – LARRY BAKER**  
(505) 632-2013

< [SALMONRUIN@OUTERBOUNDS.NET](mailto:SALMONRUIN@OUTERBOUNDS.NET) >

**Vice President – JOHN TORRES**  
(505) 327-6115

< [JOHN@LITHICRESEARCH.COM](mailto:JOHN@LITHICRESEARCH.COM) >

**Treasurer – BILL DOLEMAN**  
(505) 277-5853

< [WDOLEMAN@UNM.EDU](mailto:WDOLEMAN@UNM.EDU) >

**Secretary – KATHY ROXLAU**  
(505) 247-4933

< [ROXLAUK@TTNUS.COM](mailto:ROXLAUK@TTNUS.COM) >

**Editor – ALAN SHALETTE**  
(505) 291-9653

< [ALSHAL@AOL.COM](mailto:ALSHAL@AOL.COM) >

### COMMITTEES

**Education – CHUCK HANNAFORD**  
(505) 827-6343

< [CHANNAFORD@LVR.STATE.NM.US](mailto:CHANNAFORD@LVR.STATE.NM.US) >

**Grants – JUNE-EL PIPER**  
(505) 883-6875

< [MJPIPER@UNM.EDU](mailto:MJPIPER@UNM.EDU) >

**Legislative – LYNNE SEBASTIAN**  
(505) 897-7241

< [LSEBASTIAN@SRICRM.COM](mailto:LSEBASTIAN@SRICRM.COM) >

**Publications – WOLKY TOLL**  
(505) 827-6343

< [WTOLL@LVR.STATE.NM.US](mailto:WTOLL@LVR.STATE.NM.US) >

## President's Report

*(Continued from page 1)*

- One of the too frequently unsung positions in any organization is that of the Secretary and true to the position Lou Haecker accomplished many wonderful things from organizing the glut of Council records to keeping us all up-to-date with notes from meetings. She was also responsible for making sure we had coffee and treats at meetings. Thanks for all your hard work Lou.

There are a number of other positions to be held by individuals in the coming year who were asked by the Council through election or request to remain in their existing positions. These include Bill Doleman as Treasurer and Alan Shalette as editor and various committee chairs including Wolky Toll (Publications), June-el Piper (Grants), Lynne Sebastian (Legislative), and Chuck Hannaford (Education). Finally, I want to thank Todd VanPool for keeping the webpage going. I want to sing their praises also and let them know how much the Council appreciates their contributions. I cannot adequately express how much I appreciate their decision to either run again or remain as committee chair. I would also like to thank John Torres for running as Vice-president elect and Kathy Roxlau as Secretary. Finally, Larry Baker deserves special recognition for agreeing to be President-elect for 2003.

After greetings and thanks it seems appropriate to give some direction for the upcoming year. When Brad asked me to run for President-elect (unopposed, I might add, which I do not necessarily consider an overwhelming mandate) I considered what my goals would be for the organization if I were elected. My first goal was to make sure that NMAC remained a viable organization for the future and that it continued to meet the guidance set in the bylaws of the organization. I have always felt strongly that NMAC serves an advocacy and educational role in historic preservation in New Mexico. Of all the things we do as an organization it is our responsibility to see that the historic record is preserved for the future and that future generations understand the value of preserving that record. To arrive at this goal I think there are

a number of things we need to do in the coming year.

- Continue to sponsor workshops and symposia that are clearly relevant to professionals and avocationalists. For this coming year I would like to see additional workshops on Mimbres, southeastern New Mexico and northwestern New Mexico.
- Work with teachers and other educators to ensure a historic preservation message is included in school curricula.
- Continue monitoring legislation and regulation on a State and National level through the legislative committee.
- Continue participating in Heritage Preservation Week and the Archaeology Fair.
- Increase membership among all professional and avocational groups, including students, with an active preservation interest.
- Increase interest and participation in archaeology among children and young adults.
- Sponsor a conference on a relevant archaeological topic. One I would like to suggest for this year is a three-day conference on the Archaeology of the Gallina, which would result in the publication of up-to-date references for the area.

While this may sound similar to the agenda of past presidents I would like to focus on a couple of them. It is clear from the membership roles of NMAC that our membership is aging. We have not been that successful at recruiting new and young members of the profession. I am not sure what the reasons are although I suspect that it is a reflection of a general decline in interest in archaeology as a profession compared to other more fruitful pursuits. I would like the Council to explore why this is so and see if there are ways to increase participation in the Council. If we were to count the number of student members would we have a significant number? I think not and I do know that students have not traditionally joined the Council. Is there something we can do to change that?

I am also concerned by the lack of involvement

## President's Report

of the professional archaeological community in NMAC. There seems to be a core cadre of individuals who participate in NMAC events statewide and the larger body of members participates as it suits their priorities. I would like each member to consider where NMAC fits in her or his professional priorities.

The work of NMAC is accomplished by volunteers drawn from its membership. If you feel that NMAC is a strong and vital organization, volunteer to do something for it: add your voice in direction-setting, and pitch in to share the workload. Chuck and Lynne can always use more input for the Education and Legislative Committees. John Torres as incoming Vice-president can always use assistance organizing workshops and other events.

The organization has done a lot in the past to ensure the profession's longevity in the state. NMAC can argue at the state and national level for issues of direct relevance to the careers of all archaeologists in the state. It also argues strongly for preservation of a nonrenewable resource and legislation protecting that resource.

NMAC needs to take a high priority in the minds of practicing archaeologists in the state. Ideally, every professional and avocational archaeologist who subscribes to the ethics of the organization should be a member.

I strongly encourage every active member of NMAC to solicit three new members in the next year. I also encourage members to more actively participate in the Council and take an interest in the mission and activities of the Council. If you cannot participate in the field or workshops then submit something to *NewsMAC*.

I would also strongly encourage the membership to run for office on the Council. In the last several years there has been declining interest in participating in the executive realm of the Council. Because the Executive Committee enacts or tracks many preservation issues in New Mexico that is the single best place to be when it comes to advocating the interests of historic preservation in the state.

I wish you the best in the coming year. If you have issues or concerns not expressed above feel free to contact me or any other member of the Executive committee. You will find contact information either in *NewsMAC* or on our Webpage.

## NMAC Grant Program for 2002

June-el Piper, Chair

NMAC's Executive Committee is pleased to announce the third year of the Grant Program for out-of-pocket research, preservation, travel, education, or publication expenses directly related to the mission and purposes of the Council (see back page of *NewsMAC*).

The NMAC Grant Committee will review all applications received on or before March 15, 2002, and notify winners by April 15, 2002. Grants are not limited to NMAC members.

Up to \$1,000 from NMAC-allocated funds plus other contributions to the Grant Fund will be available for grants this year. Individual grants may be made for all or a portion of the total amount available.

Applications approved and amounts awarded will be at the sole discretion of the NMAC Grant Committee.

Application letters should be on letterhead; student applications should be endorsed by a faculty member.

Send requests and supporting documents (brief vita, authorization of landowner/interested parties, etc.) to:

NMAC Grant Committee

P.O. Box 25691

Albuquerque, NM 87125.

Conditions of the awards include: (1) acknowledgment of NMAC in any paper or publication resulting from the project for which funds were awarded, and (2) preparation of a brief project summary for publication in *NewsMAC* upon project completion.

Conditions for disbursement of the funds will be determined at the time of the award.

For further information, contact me at (505) 883-6875 or < mjpipper@unm.edu >.





## NewsNotes

### In Memoriam

**Kathryn E. "Kit" Sargeant**

**(8/17/26-12/24/01)**

### Local Leader in NM Preservation

*[This obituary was composed from various sources without authoritative review. Ed.]*

Kit Sargeant has succumbed to injuries received when hit by a car on Christmas Eve.

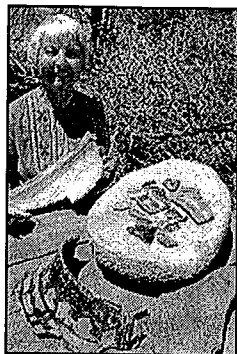
A tireless promoter of local preservation, Kit is the only landowner in NM, to date, to have received NM state tax credits for archaeological preservation on private property.

She and her husband Arnold moved to the village of Los Ranchos de Albuquerque in 1976 to property known to have early Pueblo and Spanish Colonial remains. With a BS in Library Science and English (1948), an MA in Anthropology (1973), and graduate studies in anthropology (1976-80), Kit wrote the nomination listing for the Chamisal site, LA 22765 on the NM State Register of Cultural Properties in 1980.

Kit undertook the Chamisal Archaeological Project with support from the Maxwell Museum of Anthropology and the Village of Los Ranchos. Graduate students from UNM's Anthropology Dept. were employed to do excavation work. An Archaic Period site under the other remains was uncovered by later work.

In 1982, Kit teamed up with Mary Davis to conduct an archaeological survey of Los Ranchos and in 1983, the North Valley Oral History Project was born, funded by the Village of Los Ranchos and the Albuquerque Museum. The survey results, now housed at the UNM library, led to publication of *Shining River Precious Land, An Oral History of Albuquerque's North Valley* by Kathryn Sargeant and Mary Davis (Albuquerque Museum, 1986).

Among her most recent activities in local preservation in the 1990's were her direction of excavations at the Los Ranchos Plaza, and sponsorship of a local ordinance calling for archaeological surveys on private property in the village.



## Wildfires and Cultural Resources Conference

Brad Vierra

NMAC's conference on "Wildfires and Cultural Resources" was a great success. It was held at the James Little Theatre in Santa Fe, with approximately 120 people attending. Ticket and book sales at the conference amounted to about \$650. Introductory statements were made by myself for NMAC, Dennis Martinez (Department of Energy), Dennis Vasquez (Bandelier National Monument) and Joseph Meade (US Forest Service).

The conference was separated into two sessions: Wildfire Management: Suppression and Rehabilitation and Wildfire Research: Long-Term Effects on Cultural Resources. Mike Bremer chaired the first session and I chaired the second session.

Overall, 20 papers were presented at the conference, which ran from 9:00 am to about 6:00 pm. These were an excellent set of papers. They provided information that ranged from wildfire management issues, to the effects of wildfires on sites in the Jemez Mountains, Mesa Verde National Monument and the Pumpkin Fire in Arizona. The research session discussed a variety of issues relating to the effects of fire on historic and lithic artifacts, to homestead and Manhattan Project sites, to the Dome Fire Archaeological Project.

Mike and I want to thank everyone who helped with the conference

### Who's My Daddy? Who's My Mommy? Origins of Private-Sector CRM

David A. Phillips, Jr., RPA

*A while back, I polled ACRA-L subscribers for information on the origins of private, for-profit CRM in the U.S.. While I didn't get information for every state, what I did get paints a fairly good picture of the origins and spread of private-sector CRM.*

After being asked by Bill Doelle to co-author a paper on the growth of private, for-profit CRM in the Southwest, I became curious to know whether that field began in our region or somewhere else. In March 2001 I began e-mailing queries to ACRA-L, the list server for the American Cultural Resources Association. A number of ACRA-L subscribers responded with information based on their memories of the start of the field. Many of the following

*(Continued on page 24)*



## Current Research

### Request for Assistance *Seeking Knobby Pots*

Lisa Huckell <lhuckell@unm.edu>

As part of the research for a paper to be presented at the Society of American Archaeology meeting in 2002, I am seeking examples of a particular ceramic vessel form that has been suggested to be an effigy of the spiny fruit capsule produced by jimson weed (*Datura* spp.). The psychotropic qualities of the plant are well-known, with the North American ethnographic record providing ample evidence of the exploitation of the plant by many societies for a variety of purposes. The prehistoric Paleo ethnobotanical record, however, is surprisingly modest, and by itself suggests limited use. If these vessels are indeed related to the use of *datura*, their distribution suggests a very different pattern of exploitation within a much greater geographic and temporal range. Records I've located thus far indicate that these vessels have been found throughout the Southwest from central Utah to Chihuahua, and are present in western and central Mexico as well.

Vessel morphology varies somewhat, as they may be bowls or jars. A number are small enough to be considered miniatures. Two examples of beads are also known. The common feature is the presence of variable quantities of conical "tubercles" that are applied on the vessel exterior surface. Coverage varies from nearly total and densely packed to minimal with widely spaced single or double horizontal rows placed near the rim. The majority of the pots are plain-ware that lack helpful type names. Usually the word "pot" is preceded by a descriptor such as bumpy, knobby, nubby, spiny, *datura*, armadillo, hobnail or bossed. A few have received more specific type names: Sunset Applique (Sinagua) and (my personal favorite) Alma Knobby (Mogollon). The linkage between the tuberculate pots and *datura*

fruits was first proposed by Litzinger (1979), who illustrates several vessels. Additional good examples are provided by Haury (1985:Fig. 31-b), Brew (1946:Fig. 99-n), Bradfield (1929:Fig. 270), Cosgrove and Cosgrove (1932:Plate 88-h), Gladwin et al. (1937:Plate 137a-c), and Fryman (1990:Fig. 16.11). A modern interpretation made by Mike Yeatts is shown in the accompanying illustration.

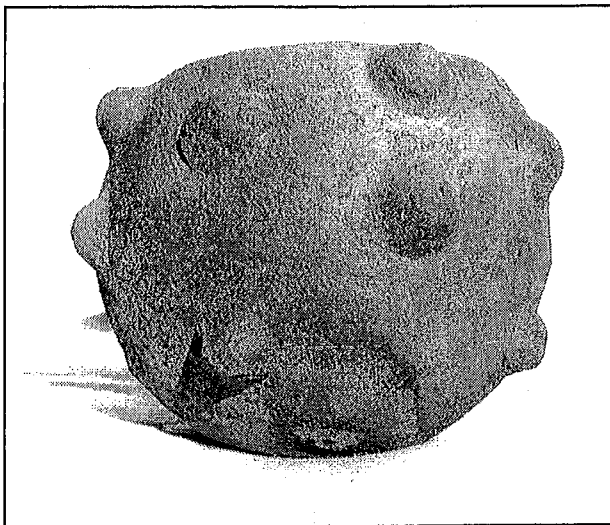
My current objective is to locate and document as many examples of this vessel type as possible with the ultimate goal of preparing a synthetic overview of prehistoric *datura* use in western North America. I am interested in developing a data base that will permit me to investigate spatial and temporal distributions, style variants, gender associations, intrasite distributions, and more. I'm looking for sherds as well as vessels. I'm making visits to museums with good collections of the pots, and have begun a literature search, a daunting

task. In hopes of making a dent in the vast realm of gray literature and unpublished manuscripts, I'm asking Newsletter readers for help. If you have come across knobby pots during ceramic analyses, I would really like to include your work in this study. Any references, collections, or other leads will also be most welcome. Based on what I've already found, it looks like a fascinating story is waiting to be told, guaran-

teeing that the project will continue long after the SAA presentation. All comments, suggestions, and information will be greatly appreciated. I can be contacted by email at <lhuckell@unm.edu> and by snail mail at the Maxwell Museum of Anthropology, University of New Mexico, Albuquerque, NM, 87131-1201.

#### References:

- Brew, J. O. 1946. *Archaeology of Alkali Ridge, Southeastern Utah*. Papers of the Peabody Museum of American Archaeology and Ethnology 21. Harvard University, Cambridge.
- Bradfield, W. 1929. *Cameron Creek Village*. School of American Research, Santa Fe.



## Current Research

- Cosgrove, H. S., and C. B. Cosgrove. 1932. *The Swarts Ruin*. Papers of the Peabody Museum of American Archaeology and Ethnology 15(1). Harvard University, Cambridge.
- Fryman, L. R. 1990. "Worked Sherd and Miscellaneous Ceramic Artifacts." In *Archaeology of the Ak-Chin Indian Community West Side Farms Project: Material Culture and Human Remains*, edited by R. E. Gasser, C. K. Robinson and C. D. Breternitz, pp. 16.1-16.23. Soil Systems Publications in Archaeology 9(4), Phoenix.
- Gladwin, H. S., E. W. Haury, E. B. Sayles and N. Gladwin. 1965. *Excavations at Snaketown: Material Culture*. (Reprint of 1938 Gila Pueblo Medallion Papers No. XXV, Globe, Arizona). University of Arizona Press, Tucson.
- Haury, E. W. 1985. *Mogollon Culture in the Forest-dale Valley, East-Central Arizona*. University of Arizona Press, Tucson.
- Litzinger, W. J. 1979. "Ceramic evidence for the prehistoric use of Datura in Mexico and the Southwestern United States." *The Kiva* 44(2-3):145-158.

### **Highways as Archaeology and Road Map Madness**

David A. Phillips, Jr.

By 1897 an automobile was putting its way down the streets of Albuquerque. In 1905 the governor's annual report reported a new law "for the building of a public road from the northern boundary of the Territory to the southern, to be known as 'El Camino Real.'" Still, for many years automobiles were primarily a curiosity; fewer than 1,000 were present in the territory before 1913. In that year that Henry Ford revolutionized the industry with the first assembly line. In the same year, the first coast-to-coast highway – the Lincoln Highway – was designated by a private organization. By 1925 named roads were no longer practical and highway officials created the current system of highway numbers. By the 1910s and 1920s, in other words, motor highways had become "important," the way the Keeper of the Register might use that word.

Until the past decade, though, no one seems to have considered abandoned road segments as archaeology – they were background noise. Today, consultants who encounter an abandoned motor

highway are well advised to record it as a site, including photography and a sketch map of a representative segment. There also seems to be an increased tendency to consider abandoned road segments eligible for the National Register of Historic Places – which in some cases is puzzling, given their original level of importance, current condition, or both. One way or another, archaeologists now need to document and evaluate abandoned highway segments. The few truly important roads – Route 66, for example – generate their own literature, and the lack of such literature suggests a lack of historical importance for a particular road. Still, *some* documentation must be obtained for even the most obscure roads, which can be a challenge.

The easiest way to get that information is to examine historical maps—which can provide information on when a general alignment was in use, when it was paved or otherwise improved, and changes in the assigned state or federal highway number. Over the years, New Mexico's highway department has published a number of oversized planning maps and bound highway atlases, which detail changes to the state highway system. Most of the base maps for these highway department documents were existing USGS maps, and many cartographic details (such as the distributions of buildings) was outdated at the time the maps and atlases were issued—but then, the state highway department wasn't in the business of documenting incidental aspects of the landscape. The road information, in contrast, seems to have been highly accurate and up-to-date. The down side of using these maps and atlases is the difficulty of finding a representative series outside the NMSHTD. Checking even a partial set of such maps requires a trip to a major university library; in several years of searching I have found only one oversized planning map and none of the atlases for sale.

Another source of information on old road alignments is historic USGS topographic maps, especially those of the old 15 minute series. This also requires a trip to a major university library, though, and historic coverage of the state was spotty. Fortunately, a reference exists that allows researchers to check historic "topo" coverage before making the drive. This is *Map Index to Topographic Quadrangles of the United States, 1882-1940*, by Riley Moore Moffatt, available through the Western Association of Map Libraries ([www.waml.org](http://www.waml.org)).

## Current Research

In my experience, the easiest way to obtain basic historical facts about a highway is to check a collection of historic "road maps," of the sort designed for free distribution to motorists. The popular road maps prepared by the state highway department (beginning in 1925) seem to provide the most accurate information. Service station maps (such as those issued by Texaco or Shell) are good but can lag a year or more behind the official state maps on improvements to the road grid (which stands to figure; preparers of the state maps had direct access to the latest highway data). Where a state map and contemporary private map are both available but disagree on a local road, it's wise to rely on the state map rather than the private one. Before 1925, however, privately issued maps are the only readily available summary of the state's road grid.

In this case as well, those fortunate enough to live near a major library can make the trek to the library's maps room, which should have a number of old road maps. For any consultant, however, it's possible to create a personal reference collection of road maps, saving time and money in the long run. Historic road maps are a common item on eBay.com (and presumably other Internet auction sites) and usually cost only a few dollars each. My own set begins with a 1916 map of the Four Corners states issued by B.F. Goodrich, skips to an official state map issued in 1929, and includes about two dozen state maps issued since then—but a half-dozen maps, carefully spaced through time, should provide sufficient information to complete a typical survey report.

I have termed this essay, in part, "Road Map Madness" because in my experience, collecting historic road maps can quickly aggravate the common archaeological addiction to all things published. Recently I bid on a pristine copy of the first road map issued by New Mexico's state highway department, in 1925. I soon dropped out of the bidding; eventually the map sold for slightly over \$270. A basic series can be fairly inexpensive but clearly the urge for perfection, by way of "filling in the gaps," can leave one's checkbook whimpering. Moreover, the same map can fetch a substantially different price from one week's on-line auction to the next, so a little patience will save a lot of money.

For those who do succumb to "Road Map Madness" there is an organization of fellow addicts: the Road Map Collectors Association. Non-members can check out the association's web site, including its summary of historic NM state highway maps at

< [www.roadmaps.org/omml/nm.html](http://www.roadmaps.org/omml/nm.html) >.

Actual scans of map covers are available at

< [www.geocities.com/motorcity/6626/newmexico.html](http://www.geocities.com/motorcity/6626/newmexico.html) >.

Both sites are useful for dating official New Mexico road maps that do not display the year of publication. If you do decide to start collecting road maps I wish you luck, except when you're bidding against me.

### ***Strontium Isotopes Reveal Distant Sources of Architectural Timber in Chaco Canyon, New Mexico***

Nathan B. English\*, Julio L. Betancourt†, Jeffrey S. Dean§, and Jay Quade¶

\*School of Renewable Natural Resources, §Laboratory of Tree-Ring Research, and ¶Department of Geosciences, University of Arizona; and †U.S. Geological Survey, Desert Laboratory, Tucson. Edited by Jeremy A. Sabloff, University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia, PA.

## PNAS Online



Daily University Science News

*Proc. Natl. Acad. Sci. USA*, Vol. 98, Issue 21, 11891-11896, October 9, 2001 < [www.pnas.org](http://www.pnas.org) >.

See also

< [unisci.com/stories/20013/0926016.htm](http://unisci.com/stories/20013/0926016.htm) >

Between A.D. 900 and 1150, more than 200,000 conifer trees were used to build the prehistoric great houses of Chaco Canyon, New Mexico, in what is now a treeless landscape. More than one-fifth of these timbers were spruce (*Picea*) or fir (*Abies*) that were hand-carried from isolated mountaintops 75–100 km away. Because strontium from local dust, water, and underlying bedrock is incorporated by trees, specific logging sites can be identified by comparing  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios in construction beams from different ruins and building periods to ratios in living trees from the surrounding mountains.  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios show that the beams came from both the Chuska and San Mateo (Mount Taylor) mountains, but not from the San Pedro Mountains, which are equally close. Incorporation of logs from two sources

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in the same room, great house, and year suggest stockpiling and intercommunity collaboration at Chaco Canyon. The use of trees from both the Chuska and San Mateo mountains, but not from the San Pedro Mountains, as early as A.D. 974 suggests that selection of timber sources was driven more by regional socioeconomic ties than by a simple model of resource depletion with distance and time.

Near the middle of the desolate San Juan Basin in northwestern New Mexico, Chaco Canyon was the focus of a spectacular florescence of the Anasazi cultural tradition. Between A.D. 900 and 1150, the Chaco Anasazi developed a complex culture characterized by monumental architecture, advanced agricultural and water control systems, and elaborate road, trail, and signaling networks that integrated numerous communities into a regional exchange, communication, and resource procurement system (1). This regional system was in full swing in the 11th century, but collapsed during a regional drought that lasted from A.D. 1130 to 1180 (2).

Twelve great houses—multistoried masonry pueblos of several hundred rooms each—occupy the Chaco Canyon core of the regional system. A single great house incorporated millions of sandstone fragments from surrounding cliffs and thousands of wood timbers used as primary and secondary roof beams and door and window lintels (3). More than 200,000 timbers, the primary beams averaging 5 m in length, 22 cm in diameter, and 275 kg in weight, were used in the great houses. Most of this lumber was acquired in predetermined lengths and diameters and came from trees that had to be felled, processed, and hauled from distant and widely separated mountaintops. Potential source areas include the La Plata-San Juan, San Pedro-Nacimientos, San Mateo (Mount Taylor), and Chuska mountains (Fig. 1). The absence of appreciable gaps in the sequence of cutting dates indicates that tree felling was virtually an annual activity. Continual repairs and piecemeal additions were interrupted by flurries in large-scale construction (4–6).

Tree species available for construction were, in order of increasing distance from the canyon, cottonwood (*Populus acuminata*, *P. angustifolia*)

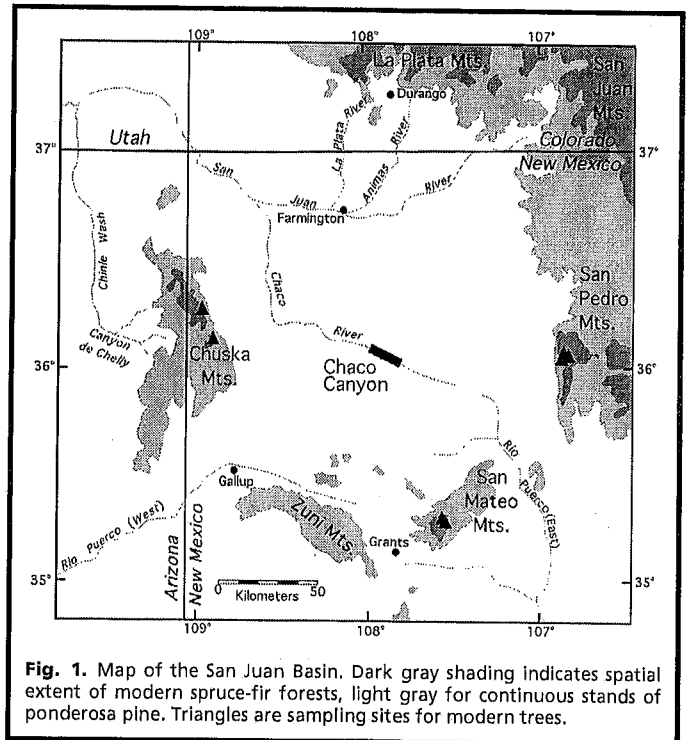


Fig. 1. Map of the San Juan Basin. Dark gray shading indicates spatial extent of modern spruce-fir forests, light gray for continuous stands of ponderosa pine. Triangles are sampling sites for modern trees.

along Chaco Wash, pinyon pine (*Pinus edulis*) and juniper (*Juniperus monosperma*) in nearby scarp woodlands, isolated stands of Douglas fir (*Pseudotsuga menziesii*) in shady alcoves, ponderosa pine (*Pinus ponderosa*) on high mesas and the lower slopes of mountains, and spruce (*Picea engelmannii*, *P. pungens*), fir (*Abies lasiocarpa*, *A. concolor*) and aspen (*Populus tremuloides*) on mountaintops more than 75 km away. Empirical evidence (7) and modeling (8) indicate that by A.D. 1000 construction and fuel wood harvesting had eradicated local pinyon-juniper woodlands. These woodlands have yet to recover. After A.D. 1000 the Anasazi relied increasingly on conifers from the surrounding mountains (2, 4). It has been speculated that logging of distant forests for architectural timber had serious ecological consequences, but the emphasis on trees of a limited size range must have produced impacts more comparable to thinning than clear cutting (9). The distance and direction of these montane forests from the canyon is a measure of the energy expended to harvest and move the timbers, of the organization, ability, and determination of the Chaco Anasazi to build monumental architecture, and of economic, political and social relationships across the San Juan Basin.

## Background

## Current Research

Mountain ranges in the San Juan Basin are geologically diverse, so geochemical methods could be used to determine the provenance of Chacoan timbers. The underlying philosophy is that trees uptake chemical elements from local soils and atmospheric dust and incorporate them into wood. Ideally, the diagnostic chemical parameter should be: (i) unaffected by differential elemental uptake, translocation, or isotopic fractionation in different tree species, (ii) homogeneous in soils and trees of each potential source area (varies little in time or space), and (iii) measurably and statistically different between trees of potential source areas. Provided that these conditions are met, further uncertainties could arise from the geographic scope of the sampling universe. For example, only one match may occur at close range between a potential source area and archeological materials of unknown source, but multiple matches may be possible at increasingly greater distances. In the case of numerous heavy logs, the energetic cost of moving the timber is proportional to both the distance and roughness of the intervening terrain.

Despite recent advances in geochemical provenance methods, there have been few efforts to establish the source of Chacoan timbers. Durand *et al.* (10) used inductively coupled plasma-atomic emission spectrometry to determine the major and trace element chemistry of 62 living ponderosa pine and Douglas fir trees growing on sandstone, basalt, and shale at various sites across the San Juan Basin. They found considerable variations between sapwood and heartwood of ponderosa pine and Douglas fir (see also ref. 11), with the best discriminant of lithology being barium. Durand *et al.* also analyzed 13 beams (species not specified) dated to A.D. 919 from room 320 in Pueblo Bonito and to A.D. 1040–1051 from multiple rooms in Chetro Ketl, the two more prominent great houses at Chaco Canyon. For 11 of the 12 elements analyzed, greater variation was observed in the wood from Pueblo Bonito than from Chetro Ketl. No attempt was made to infer actual beam sources.

Here, we try to improve on the Durand *et al.* (10) study by focusing on spruce and fir and relying on strontium isotopes to determine the source of the Chacoan beams. Although ponderosa pine makes up 50% of the architectural timber and is thus of primary interest, its distribution spans a

wide range of elevations and substrates with many overlapping chemical signatures. On the other hand, spruce and fir comprise only 20% (40,000 trees) of the architectural wood, but are far more restricted geographically (9). Spruce and fir have not grown near the canyon since the end of the Pleistocene, when Holocene aridity drove these conifers to mountaintops more than 75 km and 600 m up slope from Chaco Canyon (7). Each of these mountaintops has a distinct surficial geology, spanning Precambrian granite to Tertiary sandstones and basalts. We chose  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios as a provenance method because they are specific to both the composition and age of the bedrock and are unaffected by biologically induced mass fractionation or translocation.

The geochemistry of strontium isotopes is relatively well known (12), and  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios have been used routinely as environmental tracers in geology (13, 14), hydrology (15), ecology (16, 17), and archaeology (18).  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios should provide a model system for provenance studies of trees growing on diverse, but unknown, substrates. Strontium, an alkali earth metal, is present in all rocks. The  $^{87}\text{Sr}/^{86}\text{Sr}$  ratio of bedrock is a function of the initial  $^{87}\text{Rb}/^{86}\text{Sr}$  ratio and the age of the rock. Strontium-87 is derived from the radioactive decay of Rubidium-87 ( $t_{1/2} = 48.8$  Ga). Rocks that are older or have higher initial concentrations of  $^{87}\text{Rb}$ , such as granites, have higher  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios than younger volcanic rocks derived from the Earth's mantle; sedimentary rocks generally have intermediate values.

In the Sangre de Cristo Mountains, New Mexico, only 200 km east of Chaco Canyon,  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios have been used to study chemical weathering, atmospheric deposition, and solute acquisition in watersheds dominated by Engelmann spruce (*P. engelmannii*) and subalpine fir (*A. lasiocarpa*) (16, 17). Biomass measurements from spruce, fir, and aspen showed little scatter in  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios, suggesting that the bioavailable strontium is isotopically homogenized by atmospheric deposition across a given stand, and that biological cycling is rapid relative to the rates of strontium input into the ecosystem. The  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios in the biomass were the same as in the soil solution.  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios were unaffected by isotopic fractionation during mineral dissolution, absorption by tree roots, and translocation throughout the tree. About 20% of the bioavailable stron-

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tium was found to be derived from bedrock and 80% from atmospherically transported dust. Individual trees cycle about one-third of the Sr in the throughfall (bulk precipitation collected under the canopy), whereas the other two-thirds is airborne dust leached from the foliage. Geographic variations in bioavailable strontium could be more a function of local and regional atmospheric dust than of local bedrock. The scale of geographic variability in  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios of atmospheric dust is poorly known, but the few data from the southwestern U.S. seem to indicate significant variations on a scale of 200–300 km, and possibly finer (19).

### Materials and Methods

We compared the  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios of bedrock, soil, and stream water, and spruce and fir growing at possible logging sites in the San Juan Basin to those of select timbers from at least three human generations at six of the great houses in Chaco Canyon. Live trees, rocks, stream, and soil waters were sampled from the three most accessible localities for prehistoric logging of spruce fir stands, the San Pedro Mountains .85 km to the east, the San Mateo Mountains .80 km to the south, and the Chuska Mountains .75 km to the west (Fig. 1). We excluded the La Plata-San Juan Mountains because these spruce fir forests were most distant (.150 km to the north) and least accessible, requiring transport across deep canyons and flowing rivers (for additional reasons, see ref. 4). Nevertheless, we recognize that extensive spruce fir stands in the La Plata-San Juan Mountains could very well provide an isotopic match for Chacoan beams at twice the distance of the other mountain ranges, and future analyses could resolve this issue.

Cores were extracted from trees of six species growing at various elevations and in a variety of settings separated by '10 km in the San Pedro Mountains, '5 km in the San Mateo Mountains, and '25 km in the Chuska Mountains (Fig. 1). We collected .200 tree, rock, and water samples for  $^{87}\text{Sr}/^{86}\text{Sr}$  analyses. Modern tree samples were collected in March, 2000 and May, 2001 by using a 1y4-inch increment borer (lubricants were not used). We sampled Engelmann spruce, subalpine fir (*A. lasiocarpa* var. *lasiocarpa*), and white fir (*A. concolor*) in the San Pedro Mountains, Engelmann spruce, blue spruce (*P. pungens*), subalpine fir

and corkbark fir (*A. lasiocarpa* var. *arizonica*) in the San Mateo Mountains, and Engelmann spruce, subalpine fir and Douglas fir in the Chuska Mountains. Rock and water samples were from streams and outcrops adjacent to modern trees.

Dated architectural wood (both cross sections and cores) from six of the 12 Chaco Canyon great houses was obtained from the collections of the Laboratory of Tree-Ring Research (LTRR) at the University of Arizona, Tucson. We analyzed 52 spruce and fir beams from Pueblo Bonito ( $n$  5 19), Chetro Ketl ( $n$  5 15), Pueblo del Arroyo ( $n$  5 12), Wijiiji ( $n$  5 1), Hongo Pavi ( $n$  5 2), and Una Vida ( $n$  5 3). The cutting dates of the trees were determined by crossdating; because of possible stockpiling and reuse, the cutting date does not necessarily imply the year that the tree was used in construction. Replicate samples with cutting dates falling between A.D. 974 and 1104 were selected from the same rooms and from different rooms. We tried to span at least three human generations ( $T$  5 30 years) at each great house. We chose dated beams labeled "spruceyfir" from the LTRR archive for Chaco Canyon and anatomically segregated spruce (*Picea*) from fir (*Abies*) by using the presence or absence of lateral resin ducts; identification to species or variety may be possible but was not attempted in this study. Fir ( $n$  537) was more than twice as abundant as spruce ( $n$  515) in our sample. There was no intentional species bias in sample selection except the availability of an exact cutting date for each sample; in general, spruce is no more difficult to crossdate than fir. Given the small sample size, we can draw no conclusions about species occurrence in the architectural timbers.

Both modern and ancient trees were processed similarly. We sampled the innermost (earliest) rings of sections and cores from both modern and prehistoric tree samples. We shaved and discarded 1–2 mm from the surfaces of all samples to avoid contamination through diagenesis, processing, or storage. After cleaning, 40–70 mg of wood was removed from the cleaned area and placed in a Vicor tube cleaned with 6 M HCl (all acids were doubly distilled) and rinsed with 18 MV water. The tubes were vacuumsealed and baked for 1 h at 500°C. These were cracked and baked for another 5 h at 900°C to volatilize any carbon. The remaining ash was placed in a clean Teflon beaker and dissolved in '3 ml of 2.5 MHCl.



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We rinsed each tube three times with 2.5M HCl and added sample tube rinse to beaker. Samples were evaporated and reconstituted twice with 3.5 M HNO<sub>3</sub>. Strontium from wood, water, and rock digests was separated with Eichrom Sr-specific resin, and <sup>87</sup>Sr/<sup>86</sup>Sr ratios were measured on a Micromass Sector 54 thermal ionization mass spectrometer. The <sup>87</sup>Sr/<sup>86</sup>Sr ratio was normalized to 0.1194 and analyses of the NBS-987 standard run on each 20-sample turret yielded a mean ratio of 0.7102453 ± 12 (1s, n = 5–16). We used JMP IN 4.0.3 to statistically analyze <sup>87</sup>Sr/<sup>86</sup>Sr ratio data. Probabilities were determined by using ANOVA and linear statistics means contrast tests. All data are reported with standard error.

### Results

Modern tree <sup>87</sup>Sr/<sup>86</sup>Sr ratios are distinct for the San Pedro, San Mateo, and Chuska mountains (Table 1). The San Pedro Mountains represent high, faulted blocks of Precambrian granite and Paleozoic sedimentary rocks. We sampled trees growing on soils underlain by granite, limestone, and sandstone at three sites within a 10-km radius. Creek waters in the San Pedro Mountains have high <sup>87</sup>Sr/<sup>86</sup>Sr ratios (0.7152 to 0.7156), reflecting the predominant bedrock, which is granite. Contrary to expectations, there were only slight isotopic differences between trees growing on different substrates in the San Pedro Mountains. The mean <sup>87</sup>Sr/<sup>86</sup>Sr ratios of San Pedro Mountain trees do not vary by species (ANOVA; *P* = 0.18). An average of all sampled trees from the San Pedro Mountains yields a mean of 0.7143 ± 0.0001, similar to values obtained for spruce stands growing in the Precambrian granite of the Sangre de Cristo Mountains (16, 17), 100 km to the east.

The Chuska Mountains are a north-south trending range capped with a thick and flat-lying Tertiary sandstone (<sup>87</sup>Sr/<sup>86</sup>Sr = 0.7340 up to 0.7536), occasionally overlain by limited outcrops of Tertiary basalt (<sup>87</sup>Sr/<sup>86</sup>Sr = 0.7063). We sampled two main localities, one at Washington (Narbona) Pass and the other 25 km to the north in the headwaters of Porcupine Canyon. At Washington Pass, we sampled trees growing on sandstone immediately downhill from a basalt cap. At this site, snow and creek waters yield <sup>87</sup>Sr/<sup>86</sup>Sr ratios (0.7087 to 0.7097) intermediate between the sandstone and basalt. Washington Pass trees yield a mean <sup>87</sup>Sr/<sup>86</sup>Sr ratio of 0.70966 ± 0.0001 (Table 1).

There is no basalt cap at Porcupine Canyon and the only local bedrock is Tertiary sandstone. At Porcupine Canyon <sup>87</sup>Sr/<sup>86</sup>Sr ratios do not vary by species, and the mean from all trees is identical (0.7095 ± 0.0001) to those at Washington Pass, suggesting considerable homogeneity along the western escarpment of the Chuska Mountains. The <sup>87</sup>Sr/<sup>86</sup>Sr ratios of Chuska Mountain trees do not vary by species (*P* = 0.43).

The San Mateo Mountains, commonly referred to as Mount Taylor, represent a succession of lava and ash flows formed from 2 million to 4 million years ago, the oldest of basalt, the younger ones of dacite and andesite. These rocks have intermediate to very low <sup>87</sup>Sr/<sup>86</sup>Sr ratios (0.7023 to 0.7142) (20). A sample of San Mateo spring water also yielded a low <sup>87</sup>Sr/<sup>86</sup>Sr ratio (0.7075). We sampled two different sites in spruce fir forest (Table 1). The mean <sup>87</sup>Sr/<sup>86</sup>Sr ratio of San Mateo Mountain trees differs significantly when grouped by species (*P* = 0.01). No species difference occurs, however, when we exclude five samples of *P. pungens* taken from a location 5 km away from the other samples (*P* = 0.72). All San Mateo Mountain trees yield a mean <sup>87</sup>Sr/<sup>86</sup>Sr ratio of 0.7078 ± 0.0001 (Table 1).

The <sup>87</sup>Sr/<sup>86</sup>Sr ratios of trees differ substantially between the three mountain ranges (Fig. 2) and can be used to determine the source of prehistoric spruce and fir timbers in Chaco Canyon. In general, <sup>87</sup>Sr/<sup>86</sup>Sr ratios from the great house timbers (Table 2) fall within the range of ratios found in live trees from the San Mateo and Chuska mountains (ANOVA, *P* = 0.11) (Fig. 3). None of the architectural beams fall within the isotopic range of the San Pedro Mountains (ANOVA, *P* = 0.0001), which are thus eliminated as a possible timber source. Twice as many beams fall in the isotopic range of living trees in the Chuska than in the San Mateo Mountains. The only preference by site is the greater proportion of beams from the Chuska Mountains at Pueblo del Arroyo. There is no obvious temporal preference in the use of timber from one mountain range over the other. Both the Chuskas and San Mateo mountains were being logged simultaneously as early as A.D. 974 and as late as A.D. 1100. There were specific years (cutting dates) when beams from one source area (Chuska Mountains) were incorporated into two great houses (e.g., A.D. 1037: Pueblo Bonito and Pueblo del Arroyo). Likewise, there were specific years when beams from the two sources (Chuska and San Mateo mountains) were incorporated into one great house (e.g., A.D. 1049: Pueblo Bonito). At Pueblo Bonito, one room (room 86) incorporates wood from both



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the San Mateo and Chuska mountains cut in A.D. 974.

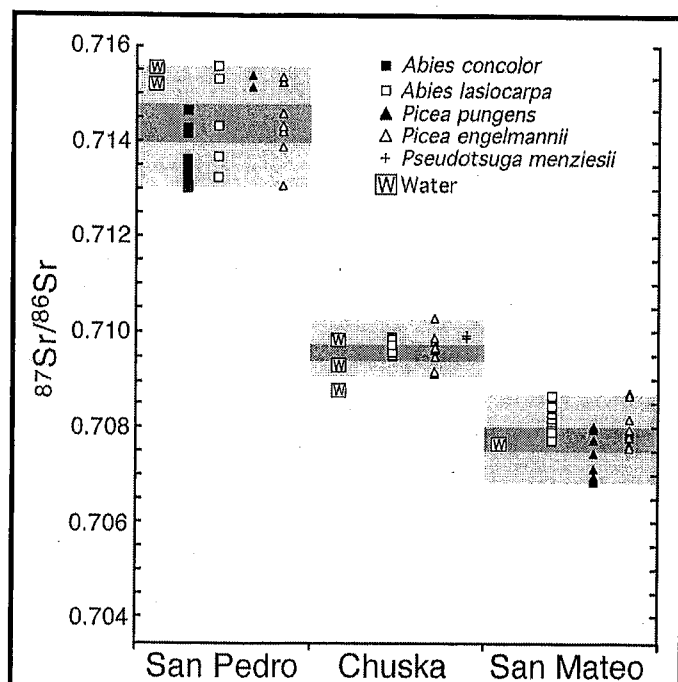
### Discussion

Previous workers have speculated that early depletion of wood nearby drove selection of sources, either from local to distant stands or conceivably from one mountain to another (2, 4–6, 9, 10). The  $^{87}\text{Sr}/^{86}\text{Sr}$  evidence shows, however, that both the San Mateo and Chuska mountains were providing fir beams in the early construction phases of the great houses such as Pueblo Bonito (A.D. 974). This early reliance on distant sources could have ecological as well as cultural reasons.

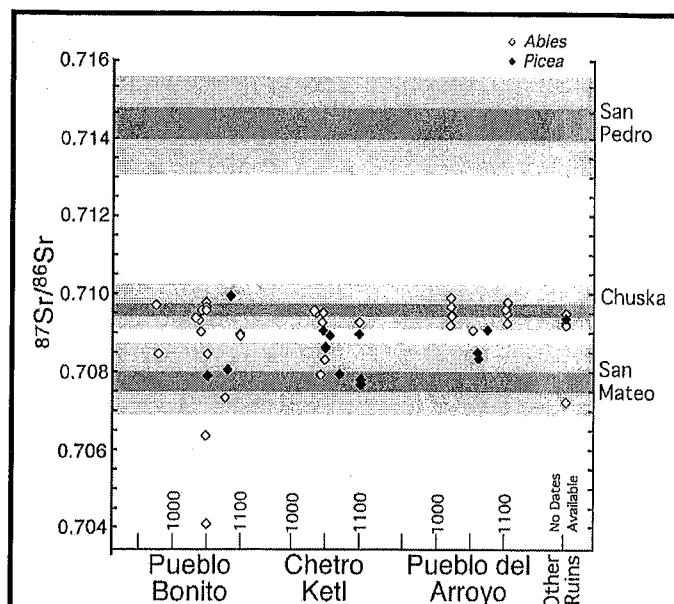
Architectural timber at Chaco Canyon included a high proportion (50%) of fast-growing and straight saplings to be used as secondary roof beams (4–6, 9). Conifer saplings are most common at higher elevations where climatic conditions favor more frequent regeneration, and wetter conditions reduce natural fire frequencies and associated sapling mortality. Modern forests at lower elevations may not be representative of Precolumbian ones. Heavy grazing by European livestock reduced the fine fuels necessary to sustain episodic surface fires. In Chacoan times, ponderosa pine forests at low to middle elevations

would have been open and even-aged, composed of few young trees and many mature ones with thick, protective bark (21–23). Hence, ponderosa pine stands within 50 km of Chaco Canyon may not have provided the large numbers of small trees required for construction of the great houses. Certainly, at the height of construction in Chaco Canyon (i.e., 11th century), the crests of the Chuska and San Mateo mountains would have been ideal sites for logging a great variety of conifer species and size classes. The Anasazi may have focused on both mountain ranges because no single forest could satisfy the builders' need for small trees of particular species and dimensions (i.e., cohort).

Timber sources may have been determined by pre-existing sociopolitical ties between Chaco Canyon and outlying communities at the base of the Chuska and San Mateo mountains. The paucity of Chacoan "outliers" or roads east of Chaco Canyon (1) may explain why the San Pedro-Nacimientos mountains were never logged, despite being the same distance from the canyon as the other mountain ranges. Alternatively, pre-existing ties to specific resources may have influenced the placement of certain outlying communities and the destinations of major Chacoan roads, putting a permanent stamp on the configuration, direction of growth, and extent of the Chacoan regional system (2). Chacoan outliers within a few hours' walk of the San Mateo or Chuska mountain forests were well positioned to regularly harvest, cure, and stockpile timbers. The synchro-



**Fig. 2.**  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios of live trees and local waters from sampled sites. Dark shading represents the mean  $^{87}\text{Sr}/^{86}\text{Sr}$  ratio (95% confidence interval) of live wood samples analyzed without regard to species. Light shading represents full range of modern wood  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios from each area. Analytical errors are smaller than symbols shown.



**Fig. 3.**  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios of great house architectural timbers compared with means and ranges of live trees from the San Pedro, San Mateo, and Chuska mountains. Other great houses are Wiji, Hongo Pavl, and Una Vida. Means (dark shading) and ranges (light shading) are from live wood shown in Fig. 2.

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nous overlap of beams from both sources within and across great houses further suggests that timber procurement and transport was part of a regional system for acquiring a variety of resources including timbers, raw material for chipped stone, pottery, and turquoise. The synchronicity of cutting dates from different mountains could signify a specific demand and supply tied to episodic construction. Coincidence of construction periods at Pueblo Bonito with wet decades suggests that additions to the great houses were driven by food surpluses (4, 5). On the other hand, climate variability tends to synchronize tree recruitment across hydroclimatic areas in the southwestern United States and produces conspicuous cohorts shared among separate mountain ranges (e.g., 1919 for ponderosa pine) (24). The flurries in construction could be tied to maturation of a regional tree cohort into ideal dimensions for architectural use.

### Conclusions

Thousands of beams of potentially known cutting date, species, source, and architectural function illuminate the scale and complexity attained by the Chacoan system. The architectural planning and vast distances involved in procuring '200,000 beams testify to the system's geographic scope and organization. Rather than one timber source being constrained to a particular construction phase or great house, both sources occur contemporaneously regardless of generation or great house. This reflects the Chacoans' ability to organize large intercommunity labor forces to extract timbers from distant mountains or to motivate the inhabitants of the resource areas to acquire timbers for use in Chaco Canyon.

Finally,  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios in modern trees constitute a surprisingly well-behaved isotopic system. We found little scatter in isotopic ratios among individual trees or different species in the same stand and surprisingly little scatter among stands within a given mountain range. Tree  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios in the San Pedro Mountains vary little despite growing on three different substrates (granite, limestone, and sandstone). This probably reflects the overriding influence of local and regional atmospheric dust sources of strontium, which trees integrate into wood over decades to centuries. We suggest that  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios in atmospheric dust vary on geographic scales perhaps closer to tens than hundreds of kilometers. This subregional-scale variability should be sampled systematically and could abet future use of  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios to

*(Continued on page 31)*



## Secretary's Report

Luanna Haecker

On Saturday, October 20, 2001 NMAC held its fall meeting. President Brad Vierra called the meeting to order with about 20 members in attendance. Brad was presented with a cake by the executive council members to acknowledge the time and energy he has devoted to the organization during his term as President. Coffee and cake were served and the meeting began.

Plans for the Gallina Conference which was held the following week and the Wildfire Conference which was held November 10th were discussed.

Possible future conferences/workshops/tours were suggested including: Mimbres in the spring, a historic artifact/architecture workshop, and a lithics workshop. It was also suggested that NMAC look into setting up some tours of sites, which are difficult to visit due to access constraints. This led to some discussion as to whether certain tours be opened up to interested people "outside" the NMAC membership. The example given was visiting the Mimbres sites. Numerous non-member archaeologists and "Joe public" contacted NMAC regarding this tour. There was some concern about protecting the sites from future vandalism if NMAC were to allow public attendance on such tours. However, it was noted that such high interest tours might draw university anthropology students and get more archaeologists to sign up as NMAC members. It was recommended that professionals and students be given first priority for the limited number of openings. Bill Doleman then moved that an extra charge (the cost of a membership) be added to any non-members' entrance fee to any future NMAC conference/workshop/tour. Thus attending results in joining NMAC. Charlie Haecker seconded the motion. Vote was unanimous-yes.

Brad and Dave Eck gave an overview of the latest meeting with the State Land Office regarding sand and gravel, oil and gas, business, and agricultural leases on State lands and NMAC's concerns involving the very limited amount of archaeological investigation conducted. The saga will continue...

Regarding NMAC publications: the Chaco volume has sold out, there was a suggestion that a tech series be created on the NMAC website for

## Secretary's Report

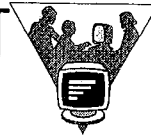
"publication" of papers from workshops, and Bill Doleman motioned that the papers of the Wildfire Conference be published. Charlie Haecker, seconded and the motion carried.

Secretary, Lou Haecker, gave a progress report on a proposed agreement with the Lab of Anthropology to archival house the paperwork NMAC has generated over the years. There would be a charge of \$225 per linear foot for the collection and no future charges for later incoming paper. The present amount of paper is approximately 16-20 linear feet. In an effort to reduce the costs to NMAC, I suggested that the files be reviewed and perhaps some items thrown out, as well as compiling a list of what types of paper should be retained by future executive councils. Reg Wiseman, pointed out that should NMAC want to do an organizational history at some time in the future, care should be taken with what is removed and "tossed". I also noted that the Lab library has a nearly complete set of the NMAC newsletters over the years and that NMAC's file copies would be housed in the Lab Archives (within the same building) and if the building was destroyed both sets would be lost. I suggested that NMAC look into keeping a set of newsletters "off-site". The State Library and a computerized version (CD or maybe on the website) were mentioned as possible secondary storage.

Bill Doleman presented the treasurer's report, Chuck Hannaford talked about the new speaker's bureau list for the education committee. There was a motion to spend more money to set up the accounts books for the NMAC foundation and the sum of \$500 was agreed to by the membership.

Under other announcements: Chris Turnbow requested help with lectures for a mid-July anthropology education/outreach program the Lab of Anthropology will be having. Reg Wiseman asked that papers for the Arch Soc volume be turned into Reg or Dedie Snow by December 1. Then Brad adjourned the meeting.

**Have you paid your  
dues for 2002?**



## ARMS Report

Tim Seaman

### **ARMS Regulation Amendments**

A draft of proposed amendments to the ARMS regulation (4 NMAC 51.3) will shortly be available for informal review and comment through the ARMS web site:

< <http://potsuii.arms.state.nm.us> >.

We are seeking to modify the regulation to:

- ❑ decrease the number and size of delinquent ARMS accounts;
- ❑ increase survey registration fees to support additional ARMS services and administrative costs of moving to a monthly billing cycle;
- ❑ offer incentives through fee "discounts" for users registering your own projects and/or delivering GIS data to ARMS;
- ❑ scale annual fee assessments to company size;
- ❑ scale state and federal support of ARMS to the actual costs of NMCRIS and the value of services provided.

The amendment process will begin with a period of informal review and comment ending 15 January 2002. Afterwards, a final proposal will be circulated for comment among current ARMS users, cooperating state and federal agencies, and interested business interests. A public hearing will then be announced and held in Santa Fe to take oral testimony. After a brief period for additional written testimony, the hearing officer (yet to be appointed) will prepare recommendations for action by the Museum of New Mexico Board of Regents. If accepted by the Board, the regulation would then be published in the New Mexico Register and hopefully become effective on 1 July 2002.

If you have questions, or have trouble downloading the document from our web site, please give me a call at (505) 476-1277 and I will drop one in the mail. We will also include a copy of the draft regulation with the January invoices.



## Lab Report

Chris Turnbow

The staff of the Laboratory of Anthropology has been busy with museum activities, research, and unfortunately, emergencies. Once again, our woefully inadequate downtown storage space for the Archaeological Research Collections blew a steam pipe, showering 80 boxes with water. Last year the broken pipes soaked around 150 boxes. Our staff has been assessing the damage and reboxing the specimens. Luckily, this year most of the specimens were in plastic bags and the damage to objects was minimal.

To improve the conditions of the collections and increase curation space, the Museum of New Mexico requested capital funding for FY 2003 to build an annex to the Laboratory of Anthropology. Architectural designs for the annex include a state-of-the-art collections facility behind the Lab. Additionally, new quarters would be constructed for ARMS and the Lab's Library and Archives. This expansion will be a major contribution to New Mexico archaeology and research. However, with budget shortfalls and without legislative support, construction will not likely happen anytime soon. In the meanwhile, like so many other museums in the Southwest, the Lab is running low on collections space.

### Lab Research

The Museum shelves hold numerous collections from excavated sites that were never analyzed or adequately reported. Although many could contribute significantly to our knowledge of New Mexico's past, the sites were excavated during the "salvage archaeology" days when money was only available for the fieldwork.

One such collection comes from the West Fork Ruins (LA 8675), located along the West Fork of the Gila River only a mile from the Gila Cliff Dwellings. Investigated as a highway salvage project in 1966, the site revealed a historic 1890s ranch complex, a 22 plus room Mimbres pueblo, 14 pithouses from earlier components, at least 19 human burials, and a large number of other features. Yet, the report for the site filled only seven pages.

Starting next month, a team of professional archaeologists and Lab volunteers will begin work on the West Fork collections. Volunteers are cur-

rently being trained in lithic and ceramic analysis, computer database management, historic archival research, and computer skills. Special studies include NAA analysis of the ceramics, XRF obsidian sourcing, chronometric dating as well as pollen, phytolith, and macrobotanical analyses. Efforts are also underway to conduct a geologic resource survey of the region. Ultimately, our plan is to produce a jazzy CD report and a website.

In addition to the West Fork investigation, we are preparing a Mimbres expedition to the Upper Gila River drainage. During the fall and winter of 1999-2000, commercial looters raided the Gila National Forest, destroying portions of five Mimbres pueblos. The Diamond Creek site was stabilized last year. The Laboratory of Anthropology and Gila National Forest are now teaming to complete the stabilization of the other four sites and to document and analyze the archaeology exposed by the looters. Funding has been secured for analysis, lab samples, a small museum exhibit, website, and a final report. KUNM radio will also be doing a feature on the work. Because the sites are within the Gila Wilderness Area, the fieldwork will involve camping with transportation either on foot or by horse. We could use a few professional archaeologists who could volunteer for April 10-16, May 1-6, or May 8-13, 2002. Contact Chris Turnbow at (505) 476-1252 if you might be interested in participating.

### Other Happenings

The Lab and MIAC hosted the fall NMAC meeting on October 20<sup>th</sup> and the following week, the Galina Workshop. During both events, we took the participants on collection tours. Folks got a chance to pour over the prehistoric ceramics, sandals, digging sticks, arrows and other things that are not usually on display. New acquisitions of historic Pueblo vessels from Frank Harlow were also showcased. Of course, the Museum's collections are available for your study so contact us with your research interests.

MIAC/Lab began construction of the Heritage Trail on the grounds around the museum. The trail system focuses on agriculture, native plants and the environment, and culture history. Thus far, we have outlined the trail, built a gravel mulch garden, and constructed a few ramadas. On October 6, volunteers began construction of a replica of an Archaic structure. The Santa Fe National Forest supplied the juniper; however, finding material

## Lab Report

to roof over the framework has proven difficult. Luckily, the Gila National Forest has offered to send us a load of beargrass early this spring.

Several major exhibits are being planned for the coming year. John Torres, our Curator of Archaeology, is working on a fantastic exhibit titled "Touched by Fire: The Art, Life, and Legacy of Maria Martinez." This exhibit will run from March 16, 2002 to January 5, 2003 and will display some of her most important pieces. The other exhibit will be the "Jewels of the Southwest" from May 25 to August 30, 2002. It will present masterpieces of contemporary Southwest Native jewelry.

### **Sun Mountain Gathering: A Native New Mexico Heritage Festival**

Since coming to the museum, I have seen firsthand how thirsty the public is to learn more about archaeology. So, on July 13 and 14, 2002, the Museum of Indian Arts and Culture and the Laboratory of Anthropology will host the first Sun Mountain Gathering festival. Dedicated to public education about archaeology and Native cultural heritage, the Gathering needs your help to explain our discipline.

The event will provide a hands-on learning experience for the visitors. We are looking for analysts, experimental archaeologists, preservationists, and Native craftsmen and performers. Kids of all ages will be able to try their hands at working bone tools and jewelry, playing Indian games, chopping a log with a stone axe, cordage making, fire making, and tilling a garden with a stone hoe. The spearthrower range will be open and there will be lectures on the technology of the atlatl. We need flintknappers, bow makers, hot rock cooking experts, firemakers, and hide workers to conduct demonstrations along the Heritage Trail, particularly at the heirloom gardens, the Archaic encampment, and a Navajo sheep camp. A Pueblo IV fieldhouse will be under construction during the event and we could use archaeologists to discuss fieldhouses and get their hands dirty too. This would be an excellent opportunity for NMAC to perform a community service project in keeping with our mission.

### **Atlatl Competition: We Double Dog Dare You!**

The staff of the Museum of New Mexico challenges all archaeologists to an atlatl shoot on July 13 and 14, 2002 at the Lab. We will shoot for accuracy, distance, and bragging rights. Our rules are simple. You have to shoot a homemade spearthrower and dart (no tita-



## Federal CRM Update

### **No Room for Riches of the Indian Past**

Catherine C. Robbins

www.nytimes.com

**The New York Times**

ON THE WEB

24-Nov-01

ALBUQUERQUE — Few motorists speeding along the newly widened U.S. Highway 89 to the canyons and parklands north of Flagstaff, Ariz., know of the archaeological treasure that once lay beneath the road's smooth surface. In just a 17-mile stretch, archaeologists who preceded the road crew's bulldozers found more than 100,000 artifacts, the remains of Native American agricultural and trading cultures that sprouted in the fifth century A.D. and lasted for more than 800 years.

Those pieces of carved rock and arrowheads, ceramics and animal bones are headed for the Museum of Northern Arizona in Flagstaff, the official repository for Highway 89's archaeological bounty. But once those finds are deposited, the museum will be forced to close its doors to new artifacts from public projects. There is just no more room.

"Until we deal with the space problem, we won't take any more," said Arthur Wolf, the museum's president and chief executive officer.

The Museum of Northern Arizona is not alone. The combination of preservation legislation and explosive growth in the Southwest over the last decade has created an archaeological boom that has completely overwhelmed the region's museums and anthropological centers, archaeologists, museum executives and government officials say. Their institutions cannot handle all the artifacts found and excavated during publicly financed projects, which are known in the trade as cultural re-

*(Continued on page 18)*

mium or other high tech materials). We also will give a prize for the most accurate replication of a Southwest atlatl.

So far, we have about four entries but haven't heard from the archaeologists at the New Mexico State Highway and Transportation Department, the BLM, Forest Service, the National Park Service, and most of the contract community. If you aren't afraid, show us how good you are!

## Federal CRM Update

source materials, or C.R.M.'s. The logjam is so bad that some museums like Northern Arizona are closing their doors to the resource materials, and others are limiting what they will accept, while a third group has increased their fees for cataloguing, analyzing and storing them by as much as 10-fold.

Some museum officials and researchers are worried that the overload is already leading to improper storage that could permanently damage archaeological holdings. The National Park Service removed one of its collections from the University of Denver's anthropology museum this summer because of substandard conditions, said Christina Kreps, the museum's director. And Mr. Wolf of Northern Arizona, who is one of eight accreditation commissioners for the American Association of Museums, which sets standards for museum operations, admitted that his own museum was below par: "My own institution is not there."

Without relief, the backlog could prevent archaeologists from obtaining excavation permits and could even temporarily stop work on public projects. Most officials agree, however, that something — though they don't know precisely what — will be done to prevent such extreme measures. "That could happen theoretically," said Kevin Black, the assistant archaeologist for Colorado's Office of Archaeology and Historic Preservation, "but when push comes to shove, we'll do something and won't have to take the drastic step of not issuing permits."

The growing concern reached a peak in January, when the University of Colorado's museum in Boulder and the Denver Museum of Nature and Science stopped accepting most cultural resource materials. "The crisis is now," said Linda Cordell, the University of Colorado Museum's director. Mr. Wolf said, "We're just coming to see it as an industrywide problem."

The National Park Service, which maintains several regional repositories for cultural resource materials, earlier this year began a comprehensive review of such institutions in eight Western states including Colorado, Arizona, New Mexico and Texas, when officials began to realize they would soon run out of room, said Virginia Salazar, the Park Service's regional curator for the Intermountain Region.

A similar review began in 1999 in the Southeast region, where museums are also experiencing space problems.

Preservation legislation for America's archaeological wealth is not new. Congress passed the Antiquities Act in 1906, after looters and European explorers made off with boxcars full of finds from Mesa Verde, a collection of cliff dwellings and other ancestral Native American sites discovered in southwestern Colorado in 1888. The act made Mesa Verde the first national park for archaeological preservation. Since the 1960's, however, legislation like the National Historic Preservation Act of 1966, the Archaeological Resources Protection Act of 1979 and the Native American Graves Protection Repatriation Act of 1990 has strengthened protection of the archaeological patrimony.

In addition, most states and some localities, including Albuquerque in New Mexico and Phoenix and Scottsdale in Arizona have passed preservation legislation; tribes like the Navajo and Hopi have established their own cultural preservation programs.

Federal legislation now requires that publicly financed work on private lands or work that disturbs public lands be assessed for its archaeological impact. Such an assessment involves surveying, excavating and sending artifacts to government-designated centers, usually regional museums. On federal projects, Washington sets the standard for what must be saved, and which institutions accept and care for the materials.

Thus, publicly financed highways that serve booming subdivisions, gas and oil exploration on public lands, roads and tourist amenities in state and national parks — all require an archaeological and historic survey before a spade of dirt is turned. And archaeologists must identify a designated museum or center when they apply for a permit to excavate.

The Southwest has been especially affected because of the dense layers of ancient cultures and today's intense development. For example, the 2000 census shows that the population of Montezuma, La Plata and Dolores Counties in Colorado — where some of the nation's richest ancestral Native American areas like Mesa Verde are located — grew by more than 30 percent over the last decade. Three of the five fastest growing counties were Colorado's Douglas, Elbert and Park Counties, all south of Denver, with population increases of 191 percent, 106 percent and 102 per-

## Federal CRM Update

cent respectively.

No one ever anticipated the sheer number of artifacts that would turn up. The Museum of New Mexico's Laboratory of Anthropology in Santa Fe is two years from capacity, if growth rates continue, said Chris Turnbow, the assistant director. Meanwhile, the Maxwell Museum at the University of New Mexico in Albuquerque moved some of its collections into a converted car wash to help store the overflow, and has another expansion project underway. "Desperation will drive you to make funny decisions," Bruce Huckell, the museum's senior research coordinator, said.

Museums have limited control over the cultural resource materials that are washing up at their doors. Artifacts found in public projects belong to whichever government entity finances the project or owns the land, like the National Park Service, and it decides which museum must store the finds. In New Mexico, for example, all such materials found on state land must go to the Museum of New Mexico. Financing for museums varies from state to state, although the museums generally negotiate a curatorial fee with the archaeological firms doing the excavations.

Mr. Wolf of the Museum of Northern Arizona said the federal and state governments allocated \$26 million to widen Highway 89, \$2.5 million to do the excavations and \$100,000 to store artifacts forever. The privately financed museum now houses about 5 million archaeological specimens, 95 percent of them federally owned – free of charge.

At the University of Denver, the Museum of Anthropology will now accept resource materials only from projects east of the Continental Divide, said Ms. Kreps, the museum's director. In addition, the museum has increased curatorial fees from \$70 for a 16-by-16-by-30-inch box to \$455 to \$707 per box. The fees have sent "sticker shock" across the archaeological community, said Mr. Black, the archaeologist at Colorado's Office of Archaeology and Historic Preservation.

Mark Mitchell, the president of the Colorado Council of Professional Archaeologists, said the council would like the federal government to build additional repositories like the Anasazi Cultural Heritage Center, in the southwestern Colorado town of Dolores.

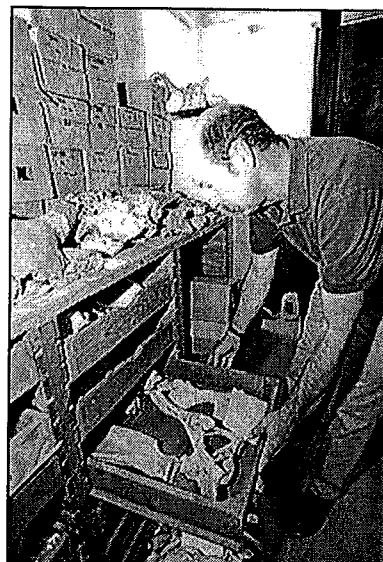
While some museums consider limiting the number of cultural resource materials they will accept, that talk makes some academic archaeologists uneasy. Such a policy could leave the practical decisions about what should be saved to field archaeologists, whose work, they say, might be driven by construction deadlines rather than the more leisurely pace of academic researchers. They

worry that an important find could be left behind, perhaps excavated but then reburied because a repository has no room.

"The tradition of archaeology is to collect what you excavate," Mr. Black said. "That tradition may have to be adjusted." Some adjustments have already been made, he said. Some excavations, for instance in ancient rock quarries, yield materials that are simply debris from tool making. In those cases, the debris is analyzed and a sample taken, although most is left in place.

The impact of technology makes archaeologists pause before leaving anything behind. Mr. Huckell explained that it was hard to predict what would turn out to be valuable. As an example, he pointed to a doctoral candidate at the University of New Mexico who is using new technology to analyze ceramic materials that have been in the Maxwell's collection for two decades. Archaeologists have waited 60 years for the technology that allows researchers to trace the link between the ceramics and the origin of some of the materials used to make them, he said: "Research pays off, but it might not be immediate."

Also, in some excavations the amount and diversity of materials are so great that they fill in gaps in knowledge, and saving, say, 10 of 100 pots, is not an option. "No two Anasazi pots are exactly alike, and each gives you different information," Mr. Black said. "No one individual artifact is representative of the whole. These things weren't being mass-produced. They were all individually hand-crafted. It's like how many Picassos or Van Briggles do you want?"



Cary Herz for The New York Times

Bruce Huckell, research coordinator at the University of New Mexico's overcrowded anthropology museum.





## Issues & Viewpoints

### Book Review

#### ***Beyond the Shadow of a Giant: Casas Grandes Research Enters the Twenty-First Century***

*Casas Grandes and its Hinterland: Prehistoric Regional Organization in Northwest Mexico*, by Michael E. Whalen and Paul Minnis, 2001. University of Arizona Press, Tucson. 242+xv pages.

Reviewed by David A. Phillips, Jr.

Charles Di Peso's eight-volume report on Paquimé, published in 1974, was one of the most important contributions ever made to Southwest archaeology. Nonetheless, the report had two notable limitations. First, it was organized around the untenable theory that change in the Casas Grandes area was driven by events in central Mexico. Second, discussion of the regional settlement system was almost nonexistent. The two went hand in hand: given his assumptions about cause and effect, Di Peso seemed more likely to explain Casas Grandes prehistory by concentrating on the "Mesoamerican outpost" of Paquimé, instead of spreading his work over a vast and largely unexplored region.

After years of hard work, Michael Whalen and Paul Minnis have brilliantly taken on the major gaps in our understanding of Casas Grandes prehistory, providing the settlement data that are so necessary for interpreting the still-mysterious site of Paquimé. Speaking informally, some of us have described their book as the "Ninth Volume," implying that the new data complete the scope of the research laid out in Di Peso's original report. This is unfair, however; Whalen and Minnis have achieved a milestone of a different sort. Di Peso's contribution was so massive that for a quarter-century, researchers relied on his data and, for the most part, reacted to his ideas. *Casas Grandes and its Hinterland* is the first book-length publication on the Casas culture to move out of Di Peso's shadow into new ground.

Whalen and Minnis begin by providing an up-to-date theoretical context for their work, making it possible to plug their data into current discussions of regional prehistory. In this part of the book, the authors sidestep the issue of Mesoamerican-Southwestern interactions and focus on

the internal workings of regional systems. The authors also provide basic information on past research in the Casas Grandes area and on the local environment, making the book a good general introduction to the subject.

The heart of the book is settlement pattern data gleaned from years of survey and supplemental excavations. Without question, Paquimé is the focal site of the Casas Grandes culture; in terms of both site size and complexity of remains it is "off the scale." Based on their initial work, Whalen and Minnis have defined two zones in the vicinity of Paquimé: an "inner zone" up to 30 km from the focal site and a "middle zone" that is some 30 to 60 km from that site. Much of the book contrasts data from the two zones, in an attempt to understand continuity and variability in the Casas settlement system. There is also an "outer zone" of sites that are 60+ km from Paquimé, beyond the project's range—Whalen and Minnis examine those data much more briefly, through the existing literature.

Except for Paquimé itself, the size range for Casas Grandes sites does not vary radically in the inner and middle zones—there are many small sites, fewer large ones, and very few very large ones. On the whole, the evidence points to very modest local hierarchies in settlement, where some sites were simply larger than others and a few sites probably served as local centers. To Southwesternists, none of this will sound unusual. In the details, though, the Casas settlement data assume a distinct and complex identity. Within 15 to 30 km of Paquimé, large "feasting" ovens, ballcourts, and macaw raising appear to form a behavioral package—one that can be found at sites regardless of their size. The same package is found at Paquimé itself, but not within 15 km of that site—or more than 30 km away. Finally, specific elements such as macaw raising and ballcourts recur more than 60 km from Paquimé, but apparently not as part of the same behavioral package.

Turning from description to interpretation and outright speculation (the last to be blamed on me, not the authors), there seems to have been a 30 km "core" area for the Casas Grandes culture, tied to the oven-ballcourt-macaw complex. Furthermore, those living within 15 km of the focal site apparently directed their labor in such efforts to the focal site, possibly explaining Paquimé's "off-the-scale" qualities. This, in turn, hints that Paquimé could exercise a degree of raw power, but only up to 15 km away—sites beyond that ra-



dius were free to compete in the same behavioral arena in which Paquimé excelled. From 30 to 60 km out, local inhabitants were part of a social "periphery" in which the oven-ballcourt-macaw complex is notably absent; people in this peripheral zone presumably had a client relationship with "core" populations and some subset of the periphery's inhabitants must have traveled to the "core" for critical social interactions. Beyond the Whalen and Minnis study area, we may be dealing with independent settlement systems within the Casas Grandes culture area, which interacted with Paquimé but maintained their own social-ritual cycles (just as today, the Pueblo world consists of multiple similar but independent ritual systems). An exception may be the Animas phase sites, whose Ramos Polychrome pottery may indicate a special long-distance client relationship with the complex centered on Paquimé.

At the end of the book, Whalen and Minnis do confront the issue of the Mesoamerican role in Casas Grandes culture. Drawing on their data as well as Di Peso's, they reject the notion that the culture was basically derived from Mesoamerica, instead attributing the southern Mexican elements in the culture to intellectual borrowing by "local political entrepreneurs ... procuring and popularizing Mesoamerican symbols and styles" (p. 199). To provide the context for this "procuring and popularizing" activity, Whalen and Minnis adapt Lynne Sebastian's model of Chacoan leadership to the Casas Grandes area, also citing other studies such as Pauketat's work on Cahokia. What we are left with is a system that had, to a limited degree, the "look and feel" of its Mesoamerican counterparts but whose scale and operation was decidedly Southwestern.

The book also makes two other contributions that deserve mention. First, while Whalen and Minnis bemoan the lack of data on the Viejo period (pre-A.D. 1200), they nonetheless document that

The late Viejo period foreshadows the Medio in many ways: agricultural, pueblo-dwelling populations were located in the major river valleys and were already beginning to expand into upland areas. Wide trade networks also existed. It is, therefore, likely that much of the demographic and cultural context within which Casas Grandes devel-

oped had its beginnings in the Viejo period (p. 197).

This is in marked contrast to Steve Lekson's recent claim that migrating Chacoan leaders found an "empty niche" in the Río Casas Grandes valley, and went on to create the Medio period Casas Grandes florescence.

Second, Whalen and Minnis consider the fall of the Casas Grandes culture, not just its rise. They argue that societies at this scale can reach a point where initially successful strategies cease to work—at which point the society becomes inherently unstable. It is an intriguing argument that could be applied to many other parts of the Greater Southwest.

*Casas Grandes and its Hinterland* concentrates on the region around the focal site of Paquimé. It would be unfair to overlook other contributions to the current renaissance in Chihuahua archaeology—ranging from Schaafsma and Riley's recent book of essays to Kelley and Stewart's recently concluded field studies at the southern margin of the Casas culture, to the ongoing INAH-UNM-MNM suite of excavations, to the exciting studies of Archaic period trincheras sites by Hard and Roney. Together, these studies will eventually revolutionize our understanding of Casas Grandes prehistory. For the moment, however, *Casas Grandes and its Hinterland* takes pride of place as the most important field-based publication on Casas Grandes archaeology in the past quarter-century.

### Book Review *Chaco Reconstructed*

*The Chaco Meridian: Centers of Political Power in the Ancient Southwest*, by Stephen H. Lekson, 1999. Walnut Creek (CA): Altamira Press; ISBN 0-7619-9180-8 hardback, \$62; ISBN: 0-7619-9181-6 paperback \$23.95, 235 pp., 50 figs.

Reviewed by R. Gwinn Vivian, Arizona State Museum, University of Arizona. *Cambridge Archaeological Journal* Vol. 11 No. 1 April 2001 (pp. 142-144)

Stephen Lekson has a reputation as a *provocateur* in Southwestern archaeology, and *The Chaco Meridian* provides an opportunity to voice his concern with what he believes is the failure of many Southwestern archaeologists to stop 'endless fine-tuning' of the regional record. His proposed politi-

cal history of a significantly expanded ancient Pueblo world (most of the southwestern United States, excluding the Hohokam, from c. AD 900—1450) is intended to make us think globally and escape the confines of 'feeble provincialism'. In this reconstruction, he traces the dynastic enterprises of a small (c. 1000) elite group whose three historically related and shifting capitals of Chaco, Aztec and Paquime spanned five centuries and a distance of 720 km (Aztec to Paquime).

Each capital was a 'near-urban' cluster of buildings, a 'ceremonial city' for a large surrounding region. The operational mechanics of these cities were initiated in Chaco Canyon near the centre of the San Juan Basin in northwestern New Mexico around AD 900 and characterized subsequent capitals in varying forms. These included the construction of 'Great Houses' as storage facilities, ritual public architecture and residences for a small elite and their retainers. Elite support came from farmers and craftspersons living in nearby small hamlets whose surpluses were stored in Great Houses for redistribution within the community and region. Agriculture was based on increasingly more dependable and technologically manipulated water sources at each capital. As the functional zone around each centre expanded, communities within the region were integrated through participation in a political-prestige economy based on West Mexican exotics including macaws and parrots, copper bells and shell.

The capital at Chaco climaxed in the early twelfth century and was followed by a new centre at Aztec on the Animas River in the northern San Juan Basin. Aztec functioned from approximately AD 1110 to 1275 when, like most Puebloan settlements in the northern San Juan Basin, it was abandoned. The earlier, relatively short (85 km) move of capital and power from Chaco to Aztec was dwarfed by the shift to Paquime (Casas Grandes) in northern Chihuahua, a distance of 720 km. The ceremonial precinct was smaller than both Chaco and Aztec, and the architecture was of puddled adobe — a transition presaged at Aztec where Aztec North is believed to be of adobe. Paquime began in the mid-thirteenth century and effective government ended by 1450. In an appendix, Lekson notes the meridional alignment and historical position of Viejo Culiacan in Sinaloa with Paquime, Aztec and Chaco and concludes 'more research is necessary'.

But what of the research to support the historical reconstruction? Lekson advises that he has taken data developed by others, combined the arguments 'in a novel way' (p. 151), and supported his reinterpretation through 'circumstantial evidence' (p. 150). This evidence consists of five architectural elements including room-wide platforms (log shelves or beds at the end of, and across the short axis of some rooms), sandstone post-support discs, masonry or adobe colonnades, platform mounds, and triwalled or biwalled structures. None of these features is present in large numbers at any of the sites, and only room-wide platforms and sandstone discs are present at all three cities. Though architectural parallels are important, Lekson argues that the cardinal alignment of the three capitals is more critical because it demonstrates intentional legitimization of Aztec and Paquime by referencing their symbolic position *vis-à-vis* Chaco.

Lekson's historical reconstruction will generate controversy. Persons working in northern Chihuahua, southern New Mexico and Arizona will question the removal of Paquime from a late desert Mogollon tradition and its assignment to the Ancestral Puebloan world. My concerns are somewhat narrower and run the risk of being labelled 'fine-tuning'. Lekson tells us that he has borrowed from past research, but there are gaps in that borrowing as well as alternative interpretations of the empirical record.

Central to the premise of the Chaco Meridian is the concept of a small elite class residing in essentially non-residential Great Houses. To promote managerial efficiency, one would expect the elite to be concentrated — as at Paquime — in a central building. There are fifteen Great Houses in and near Chaco Canyon, though only eight are in Lekson's 'downtown Chaco'. All were occupied at the height of Chacoan power and contain more than 3000 rooms. Though all rooms are not fully contemporaneous, this represents an enormous expenditure of labour in an agriculturally marginal area for a handful of managers in each Great House. Lekson tends not to notice this problem.

He also believes that Great Houses were primarily non-residential. Why? They have all of the features characteristic of 'normal' Southwestern pueblos — contiguous room-blocks composed of door-connected room suites, plazas, kivas, and refuse mounds. Lekson, like others, points to the lack of fire pits in room floors (up to 80 per cent of rooms in excavated Great Houses lack this feature) as evidence of non-domestic use. The tightly controlled excavation of Pueblo Alto (Windes 1987) revealed 7 fire pits in the 15 rooms excavated, but 126 heating pits in the same

rooms. Heating pits average half the volume of fire pits (10 vs. 20 litres) and may be plastered, but show less preparation than fire pits. Heating pits replace fire pits in wood-poor and winter-chilled Chaco Canyon, where special measures to extract the greatest benefit from a scarce resource would have been taken. Though of smaller volume, several heating pits could raise room temperatures equal to a fire pit, and their distribution in several places in a room was more efficient. Great Houses may well have been residential structures and not vacant ceremonial precincts.

Aztec, the second ceremonial city, is crucial to Lekson's thesis, because the Chacoan elite had to spend time some place before moving to Paquime in the late 1200s. Few Southwestern archaeologists deny that groups from Chaco Canyon relocated to the San Juan and Animas River valleys in the late 1000s and early 1100s. What is far less certain is Chacoan occupation of the Aztec complex after AD 1150. Based on his extensive excavations in the Aztec West Ruin, Earl Morris (1919; 1928) concluded that the building was constructed by Chacoans in the early 1100s, abandoned in the late 1100s and then reoccupied in the mid-1200s by a population using classic Mesa Verde ceramics.

Morris' documented break in occupation of the West Ruin has not been confirmed at other Aztec Great Houses because they have not been excavated, but Lekson cites McKenna & Toll (1992) to support 'a continuous architectural history' (p. 75) from 1110—1275 at Aztec. Based on ceramic assemblages and a few non-cutting tree-ring dates, McKenna & Toll do postulate continued use of some buildings at Aztec by 'smaller populations' using various building styles. But the identity of the builders and the magnitude of construction is unclear. Lekson handles the problem of 'Mesa Verde replacement' by downgrading the importance of the Mesa Verde region ('a bit of a backwater', p. 103) and incorporating it within a larger and more prominent (powerful) 'Aztec region'. Thus, Mesa Verde becomes Aztec, and the identification of persons remodelling Great Houses is no longer a problem. Determining the magnitude of construction requires more refined dating of structures in the Aztec complex, but at this point data to confirm a second Chacoan capital at Aztec are extremely tenuous.

Lekson concludes his revised Puebloan history with brief notes on its implications for emergent order, cognitive evolution and archaeological methods. He compares the Chaco-Aztec-Paquime political

structure with Anderson's (1994) concept of Mississippian political 'cycling' and concludes that Chaco was a 'remarkably clean example of "cycling..."' (p. 165) operating on greater geographic scales and longer schedules compared to Southeastern chiefdoms. Lekson attributes the long-term success of his Puebloan dynasty to the invention of abstract space that involved a shift from a human-scale, 'effective' concept of space to a 'created' spatial world that could enhance the prestige of persons using 'space and distance for political power' (p. 167).

Lekson notes his frustration with colleagues who ask for 'proof' to support his revised Puebloan history. I am frustrated by his admonition that 'we allow ourselves to see' (p. 173) this 'extraordinarily visible, knowable example of political continuity across time and tide' (p. 173) using only 'circumstantial, anecdotal, (and) juristic' evidence (p. 171). In 1994 Lekson, Linda Cordell and George Gumerman urged the building of 'a comparative archaeology of politics and their residual landscapes' that would include 'archaeologically-knowable empirical patterns of architecture, settlement, and region . . .' (p. 172). In 1999 Lekson observes that such an archaeology does not exist. Why not use the Chaco-Aztec-Paquime data to initiate just such an archaeology? *The Chaco*

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(Continued from page 5)

quotations are taken from e-mails in a relaxed format, and have therefore been edited for both grammar and clarity. I deeply appreciate the contributions of my fellow ACRA-L subscribers.

As of this writing, in 2001, private-sector CRM is only 29 years old, but the knowledge of its origins is already being lost. A great deal of that loss is due to a lack of reflexive thinking: until recently, private sector CRM was just something we just did, so we could do archaeology or whatever other studies we loved to do. Moreover, the field began as disjointed efforts across the country, with little sharing of information except through individual working relationships. It was only in the past few years that CRM realized that it was, in fact, an industry, and consciously began creating channels for internal communication. Moreover, the roots of private sector CRM were not a concern until it had become a major force in archaeology and in historic preservation in general. This is a good time to be collecting the oral history of the field; some of its founders of the field have died, others have retired or drifted from the profession, and the remaining pioneers will not be around much longer. As shown by the extracts reproduced below, the memories we do have of those early years are getting hazy. By setting the following information to paper (so to speak), I hope to preserve some of our tribal folklore for the next generation.

The linked table provides a state-by-state summary of the information contained in this essay. Before proceeding, I'll repeat a statement often made on ACRA-L, that CRM is much more than archaeology. At the same time, there is no doubt that archaeologists were the core of the emergent CRM industry.

### **The Father of Private Sector CRM: Roger Desautels**

When I began this survey, many CRM professionals (including myself) could not name the first person to do private sector CRM. Fortunately, a few people had memories of this earliest part of the story.

According to Mike Polk, "have always been told that Roger Desautels in Costa Mesa, California [had] the first CRM firm to really operate similarly to how we do today. I can't remember his firm's name, however. His firm began, I believe, in 1962,

and his first large and notable project was a cultural resources inventory of Amchitka Island in the Aleutian Islands prior to the test detonation of a hydrogen bomb."

A corroborating response comes from Ron May: "Roger Desautels formed Scientific [Resource] Surveys, Inc. (SRS) in 1962 and his first report was an archaeology survey of Amchitka Island. This remains today as the first for-profit CRM firm in California. Desautels is deceased, but his children and his widow carry the torch."

May explains Desautels's ability to establish his business as follows: "Roger was a showman, which means he was darn good at marketing archaeology. He managed to convince someone at the Department of Energy and Department of Defense to fund the survey of Amchitka Island and linked the... Antiquities Act with their project. He convinced them that this was a positive public relations move."

Gerrit Fenenga reports that Desautels published a brief account of the origin of his company in *The Masterkey* (Vol. 45, No. 2, pp. 69-71, 1971).

### **..And the Mother: Roberta Greenwood**

If Roger Desautels was the father of private sector CRM, it appears that Roberta Greenwood may claim to be its mother. In 1965, Greenwood excavated Shisholop (CA-VEN-3) under contract to the California Division of Beaches and Parks. A year later, she excavated the Chapel of Santa Gertrudis (CA-VEN-168) and the Ventura Mission Aqueduct, under contract to the California Division of Highways and the Department of Parks and Recreation. She had been doing similar work before 1965, "but not with all-paid crews or with formal public contracts."

Greenwood explains that private sector work was her chosen career path: "I did not aspire to teach or be closeted in a museum, but preferred active fieldwork and research." Incidentally, in 2001 she was awarded the J. C. Harrington Medal from the Society for Historical Archaeology.

### **..Later California Developments**

Ron May writes, "I entered the field in 1970 as a contract employee with the California Division of Highways and Roger Desautels and [his company] split the assignment [with me]. He took Riverside and San Bernardino Counties and I took San Diego and Imperial Counties. I operated as an independent CRM consultant. The state Division of Highways projects led to contract work with the

San Diego State University Foundation in 1971 and 1973. In 1972 I went to work for David D. Smith & Associates, which was one of the earliest post-NEPA and [post-]Section 106 firms in California. I took a leave of absence to do the 1973 Kitchen Creek dig on Interstate 8 but returned to DDS in 1973. DDS&A dominated the San Diego scene until Westec Services and Recon formed in 1973-1974. By 1974, CRM was commonplace in California."

### **...Southwest**

Private, for-profit CRM seems to have started late in the Southwest, perhaps because of the strength of the institutional CRM programs (the CRM era arguably began with a 1950 museum-based pipeline archaeology project in Arizona and New Mexico, and with the subsequent establishment of a permanent highway salvage program in New Mexico in 1954).

The earliest private, for-profit CRM company in the region was probably ARS. In August 1974, Lyle Stone founded Archaeological Research Services in Arizona. He described how it happened: "While in Michigan between 1965 and mid-1974, and while Staff Archaeologist for the Mackinac Island State Park Commission (For Michilimackinac and Fort Mackinac) I had the opportunity (taking one day per week leave from my state job) in late 1973 and into 1974 to work on a part-time consultant basis for Commonwealth Associates in Jackson, Michigan, and thereby had the opportunity to get involved in some very early CRM, helping set up the CRM division, doing research and writing reports, and I liked it. Also, I had a lot of what I thought were new and innovative ideas about archaeology and state parks but my position, while good and stable, wasn't one in which it was useful to rock the boat; I needed an outlet to do some things on my own. In addition, I found myself becoming somewhat of an officious bureaucrat and didn't like the feeling; at that point I knew that I could serve the resource, the profession, and the public in a better way. So... my wife (an Arizona native almost) and I decided to set out for Arizona and go into CRM as our business and be closer to family; we also had two kids at the time and I wanted them to have the Arizona experience. So, partly personal and partly professional. At least I had some freedom of thought away from the university

and bureaucratic atmosphere, and had some specific things in mind that I wanted to do in CRM. My business took off after a while, and I'm still at it full time."

Margerie Green writes, "I believe my company, Archaeological Consulting Services, Ltd., was the second [firm in Arizona]; we started in 1977. It is quite possible that there were others starting up in other parts of the state that we didn't hear about until later because everyone's operation was quite small back then." She adds, "I think the things that convinced clients to go private was the greater flexibility/availability of the little guys, the fact that they were cheaper than universities, and the fact that we weren't associated with a large bureaucracy."

In 1981, after leaving a California teaching job, this author founded a branch office for New World Research in Tucson; a few weeks later Bill Doelle and Linda Mayro returned to Tucson after doing MX missile surveys, and started Desert Archaeology. This was the start of the private sector CRM boom in Tucson.

### **Intermountain States**

Mike Polk provides the following account of the start of private-sector CRM in Idaho: "I was a graduate student at Idaho State University between 1973 and 1975 and worked under the two most prominent archaeologists in the state at the time, Earl Swanson and Bob Butler. I continued to have contacts (and still do) in that state and it was sometime after my departure that CRM as we know it today began there. Idaho State and the University of Idaho did quite a lot of CRM work during the 1873-1976 period, but private institutional work didn't begin until 1977."

"Idaho has never had very many companies. From the most recent *Directory of Idaho Archaeologists* that I have (dated January 1999), there are only, at most, six consulting companies with more than one individual in them (three of which are local, the rest being satellite offices of out-of-state companies). From Lorelea Hudson (now with Northwest Archaeological Associates, Inc. in Seattle), I received the following information... She began, undoubtedly, the first CRM company in the state."

Hudson's information, provided by Polk: "I started my company in 1977; we actually got together in 1976 but I believe the incorporation (Idaho) papers were January 1977. The corporation, Cultural Resource Consultants, Inc. (CRC), was based in Sandpoint, Idaho and the owners were me, Gorge F. Gauzza, Jr., and Gary G. Ayers. All University of Idaho graduates, I might add. Gary and I were

graduate students in Anthro and George received his B.A. in History... I think my last contract at CRC was [in] 1977 or 1988... CRC was always the 'biggest' CRM [firm] in north Idaho... Others... well, Dave and Jennifer Chance had a company in the late 1980s, but that [was] basically a one-person shop... For the most part it was one-person operations, maybe hiring (contracting!!) a person or two for a specific project."

Polk remarks, that private sector CRM did not become commonplace in Idaho until the late 1980s, adding, "Even today, Idaho State University runs a contracting program and gets a fair share of work in southeastern Idaho."

In discussing Utah, Polk reports: "While I know that the University of Utah and Brigham Young University were doing archaeological contract work earlier, I believe (but am not completely sure) that Richard (Rick) Hauck began his company called AERC (Archaeological Environmental Research Corporation) in Bountiful, Utah about 1978. It is still in business under Rick's ownership. Another company that began about this same time, perhaps slightly later, was Utah Archaeological Research Corporation (UTARC), under the ownership of three to four people, including Clay Cook (now out of the field [and] living in California) and Diana Christenson, now archaeologist for the BLM Arizona Strip Field Office in St. George, Utah. UTARC folded in the early 1980s."

In a later e-mail, Polk corrects the founding date for AERC to 1976. He adds that another firm "close on the heels of AERC was K. K. Pelli (company name) of Moab, Utah. That was operated by Lloyd Pierson beginning in 1977. Lloyd is now retired and still living in Moab."

Polk goes on to describe subsequent developments in Utah: "By the early 1980s (before the big energy development business shakeout in 1985-1986), CRM companies were well established in Utah. At that time AERC, UTARC, Abajo Archaeology (in Bluff, Utah), Environmental Consultants, Inc. in Ogden (began in 1981; later to become my company, Sagebrush Consultants), P-III Associates in Salt Lake City (began in 1980), and, perhaps, Senco-Phoenix in Salt Lake City (later moved to Pleasant) were in place."

### Midwest

Adrian Anderson provides the following extended account of the early years of private CRM in Iowa: "When I became SHPO (SLO, then) in 1971... one of

the first tasks became educating the professionals (academics, except for NPS archaeologists at Effigy Mounds National Monument) into the world of 106 and CRM. Everyone wanted contracts--they had been engaged in 'highway salvage' projects since about 1966--and most absolutely refused to lay out a scope of work that required them to complete a project in a timely manner. The first meeting of the Association of Iowa Archaeologists was spent going through the law and rules, and the most acrimonious aspect of the meeting was the [failure] of participants to understand that SHPO could not keep bidders from outside Iowa out of 'their' market. The State Archaeologist wanted to run the contracting--and engage in contracting--no conflict of interest there!"

"I think perhaps Mike Weichman (sp?) may have been one of the first to incorporate as an individual. He soon moved to Missouri, though, working for the state. David Stanley, with his Bear Creek Archaeology, was one of the first to actually form an ongoing business, early in the 1970s."

Michael Weichman provides slightly different information for Iowa. The first firm Weichman is aware of in that state was the Environmental Research Center in Iowa City. Weichman confirms that the Iowa SHPO played a role in encouraging the development of private sector consulting, and adds that such consulting was common in Iowa by 1979-1980.

According to Donald J. Weir, "I don't know who was the first, but I was hired in late 1973 by Commonwealth Associates, Inc., a for profit architecture and engineering firm, of Jackson, Michigan to undertake [an] archaeological project for large utility companies, primarily electrical transmission and power generation [companies]. I was hired by the late Dr. Earl Prahl and was the third archaeologist on staff." Also according to Weir and Tom King, in 1974 or 1975 Prahl was replaced by Jim Fitting. King adds, "Jim came out of academia and shortly after moving to Commonwealth began promoting 'client-oriented archaeology,' Earl moved East to take over the job I'd held at the New York Archaeological Council when I went to NPS-Washington in 1976."

James Robertson adds, "Fitting taught, I believe, at Case Western followed by his tenure as the first State Archaeologist in Michigan. Subsequently, Fitting joined Commonwealth Associates, Inc., which shortly thereafter merged with Gilbert and became Gilbert/Commonwealth, which ultimately gave birth to the independent company Commonwealth Cultural Resources Group, Inc. of Jackson, Michigan (and other office locations), headed by Don Weir, another board member of ACRA (who worked directly under Prahl and then Fitting before taking the

helm himself at C/C and founding CCRG)."

According to Charles Cheek, "When I moved to Oklahoma in 1972, I do not think there were any contract firms based in [the state]; perhaps some from Texas worked in the area. At least the other firms were not on my radar as I was busy with my first teaching job. My wife, Annetta, did not have a job, so she contracted with the Tulsa District Corps to undertake a survey in 1973. She was aware of NHPA and recognized the possibilities for gainful employment in it. We then formed a non-profit firm, Archaeological Research Associates (ARA), to do contract work in that year. (We found out later that there was a number of other firms that had that name in other states.) We became non-profit because we did not want to have to worry about the tax picture and may have felt that the clients would be more responsive to that as well... We were non-profit but had the same issues as for a [for] profit firm."

### **Mid-Atlantic States and Northeast**

According to Joel Klein, "Ed Rutch founded his firm, Historic Conservation and Interpretation, Inc., sometime in the (early?) 1960s—long before NHPA. Ed was primarily an industrial archaeologist but he also did historic and prehistoric archaeology. He was/is based in Newton, N.J."

According to Ron Thomas, "My earliest recollection of a CRM firm operating in the Eastern U.S. was the one operated by Glen Little sometime in the late 1960s. I recall excavating at the Indian Queen Tavern in Charlestown, Maryland."

Charles Cheek expanded on this posting by stating: "Ron Thomas is right. Glenn Little hired me (while [I was] a graduate student) in 1967 to work as crew for his firm Contract Archaeology, Inc. Glenn was a graduate student at Catholic University at the time (where I had been an undergraduate and had done some volunteer work for him...). I think he had been part of a cadre of students who had been mustered to lobby for NHPA in the mid-1960s. In conversations with him at the time, it was clear that he thought that private-firm archaeology was the future of archaeology. I was hired to work on a National Park Service project for Glenn in Washington, D.C. that summer. Harvard Ayers, now a professor at Appalachian State (Ph.D. from Catholic University) was the site supervisor."

"Glenn also had other projects including the Paca House in Annapolis. This was during the restoration of the house and he hired Stanley South, whom he had worked for previously, to direct the project. I don't know if Glenn's firm was first, but it was close, and was directly inspired by the potential of NHPA. Unfortunately, Glenn had heart problems and left archaeology

within a few years of starting his company and I lost track of him years ago."

According to James Robertson, "Alex Townsend was the first archaeologist with National Heritage Corp. (among the earliest firms to consider both archaeology and architecture in preservation), [which was] started by renowned preservation/restoration archaeologist John Milner. This was the predecessor [company to] John Milner Associates, Inc., of West Chester, Pa. (and other office locations). Townsend's successor was Dan Roberts of JMA, a current board member of ACRA."

Dan Roberts amplifies on Robertson's posting: "Bill Macdonald was the first archaeologist hired at National Heritage Corporation of West Chester, Pa. I believe this was in 1972. National Heritage Corporation was founded in 1968, primarily as an architectural restoration firm, and changed its name to John Milner Associates, Inc. in 1977. Alex H. Townsend was JMA's second archaeologist (McDonald left for the University of Michigan in 1975) and I was hired as the firm's third archaeologist in 1976."

Kay Simpson remarks on the establishment of the Cultural Resource Division of Louis Berger: "Dr. John Hotopp founded the division in 1981 out of our corporate office in New Jersey. I've never worked in N.J. so I don't know we fit within the history of the state's CRM program [but] we've been around a long time (in CRM years!). The company of course is much older (founded 1953)."

### **Southeast**

Tom Padgett writes, "The earliest CRM work I know about in North Carolina was done by Contract Archaeology, Inc., a firm hired by the N.C. Dept. of Transportation in 1971 to conduct excavations at the North Carolina Arsenal Site in Fayetteville... The University of North Carolina at Chapel Hill had done some [reservoir] work previously... but Contract Archaeology Inc. is the first private firm I know of for this state."

Thomas Sanders writes, "The first individual/firm to do CRM work in Kentucky on a non-institutional, for profit basis was Ohio Valley Archaeological Research Associates (OVARA)... The year was 1974." He adds, "In 1974 a new State Historic Preservation Officer (Eldred Melton) was appointed in Kentucky. [Melton] brought a professional staff to the SHPO's office. In particular, Section 106 and EO 11593 requirements were enforced. This resulted in numerous requests, starting in 1974, to the University of Kentucky's Department of Anthropology for archaeological assessments on small projects. The Department of Anthropology was not prepared for such work, though they had long been involved in substantial undertakings such as reservoir salvage and, more recently, federal highway construction projects. With the approval of Dr. Lathel Duffield, several graduate students (Lloyd Chapman, Roger Allen, C. Wesley Cowan, and Betty McGraw) went together and



formed OVARA [Ohio Valley Archaeological Research Associates] to deal with these small projects. Lloyd Chapman did several of these small surveys in the weeks before OVARA was formed, and may have been the first private, non-institutional CRM archaeologist in Kentucky. OVARA continued to do these small projects for several years. It was re-formed about 1977 under the name ASK (Archaeological Services of Kentucky), by several of the same individuals."

Sanders concludes by stating that by 1980 there were several private firms working in Kentucky; by 1984 the industry was well established there.

According to Pat Garrow, "I was one of the first in the South to start a CRM program in a private firm. I built a program at Soil Systems, Inc. starting in 1976, that was billing \$2-\$3 million a year by 1980 or so." He latter expanded on this: "I met the people at Soil Systems while employed at the North Carolina Archaeology Branch. [SSI] expressed an interest in starting an archaeology practice at their firm, and first tried to recruit Steve Gluckman, who headed the Branch. Steve told them he would consider it if they would also hire me to do the actual work while he saw to long range planning for the program. They then decided to bypass Steve and offer me the job instead.

"The Soil Systems offer came at a good point in my life. I had just come off a serious illness that had kept me out of work for several weeks, and I had [used] that time to review my career and decide what I really wanted to do in the future. I had already tried teaching at the college level and decided that wasn't for me, and had done a year of barely supported research on a site in northern Georgia, and decided I did not want to live grant to grant. The private sector seemed to be a new and exciting area, and I decided to give it a try.

"I was the first archaeologist hired at Soil Systems, and remained in technical charge of their archaeology practice until I left in 1983 to help my wife form Garrow & Associates, Inc. During my time [at SSI] the program grew to be either the biggest or one of the biggest in the country. Soil Systems was bought by a holding company in 1980, and they began to take real control of the program in 1982. The company was out of the archaeology business shortly after I left in 1983.

"The person who made the decision initially to build an archaeological program was a Senior Vice President in charge of the environmental division. He thought it might eventually bring as much as \$5,000 a month."

J. W. "Joe" Joseph provides additional information on early CRM in the Southeast: "I started work in the southeast in 1976, so a few years late to provide the earliest CRM history around here. At that time the major

players, from my perspective, were the universities (South Carolina Institute of Archaeology and U. Tennessee anthro were my earliest employers). Leslie Drucker and Ron Anthony had started Carolina Archaeological Services (CAS) in SC... between 1974 and 1976, I believe. Pat Garrow had been hired by Soil Systems, Inc. in Atlanta around this time... and was beginning to build SSI's program. Prentice Thomas and Jan Campbell would have established New World Research in Florida [actually Louisiana?] at roughly this same time, and a little later a company called Southeastern Wildlife Services would be created in Athens, Georgia by Hilburn (Billy) Hilstead (later of Law Environmental). [SWS] would include a cultural resource arm headed by Dean Wood--this would evolve into Southeastern Archaeological Services in the late 1970s."

### **Outside the Forty-Eight**

Earl Neller provides the information about Hawaii. He notes contract archaeology projects by the Bishop Museum in the late 1960s, but then provides information on an early non-institutional CRM operation: "In 1971, Francis Ching established Archaeological Research Center Hawaii (ARCH) to do contract archaeology in Hawaii. Early projects were a highway survey and salvage [excavation] and portions of a statewide inventory of historic places for the SHPO. At the time it was considered heresy for anyone to be taking on archaeology besides the Bishop Museum"

According to Leonard Voellinger, "My first non-university experience was with the Arctic Company. In the early 1970s they surveyed the Alaska Pipeline. I worked for them in 1976." In a separate e-mail he explains that "The Arctic Co. was established as a contractor to do environmental work on the Alaska Pipeline, probably by 1973 or 1974."

### **Why Did Private Sector CRM Take Off?**

When private sector CRM got started, it did so in the face of established institutional programs. How did the private sector operations manage this?

As one of the first private sector practitioners, Roberta Greenwood attributes her ability to obtain work to her existing track record: "I already had a substantial body of work which was recognized. [To provide] just one example, the work at the Browne Site (CA-VEN-150), which became SAA Memoir No. 23. I did not count that as a 'first' [private sector job]--even though done in 1959-1960--because it was an unpaid undertaking accomplished with volunteers. I had directed other excavations as well, for UCLA and others, that were not direct contracts to me."

Ron May discusses the growth of the field in southern California: "Tom King served as Chief Archaeologist, University of California, Los Angeles in the late 1960s/early 1970s and promoted archaeology via federal historic preservation regulations. He recruited supporters



from museums, academia, and SRS in his efforts to force the Bureau of Land Management an Army Corps of Engineers to do archaeology in the course of their projects. He got the Society for California Archaeology to host a two-day training course in either 1969 or 1970 for the California Division of Highway and then they created contract positions for 'District Liaison Archaeologists' to serve as go-betweens to take engineering designs to institutional sources for record searches. He appointed me to one of those roles in 1970."

Speaking of the operation started with his wife in 1973, in Oklahoma, Charles Cheek writes: "Actually, we did not have to do much in the way of convincing. We were about the only non-state agency doing work in Eastern Oklahoma. We had credentials (Ph.D. and ABD from U. of Arizona). I suspect we were competitive. Our overhead was ridiculously low, about 15 percent if I remember correctly. It was low only partially because we wanted to be competitive but also because we had no idea how a business, for profit or non-profit, was run."

Cheek states that private-sector CRM was commonplace in Oklahoma by the mid-1970s, "but much of it was from Texas (firms)."

Looking at the Great Basin area, Mike Polk remarks: "I believe the most persuasive part of the equation was oil and gas development in the Intermountain area in the late 1970s. Also part of this trend was oil shale development and the infamous MX [missile] project in adjacent Nevada. Business was exploding and companies were desperate for archaeologists to do clearance projects on well pads and roads and to do geophysical surveys in Utah and surrounding states. I understand from Clay Cook, formerly of UTARC, that in 1979 he had a three week backlog of well pad surveys charging out at \$1,000 each! At this time in Laramie, Wyoming, John Greer and his company Archaeological Services, Inc. had 150 people stationed in various places in the field, from New Mexico to Montana, South Dakota, and Idaho. Universities and colleges with their schedules, long time frames, and academically oriented approaches were likely a frustrating option for private development people. Private enterprise was a welcome addition to the field."

In a later e-mail, Polk adds to this thought: "While oil and gas development was certainly the impetus for private enterprise to develop in CRM [in the Intermountain area], the underlying causes obviously relate back to increasing understanding and enforcement of NHPA and NEPA requirements by the BLM and, to a lesser extent, the USFS. Probably adding to this was the fact that most of the BLM districts were, at the time, hiring archaeologists for the first time so there was a person in each district beginning to enforce the requirements, whereas earlier it was generally up to a recrea-

tion planner or a generalized environmental office. While the BLM and USFS would say that their personnel would and could carry out inventories for the developers, the waiting time was usually one to two years. The urgent need for drilling and exploration thus demanded more immediate inventories... Hence the hiring of cultural resource specialists, particularly those who could respond most rapidly, i.e., private firms."

In writing about the success of CRC, Inc., started in Idaho in 1977, Polk notes that the founders were "local university products" so that "contacts and legitimacy had already been established" with potential local clients.

Writing about the East, J. W. "Joe" Joseph states, "From my experience there were two models of privatization. The first was engineering firms that branched into environmental studies and were then seeing a need for archaeology. This was the Soil Systems model, with Pat Garrow in Atlanta. [SSI was] Tom Wheaton's first employer in archaeology about 1977. While I never worked for SSI I did work for Commonwealth on the Russell Reservoir Project in the late 1970s and early 1980s. I think projects like Russell... Cooper River Rediversion, [and] Tennessee Tombigbee were too big for any university to take on and so opened the door for other CRM players, some of whom, such as SSI, Commonwealth, and Louis Berger, were becoming almost national in scope by the late 1970s."

"The other model was independent archaeologists (in your CRM history make sure you have a place for the role of couples--Leslie Drucker and Ron Anthony of CAS, Prentice Thomas and Jan Campbell of New World, in 1984 Pat and Barbara Garrow, who would become my employers at Garrow & Associates) who saw a chance to make a living in something other than academic settings (or, conversely, who couldn't find academic or other university jobs)."

My own impression is that the institutions unwittingly helped set the stage for their displacement by private firms. Until the 1960s, "salvage archaeology" had been done by those institutions in accordance with long-standing "gentlemen's agreements" under which each institution had its own territory or research interests (or both) and other institutions did not trespass. "Salvage archaeology" done in this milieu was consciously non-competitive. In the 1960s, however, institutions (or perhaps more precisely, a new generation of professors at those institutions) began actively competing with each other over the rapidly growing funding pool in salvage archaeology, and their efforts to get a crack at contracts helped turn the funding process into one that was openly competitive. This made it easier for private firms to break into the contract archaeology game.

This personal impression is supported by Leonard Voellinger's observations. He states, "During the late 1960s and early 1970s numerous professors and re-

search assistants began 'moonlighting' and hiring graduate students to assist them with projects. I suppose these moonlighting professors were the incipient professional CRMers." In a later e-mail, Voellinger provides his personal experiences along these lines: "I came into contract work in the early 1970s, as a student at George Washington University in D.C. We did contract work for the Corps of Engineers along the Potomac River, and [for the Washington Suburban Sanitary Commission] along the Anacostia River... The P.I. was a professor, and my pay checks came from the University... Later he went to work for the Arctic Company's subsidiary, Iroquois Research Institute, and hired me to do more Corps work... Early in my career in CRM I came across lots of people (namely Rollin Pangborn in Missouri, C. Wade Meade in Louisiana, [and] Gregory Perino in Oklahoma and Iowa) who had been working for professors at universities, as para-professionals who went out on their own (Meade was a history teacher doing archaeology)--as well as professors who were (consulting) (and still do)."

The emergence of open competition among institutional sources of CRM (including those moonlighting professors)--in lieu of the former exclusive institutional turfs--helped set the stage for competitive private-sector CRM.

In 1976, the field was well enough established itself to merit a publication edited by William K. McDonald: *Digging for Gold: Papers on Archaeology for Profit* (Museum of Anthropology, University of Michigan, Ann Arbor). The data gathered through the ACRA-L poll supports the idea that by that year, private, for-profit CRM was spreading rapidly in the United States. The poll results also indicate that the rapid growth of the field was preceded by years of effort by a few pioneers. Their early work undoubtedly was critical in building a sense among clients that the private sector was a legitimate alternative to institution-based programs. Much of the current demand for CRM in this country is derived from the National Historic Preservation Act and other federal law, but nothing in that law mandated the emergence of a private industry to provide CRM services. Those of us who routinely provide such services on a private, for-profit basis owe a great deal to the handful of professionals who first did CRM as a business.

### **Research Guide to Historical Archaeology in Arizona**

John Giacobbe <JGiacobbe@stantec.com>

*Historical Archaeology in Arizona: A Research Guide* (researchguide.pdf) is now available to download from the Arizona State Parks website.

Compiled by James E. Ayres, Carol Griffith, and Teresita Majewski with contributions by the SHPO Advisory Committee on Historical Archaeology, this guide will direct you to resources for researching a historical place or person in Arizona. Categories include maps, photographs, architectural plans and drawings, local histories, mining records, newspapers, and more. The appendices include bibliographies of material culture sources and background resources as well as historical archaeology reports. An extremely useful tool for researching in Arizona.

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Mary Kwas <mkwas@UARK.EDU>

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### **Books on Bottle Maker and Potter Marks**

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*Bottle Makers and Their Marks* by Julian Harrison Toulouse has been reprinted and is again available from The Blackburn Press. Markings are organized in a dictionary-like format, with extensive cross-references, to facilitate identification. Dates, company histories, and human interest vignettes are included in the listings. There is also a section on foreign marks to make this guide as complete as possible.

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*Marks of American Potters* by Edwin Atlee Barber (originally published in 1904) is also available

## NewsNotes

again from the Blackburn Press.

The first attempt to describe the marks of American potters was made by Edwin Butler in his *Pottery and Porcelain of the United States* in 1893. In that book, less than 100 varieties, found principally in earlier wares, were described. Prior to that time none of the manuals on potters marks contained any reference to the United States.

The book which we have reprinted (ISBN 1-930665-41-5) includes the marks used by factories, patterns, workmen or decorators in America to the time of this book's original printing.

For more information see:

< [www.blackburnpress.com/marofampot.html](http://www.blackburnpress.com/marofampot.html) >.

## Current Research

(Continued from page 14)

trace the provenance of other botanical resources in the Chacoan redistribution system, be they pine logs or corn cobs.

We thank K. Rylander for guidance on wood anatomy; J. Patchett, C. Placzek, and W. Graustein for useful discussions on isotope geochemistry; C. Hagerdon and T. Blackhorse for permits to work on National Forest and Navajo lands; D. Ford and J. Stein for collaborations with the National Park Service and the Navajo Nation, which cosponsored this study; S. T. Jackson and P. S. Martin for editorial comments; D. Potts and R. Steidl for statistical guidance; and R. Warren for retrieving many of the archaeological samples from the Laboratory of Tree-Ring Research collections.

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## In Sympathy

"Sorry for this mess. This newsletter will be my last. A virus has killed my computer. There will not be another newsletter until a new editor is found. If you are interested, please contact anyone on the board."

Jeff Kaake, Editor  
*El Paso Archaeology*  
October 2001

## New Mexico Archeological Council

NMAC is a nonprofit organization whose purpose is to maintain and promote the goals of professional archeology in the State of New Mexico, in a manner consistent with Section 501(1)(6) of the Internal Revenue Code.

Its goals are:

- Promoting archeological research within New Mexico, and disseminating knowledge arising from that research.
- Promoting awareness of New Mexico's cultural resources among public agencies, corporations, and members of the public.
- Encouraging the legal protection of cultural resources.
- Encouraging high standards for professional archeology.

***Please send membership inquiries and dues to NMAC at the address shown below.***

## NewsMAC

*NewsMAC* is a quarterly newsletter concerned with cultural resource management and archaeological research in the Southwest. It is published for NMAC members - dues are \$20.00 per year for individuals; \$35.00 for sponsors; and \$35.00 for institutions.

NMAC encourages and gives priority to publishing member contributions to *NewsMAC*. They may be submitted in four ways (in descending order of preference):

- Contained within an e-mail message.
- As an unformatted text file attached to an e-mail cover message.
- As an unformatted text file contained in a PC-compatible floppy disk.
- Printed, via U.S. mail or via fax.

Articles or letters to the editor should be sent to

Alan Shalette, NewsMAC Editor  
<AIShal@aol.com>  
5294 Mesa del Oso NE  
Albuquerque, NM 87111  
(505) 291-9653 (voice & fax)

## News NMAC

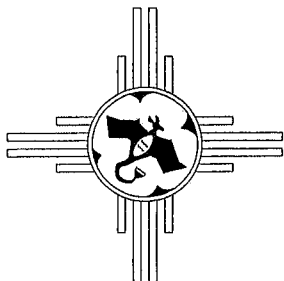
NEWSLETTER OF THE NEW MEXICO ARCHEOLOGICAL COUNCIL

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# News NMAC

NEWSLETTER  
OF THE  
NEW MEXICO  
ARCHEOLOGICAL COUNCIL

2002 Number 2

April 2002

## **Focus on Lekson's Chaco Meridian Theory**

See Issues & Viewpoints on page 9.

### **Reviews by**

Mark D. Varien

Kevin S. Blake

Winifred Creamer

Stephanie M. Whittlesey

David A. Phillips (note)

## **The Maya and Chaco Meridians**

By James Q. Jacobs

## **NMAC Membership Meeting Mar. 20 in Albuquerque to be Highlighted by Hands- on Workshop With the Dorothy Kerr Big Bead Mesa Collection**

See President's Report.

## **NMAC Special Publications #1 & #2 to be Reprinted**

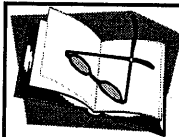
See Secretary's Report on page 4.

## **Plan for Albuquerque Archaeology Days**

See NewsNotes on page 20.

USPS **Irradiation** is Destroying the Mail  
See NewsNotes on page 23.

**Last date for contributions to  
NewsMAC 2002 (3) will be  
June 14, 2002.**



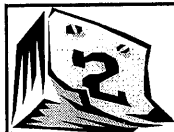
## **President's Report**

Mike Bremer

It has been a challenging and informative first three months of my term as President of the New Mexico Archaeological Council. My learning curve has been steep and my familiarity with the inner-workings of the Council has expanded. If it were not for the Bill Dolemans, the June-el Pipers, the Alan Shalettes, the Kathy Roxlaus and the Lou Haeckers of the world I would be more lost and floundering. I said in my last note to you that membership and membership participation were two of my largest concerns with regard to the Council. Nothing I have learned in the last three months has changed my mind on that.

At Executive Committee meetings we have forged a path for the future of the Council but it is dependent upon increasing membership and members participating in their organization. It is also dependent upon asking students and avocational archaeologists to participate in the Council. Alan Shalette showed the Committee a graph depicting the trend in Council membership for a number of years. We saw the typical peaks and valleys for membership that all regional council's experience, however, the last five years show a more disturbing trend. There is a steady decline in membership and participation in the Council that is attributable to more than the expected fluctuations. I am sure this confirms the intuition of many who participate actively in the Council. I have heard references "...we're getting longer in the tooth and no one appears to be replacing us in the profession." Whether the downward slide in NMAC participation is representative of a general decline in the profession is something I leave for future fire-side discussion but I think it should make every member of NMAC stop and think about what they

(Continued on page 3)



## Calendar

### NMAC

Apr 15

**NMAC 2002 Grant Awards** will be announced.

Apr 18

Santa Fe

**Pueblo Perspectives on History and Preservation in the Homeland** – Past as Present lecture by Mr. Herman Agoyo, Tribal Council Member and Director, San Juan Pueblo Realty Office. At the Forum, College of Santa Fe. Begins at 7:00, College of Santa Fe, 1600 St. Michaels Drive; refreshments follow. \$5.00 at the door. Info: NM/HPD (505) 827-6320; *NewsMAC* 2001(4) pg. 15.

Apr 20

Albuquerque

**General membership meeting** – 10:00 a.m. to 12:00 noon. At the Bureau of Land Management Building on Montañito. Hands-on workshop with material culture from the Big Bend Mesa and the Gobernador area from 1:00 p.m. to 4:00 p.m.

T.b.a.

**Mimbres Workshop**

T.b.a.

**Dinetah Workshop**

### Other

Apr-May

Albuquerque

**Albuquerque Archaeology Days** – see pp. 20-21.

Apr 5-6

Albuquerque

**Eleventh Albuquerque Antiquarian Book Fair** – benefit for the Maxwell Museum archives & library. Info: Alan Shalette (505) 291-9653 or < AISHAL@aol.com >; see < www.unm.edu/~maxwell/aabf.html >.

Apr 6

Lubbock TX

**Southwestern Federation of Archeological Societies 38th Annual Meeting** – hosted by the South Plains Archeological Society at the Lubbock Lake Landmark. Registration: Susan Shore, Lubbock Lake Landmark, P.O. Box 43191, Lubbock TX 79409-3191.

Apr 11-13

Las Cruces

**New Mexico-Arizona Joint History Convention** – at the Las Cruces Hilton. Info: Annual Conference Program, P.O. Box 1912, Santa Fe, NM 87504; < www.hsnm.org >. Fee.

Apr 18

Albuquerque

**Toward a Linguistic Prehistory of the Southwest** - Journal of Anthropological Research Distinguished Lecture by Prof. Jane Hill, Regents' Professor of Anthropology and Linguistics, Univ. AZ; past-President of the American Anthropological Association and Editor of *Language and Society*. 7:30 pm in the UNM Anthropology Lecture Hall, room 163, Building 11, west side of main campus. Free.

Apr 19

Albuquerque

**What's wrong with Hill's Proto-Aztec maize complex reconstruction?** - brown bag lecture by Prof. Jane Hill (see Apr 18 listing). 12 noon in Anthro. Room 178, Building 11, west side of main campus.

Apr 27-29

Silver City

**New Mexico Heritage Preservation Alliance Annual Conference** – theme will be *Enchantment at the Speed of Life, Preservation on New Mexico Time*. Contact Julianne Fletcher, New Mexico Heritage Preservation Alliance, 505-989-7745. Info and register online at < http://www.nmheritage.org/ >.

May 3-5

Farmington

**Archaeological Society of NM Annual Meeting** – at San Juan College, hosted by the San Juan Archaeological Society. Info: Dr. Joe Simmons, Pres., SJAS, P.O. Box 118, Flora Vista NM 87415; (505) 326-0193.

May 10-19

**New Mexico Heritage Preservation Week**. Statewide schedule of events: < www.nmmnh-abq.mus.nm.us/hpd/news/outreach\_cal\_prelim.htm >.

*Calendar continued on page 3.*

## NEW MEXICO ARCHEOLOGICAL COUNCIL

P.O. Box 25691  
Albuquerque NM 87125

### Web Site

< HTTP://WWW.UNM.EDU/~VANPOOL/  
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### NewsGroup

< NMAC-L@LINUX08.UNM.EDU >

## 2002 OFFICERS

**President – MIKE BREMER**

(505) 438-7846

< MBREMER@FS.FED.US >

**President-elect – LARRY BAKER**

(505) 632-2013

< SALMONRUIN@OUTERBOUNDS.NET >

**Vice President – JOHN TORRES**

(505) 327-6115

< JOHN@LITHICRESEARCH.COM >

**Treasurer – BILL DOLEMAN**

(505) 277-5853

< WDOLEMAN@UNM.EDU >

**Secretary – KATHY ROXLAU**

(505) 247-4933

< ROXLAU@TTNUS.COM >

**Editor – ALAN SHALETTE**

(505) 291-9653

< ALSHAL@AOL.COM >

## COMMITTEES

**Education – CHUCK HANNAFORD**

(505) 827-6343

< CHANNAFORD@LVR.STATE.NM.US >

**Grants – JUNE-EL PIPER**

(505) 883-6875

< MJPIPER@UNM.EDU >

**Legislative – OPEN**

**Publications – OPEN**

## President's Report

(Continued from page 1)

want for the future.

Whether you like it or not, the New Mexico Archaeological Council is at a crossroads. If we do not stimulate growth and participation in the organization a time will come when we do not have the impetus or resources to carry the organization through. I strongly recommend that all members of the New Mexico Archaeological Council attend the general membership meeting between 10:00 a.m. and 12:00 p.m. on April 20<sup>th</sup>, 2002, at the Bureau of Land Management Building on Montano. Be prepared to come to that meeting to discuss the future of NMAC and to volunteer to participate in Council activities. We need active volunteers to participate in organizing workshops and seminars. We need chairs for committees including Publications and Legislative. Also, we have a special treat in store for the afternoon. We will be conducting a hands-on workshop with material culture from the Big Bead Mesa and Gobernador area from 1:00 p.m. to 4:00 p.m.

Rather than end on a note of worry I would like to conclude by saying that NMAC is solvent, we have held very successful workshops in the past two years, the November Fire Symposium was a tremendous success. Finally I would like to say that as a NMAC member I am extremely proud that NMAC and New Mexico have Dr. Lynne Sebastian serving as the new president of the Society for American Archaeology. We wish Lynne the greatest of success and we trust her to carry concerns of regional



## Secretary's Report

Kathy Roxlau

Since the start of the new year and the new Executive Committee, there have been two committee meetings, on February 10 and March 9. The following is a summary of the discussions, decisions, and motions made at those two meetings.

The Executive Committee has been reviewing how NMAC functions internally, and has come up with some ideas to standardize how some functions are carried out. The Executive Committee

## Calendar

*Calendar continued from page 2.*

**May 13-17**  
Santa Fe

**Grantsmanship Training Program** - at the New Mexico State Library, Room 2027, 1209 Camino Carlos Rey, Santa Fe, New Mexico 87507. Hosted by the New Mexico State Library. Fee: \$775; scholarships available. Info: Peggy Medina Giltrow, 505-476-9714 or < pgiltrow@stlib.state.nm.us >. Register online at < <http://www.tgci.com/training/tuireg.htm> >.

**May 13-31**  
Tucson AZ & Chaco

**Field School in Archaeological Tree-ring Dating.** See page 22.

**May 24 -27**  
Dubois WY

**American Rock Art Research Association 29th Annual Conference.** Info: < [www.arara.org](http://www.arara.org) >, or contact ARARA, AZ State Museum, University of Arizona, Tucson, AZ 85721-0026, Attn: Sharon Urban

**Jun 10-14**  
Albuquerque

**Archaeological Damage Assessment Class** - hosted by the NM Historic Preservation Division. For Archaeologists employed by federal, tribal, state and local government agencies and the private sector who may be called upon to carry out damage assessments in archaeological violation cases. Fee. Info: Glenna Dean (505) 827-3989 < [gdean@oca.state.nm.us](mailto:gdean@oca.state.nm.us) >.

**Jul 13-14**  
Santa Fe

**Sun Mountain Gathering** (see Lab Report in NewsMAC 2002(1) on page 17).

**Aug 8-11**  
Pecos NHP

**2002 Pecos Conference** - see page 23.

**Sep 28**  
Philadelphia PA

**Ethics and the Practice of Archaeology** - symposium at the University of Pennsylvania Museum. Abstracts of papers (up to 250 words) should be sent by 15-Mar-02 to: Ethics Symposium, 325 University of Pennsylvania Museum, 33rd and Spruce Streets, Philadelphia, PA 19104. FAX: 215-898-7462. Info: contact < [ethics@museum.sas.upenn.edu](mailto:ethics@museum.sas.upenn.edu) > or < [www.museum.upenn.edu/Ethics](http://www.museum.upenn.edu/Ethics) >.

**Oct 18-19**  
Las Cruces

**12th Mogollon Archaeology Conference, Biennial Meeting** - contact Terry Moody or William Walker at Department of Sociology and Anthropology, Box 3BV, New Mexico State University, Las Cruces, NM 88003; 505.646.2148, 505.646.7006; < [temoody@nmsu.edu](mailto:temoody@nmsu.edu) >, < [wwalker@nmsu.edu](mailto:wwalker@nmsu.edu) >.



## Secretary's Report

has decided the time has come for at least some of the sub-committees to develop policies and procedures for conducting their various activities. This is especially important for those committees that acquire donations or disburse funds. To start, both the Grants Committee and the Education Committee have been requested to develop draft policies and procedures for review and acceptance by the Executive Committee. In addition, NMAC has ceased to accept contributions to the Education Fund until the policy and procedure for this committee has been established. The Executive Committee is also considering whether the sub-committees should have a separate formal budget that is approved annually. Another topic of discussion is how sub-committee chairs are selected, which currently is by volunteering. It has been suggested that the sub-committee chairs be selected on an annual basis, thereby making a formal, year-long commitment. These topics are still under discussion, so if you have any ideas about them, please let us know.

The deadline for grant applications was March 15. June-el Piper is putting together an ad-hoc committee to review the applications and make selections. Chuck Hannaford has revitalized and updated the Speaker's Bureau list for the Education Committee. We now have 22 speakers available. Lynne Sebastian has resigned from her post as Legislative Committee chair, due to her new position as SAA President (congratulations Lynne!). If you would like to be on this committee or even chair it, let Mike Bremer know – there's always lots to do.

Our publications seem to be very popular, so we are reprinting Special Publications 1 (*Current Research on the Late Prehistoric and Early History of New Mexico*) and 2 (*Soil, Water Biology and Belief*). These volumes are thick ones, so they'll be selling for \$25 each, plus shipping and handling. June-el is also printing more UTM templates – if anyone needs one, let her know. Bill Doleman has undertaken a huge task of reviewing our financial books to get us in position for legal maneuvers for the Foundation, explained below. Alan Shalette reported that Harvard wants to receive copies of NewsMAC – they have been added to our list of organizations receiving complimen-

tary copies.

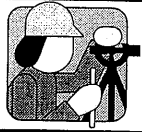
Alan Shalette and Bill Doleman have continued to work toward the incorporation of the New Mexico Archaeological Foundation (NMAF), which will be a separate though connected entity to NMAC. It will be a long journey through pages and pages of forms, instructions, and state and federal agencies, but will be well worth it. NMAF will eventually take on most of those NMAC functions involving money (including education, grants, and NewsMAC) due to NMAF's hopeful establishment as a nonprofit entity. If you have any advice to give or would like to help, give either Alan or Bill a call.

The number of current memberships is very low this year. In an effort to increase membership, the Executive Committee has decided to produce a brochure to attract students and those just out of college. Speaking of membership – don't forget the General Membership meeting on April 20<sup>th</sup> at the BLM office in Albuquerque. The membership meeting will run from 10 am until noon, and then Paul Neugent will talk about his work with Navajo ceramics from 1 to 4 pm. He is bringing with him the Dorothy Kerr collection from Big Bead Mesa for everyone to look at – you won't want to miss this!

Mike Bremer and Bill Doleman met with Elmo Baca, SHPO with the Historic Preservation Department, to discuss the status of the Historic Preservation week funds that NMAC manages for HPD. NMAC is set to manage the funds again for this year's preservation week. NMAC is also helping to run the Past as Present Lecture Series and manage the financial aspects.

John Torres and Chris Turnbow are setting up two workshops this year, and perhaps a third. The Mimbres and Diné workshops are being planned and the membership will be notified as soon as there are details determined. There is also the potential for a lithics workshop. If you would like to help out with any of these, please let John know – again, there is lots to do.

The Executive Committee has decided to maintain three collections of NewsMACs. The archive collection will be stored at the Laboratory of Anthropology, and two accessible repositories will be kept at UNM's Zimmerman Library and Clark Field Library at the Maxwell Museum. Alan Shalette and Lou Haecker are working to identify which issues are missing, and they may send out an email for help in filling in the gaps.



## Current Research

### ***The Pajarito Trails Project: Studying the Cultural Landscape at Tsankawi, Bandelier National Monument***

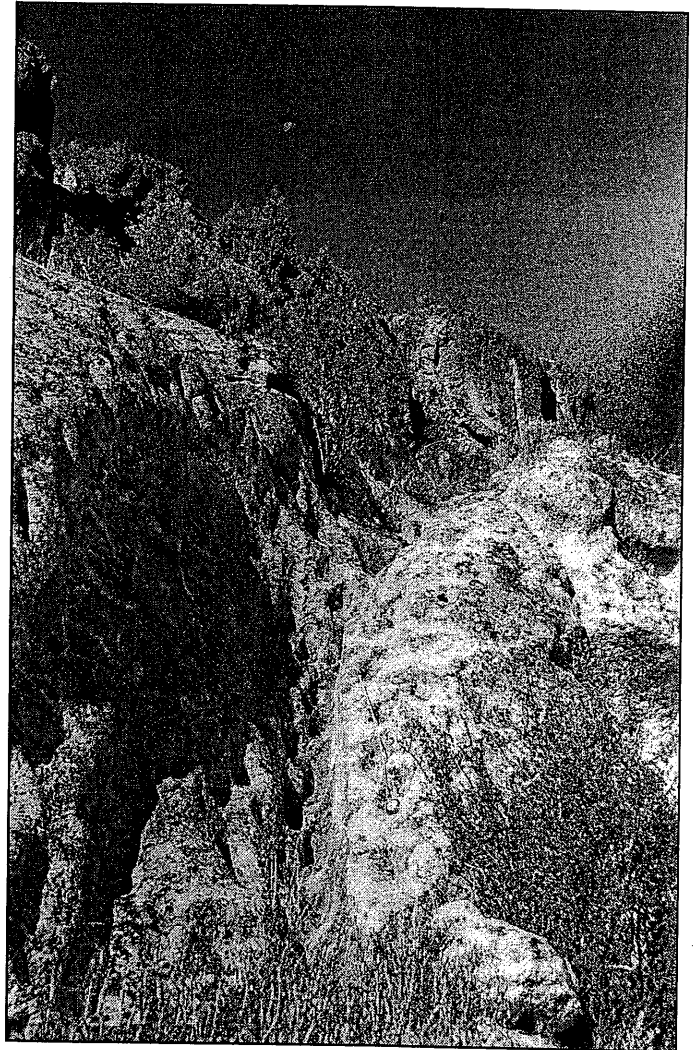
James E. Snead <jsnead@gmu.edu>  
George Mason University

Summer 2001 saw the continuation of the Pajarito Trails Project, a multi-year effort to record landscape features reflecting movement across the Pajarito Plateau by Pueblo populations from the Pre-Columbian era through comparatively recent times. Conducted in cooperation with Bandelier National Monument and Los Alamos National Laboratory, the project was funded by the Friends of Bandelier and intended to collect research and management information from a class of archaeological evidence poorly documented by traditional strategies. Since 1999 trails, steps, stairs, and related features have been recorded in nine study areas: Capulin Canyon, Frijoles Canyon, Lummi Canyon, Portrero del Rito, Otowi, Sandia Canyon, Tsankawi, White Rock Canyon, and Yapashi. Reports of the initial season of research are on file with the relevant agencies and at NMHPD.

The brief 2001 field season focused on the Tsankawi subsection of Bandelier. Approximately 1/3 of Tsankawi Mesa had been systematically examined in 1999, resulting in GPS/sketch maps documenting 37 distinct trail segments on the west and southwest-facing slopes of the mesa. Using field data from the NPS Bandelier Archaeological Survey as guide, last year's work extended coverage to include the entire mesa. In four days of fieldwork James Snead and Howard Newman documented an additional 37 trail segments, for a total of 74. Many of these features were the familiar grooves worn into the tuff bedrock, but substantial staircases pecked into steep stone faces were also recorded. Taken together these segments measured approximately 1.5 km; the total length of the Tsankawi trail network is now estimated to exceed six km.

One interesting aspect of the analysis is evidence for differential use of the trails by modern tourists and the Ancestral Tewa occupants of Tsankawi pueblo (LA 211). The current flow of movement at the mesa parallels the slope, linking cavates and

other objects of visitation on the mesa's south side with routes to the parking area and the two ladders that provide access to the mesa top itself. Most of these trails follow traditional routes, and heavy modern use is indicated by the white scuffed tuff. Unlike recent visitors, however, the original inhabitants were also interested in moving between residential areas on the mesa and agricultural areas in the valleys below. Several impressive staircases that provide access up and down the mesa are thus quite well-preserved and show little sign of recent use. Overall, modern impact on archaeological trails at Tsankawi is measurable, but not severe. More significant, however, is the wearing of new routes as a byproduct of visitors walking off-trail, negatively affecting the pockets of vegetation and topsoil preserved in these areas and disrupting the archaeological context of the vicinity.



Tsankawi North Staircase. Photo by James Snead.

## Current Research

Another significant aspect of the 2001 season was the recording of several trail segments that descend the north side of Tsankawi Mesa. These routes are away from modern traffic and, obscured by vegetation and the steep slope, were largely missed during earlier surveys. Nonetheless they reflect the organization of the greater Tsankawi community, linking the mesa top pueblo with the contemporary site of Duchess Castle (LA 40) in the valley below. It is also clear that trails led from this point to the mesa immediately north, there joining major routes eastward to the Río Grande, and to northeast to Otowi (LA 169). Several of these segments are modified, with steps and handholds cut into bedrock clefts; one of these, dubbed the "Tsankawi North Staircase," began at the base of a sheer section of mesa rim that may have originally been accessible only by ladder.

When viewed in the context of other trails recorded on the Central Pajarito Plateau, the Tsankawi trails provide insights into the regional organization of Ancestral Pueblo communities in the Coalition and Classic periods. The major regional trails date from at least as early as the Coalition period, and show evidence of use through relatively recent times. Tsankawi, in contrast, is relatively isolated from this network, suggesting that it represents a relatively brief episode in the long history of the region. In contrast, the labor invested in stairs and staircases on Tsankawi Mesa suggest an interest in establishing the community as a permanent fixture of the topography. Similar evidence from the Otowi area and Frijoles Canyon also suggests that Classic-period communities may have perceived formal trails as a category of public architecture, perhaps in some way symbolically linked with local identity. Further research on the Pajarito trails will provide new windows on the Ancestral Pueblo landscape, and it is evident that walking in the footsteps of these forbearers will provide distinct and valuable perspectives on their

lives.

### *A Tale of a License Plate*

Harding Polk II and David A. Phillips, Jr.  
SWCA Environmental Consultants

In 2001, during a survey near Whitewater in Grant County, we located a homestead (LA 133879) containing a license plate. The plate was rusted and the paint long gone, but the embossed lettering allowed us to read it. The license plate number was "2113"; to one side, "N" was embossed over "M" over "16." The last two digits indicate the year 1916.

The first New Mexico license plates were issued in 1912. Archival research revealed that as of 1916 there were at least two automobile dealerships in Silver City (Dodge and Ford), and possibly a third. Nonetheless, it was surprising that there would be a registered vehicle in this remote area, especially one owned by a homesteader, more than eight decades ago.

To our further surprise, automobile registration records for 1916 are still in existence, at the N.M. State Records Center and Archives. The license plate had been registered to Benjamin Black of Whitewater—but at the time, the homestead was occupied by Frederick Owen, his wife Janie, and two children. It is unclear why Black's license plate (and possibly parts of his car) ended up at LA 133879, but the records do tend to confirm the



Fig. 1 - Travel around Grant County, 1916. (Photo Courtesy of the Silver City Museum.)

## Current Research



Fig. 2 - One of the Perils of Travel in New Mexico, 1916. (Photo Courtesy of the Silver City Museum.)

initial suspicion that the homesteader could not have afforded a car.

This vignette can be seen as yet another cautionary tale: the obvious inference, that a license plate indicates the ownership of a car, may be false. On a more practical level, we wanted to share our discovery that records still exist for at least some early license plates, and that digging out that information may help archaeologists interpret early 1900s sites. For those who wish to pursue the subject, Ms. Charlotte Valdez of the Vehicle Services Bureau, N.M. Motor Vehicle Division has prepared a handout titled "Highlights of New Mexico Motor Vehicle License Plate History." This handout can be obtained from Ms. Valdez at the MVD.

### CCC Camp Newsletters

Mike Polk < SAGEB@aol.com >  
Sagebrush Consultants, L.L.C.; Ogden, Utah

I was recently searching for information on the Civilian Conservation Corps (CCC) and ran across a web site that might be of interest to those doing research on the CCC. It is a library of camp newspapers. I was specifically searching for ones in Utah and found 114 different newspapers represented for the state. Copies of the newspapers on the web site can be ordered as well. It can be

searched by state, year, name, or camp number. Go to: < <http://www.crl.uchicago.edu/DBSearch/Ccc.asp> >.

### Aztec Ruins Seeks Old Photos

*Farmington Daily Times* 26-Jan-02

Officials at Aztec Ruins National Monument are asking the public for help in researching the historic appearance of the park. To that end, staffers are looking for photographs taken prior to 1960.

"We hope that people in the community who visited the park as children may have photos from 40, 50 or even 60 years ago," said Superintendent Stephanie Dubois. "That will help us understand what the monument looked like in

its early days."

Views are sought of the visitor center's interior and exterior as well as the parking lot, picnic area, area trading posts and other local features. More information: Park Ranger Tracy Bodnar at 505-334-6174, ext. 31.

### University of Colorado Field School at Bluff, Utah & Cañada Alamosa NM

Steve Lekson < [lekson@stripe.colorado.edu](mailto:lekson@stripe.colorado.edu) >  
University of Colorado, Boulder

The University of Colorado Field School, May 19 to June 21, 2002, offers a remarkable opportunity to learn Southwestern archaeology at two extraordinary places: Bluff, Utah and Cañada Alamosa, New Mexico. Research at Bluff and Cañada Alamosa addresses a key question in Southwestern archaeology: 13<sup>th</sup> century "Anasazi abandonments", when thousands of people left Mesa Verde and other sites in the Four Corners region.

Bluff is a very small town on the San Juan River, in the canyonlands of southeastern Utah – the heart of the Four Corners "Anasazi" country. The University of Colorado will continue its nationally recognized work at the Bluff Great House, and begin major new research at a large complex

## Current Research

of 13<sup>th</sup> century sites – the era of “Anasazi abandonments”. Look at <[www.colorado.edu/Carillon/volume10/stories/6\\_bluff.html](http://www.colorado.edu/Carillon/volume10/stories/6_bluff.html)>

Cañada Alamosa is a deep gorge between the San Mateo and Cuchillo mountains, a day's drive northwest of El Paso – in the ancient Mimbres region. A huge spring creates an oasis of rugged beauty, surrounded by ruins. One of the largest, Pinnacle Ruin, appears to be a village of “Anasazi” people, who abandoned their homes in the Four Corners and migrated into the Mimbres region. Fieldwork will focus on Pinnacle Ruin. At <[www.archaeology.org](http://www.archaeology.org)> -- click “back issues”, “Sept/Oct 2001”, “Flight of the Anasazi”

Bluff and Cañada Alamosa, in very different parts of the Southwest, are two ends of one question: “Anasazi abandonments”. But each area has unique history. The structure of the Field School allows students to learn Anasazi prehistory at Bluff, and Mimbres area archaeology at Cañada Alamosa. Students will form two groups; one group starts the field school at Bluff and the other group starts at Cañada Alamosa. Mid-way through the field school, the two groups will switch field stations during a joint field trip to Chaco Canyon and Acoma – the most spectacular of the living Pueblo towns. The Field School offers an unparalleled opportunity to learn Southwestern archaeology in a way not possible on projects tied to a single site or to a small region.

The field school offers 6 semester hours of undergraduate or graduate instruction, learning archaeological skills from a large, experienced staff. Dr. Catherine Cameron supervises research at Bluff and Dr. Stephen Lekson directs work at Cañada Alamosa. Cameron and Lekson each have over twenty-five years of experience in Southwestern archaeology, with fieldwork at Bluff since 1995 and at Cañada Alamosa since 1999.

Bluff and Cañada Alamosa are spectacular, but challenging, places. Both are rural and isolated – Cañada Alamosa, remarkably so. Students live in a modern “bunk house” at Bluff, and in a well-equipped tent camp at Cañada Alamosa. Food is excellent. Room & board and transportation to these remote locales will total about \$1450, plus tuition.

For application forms, contact Dr. Catherine Cameron at <[cameronc@colorado.edu](mailto:cameronc@colorado.edu)> or at Department of Anthropology, University of Colorado, Boulder CO 80309-0233.

### ***Request for Assistance: Survey of SE New Mexico Radiocarbon Dates***

Dave Phillips

As part of archaeological studies along U.S. 70 between Roswell and Portales, sponsored by the N. M. State Highway and Transportation Department, SWCA is preparing a comprehensive list of all radiocarbon dates within Sebastian and Larralde's 1989 southeastern New Mexico overview area.

We are interested in radiocarbon dates from any period, from anywhere within the Sebastian and Larralde overview area. We'd also appreciate tips about where to look or whom to contact about other radiocarbon dates in the area.

- The number of the radiocarbon date and the uncalibrated age in years BP (If possible, we would also like a copy of the original report page from the radiocarbon lab.)
- The cultural affiliation for the date (e.g., Late Archaic).
- The LA number and name of the site.
- Which county the site is in.
- The citation for the report in which the date appears, in American
- Antiquity style (or a copy of the title page of the report).
- Anything else you think we should know about the radiocarbon date.

Please e-mail this information to Kathryn Donoho, SWCA-Albuquerque's lab manager, at <[kdonoho@swca.com](mailto:kdonoho@swca.com)>, fax it to (505) 254-1116, or mail it to:

Radiocarbon Studies, c/o K. Donoho  
SWCA Environmental Consultants  
7001 Prospect Place, N.E., Suite 100  
Albuquerque, NM 87110-4311

Thank you for your help.



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*[Steve Lekson's controversial Chaco Meridian has received coverage in NewsMAC 2002(1) pg. 21, and 2001(3) pg. 23. The discussion continues here with four more reviews and a note about an independent observation of the Chaco meridian.]*

*Note that the last sentence of R. Gwinn Vivian's review in NewsMAC 2002(1) was inadvertently clipped and should have read: "The Chaco Meridian presents some of the data; it is time to develop a methodology worthy of testing those data." Ed.]*

### ***The Chaco Meridian: Centers of Political Power in the Ancient Southwest***

by Stephen H. Lekson. 235 pp.; maps, diagrs., ills., bibliog., index. Walnut Creek, Calif.: AltaMira Press, 1999. \$62.00 (cloth), ISBN 0761991808; \$23.95 (paper), ISBN 0761991816.

#### ***Review by Mark D. Varien***

Crow Canyon Archaeological Center  
*American Anthropologist*  
vol.102, Issue 4 Dec2000

Few books in Southwestern archaeology have created as much controversy as Steve Lekson's *The Chaco Meridian*. Indeed. What do you think of Lekson's argument? may be the question Southwestern archaeologists asked each other most often as they gathered at regional and national conferences over the past year. So why all the commotion?

In brief, Lekson argues that there were three successive political and ceremonial centers in the Southwest, each dominating its respective region: first there was Chaco (A.D. 900–1125), then Aztec (1110–1275), and finally Paquime (1250–1450). Not only were the centers sequential in time, but they were also located on a precise north-south meridian. Lekson argues that a ruling elite emerged at Chaco Canyon, that this elite perpetuated itself by deliberately moving its center approximately 100 km due north to Aztec, and that it engineered a final, elaborately staged move to Paquime (also known as Casas Grandes), located approximately 700 km south of Aztec. Lekson ar-

gues that elites at Chaco and Aztec dominated the surrounding regions by controlling the distribution of rare and exotic goods; at Paquime, elite power was based on control of a mercantile economy. Further, by deliberately locating each center on the meridian—and thereby using the landscape to symbolize and link aspects of cosmology to political power—the elite acquired a degree of positional legitimation. Lekson's book promotes this bold reconstruction of political history in the ancient Southwest, and he uses this case study to discuss issues of archaeological method, cognitive evolution, and emergent order, which, from my perspective, is an unusual trope for the development of political complexity and social inequality.

Lekson begins his reconstruction of Chacoan society with a discussion of Chaco Canyon great houses, the architectural wonders that remain as the most visible monuments of Chacoan culture. Lekson argues that great houses were designed and occupied by an elite class in a society that became increasingly defined by haves and have-nots. He then reconstructs the Chacoan regional system by examining the distribution of Chacoan outliers—buildings outside Chaco Canyon that resemble the great houses in their architectural style, in their associated features, and in their locations on the landscape. Lekson envisions the Chacoan settlement system as consisting of a series of concentric zones of integration: the canyon itself, which served as a planned ceremonial city; a "halo" of dense occupation immediately surrounding the canyon; the Chaco basin, which extends to the horizon as seen from the highest points in the canyon; and the outermost zone, which extends beyond the basin to the most distant outliers. Lekson argues that elites at Chaco Canyon managed an economic system based on the redistribution of agricultural surpluses within the boundaries of the Chaco basin; beyond the basin, Chacoan hegemony was established by controlling the distribution of rare and exotic items. Lekson ends this reconstruction of Chacoan society by discussing the relationship between the Chaco region and the Mimbres region to the south, a relationship that he views as a type of peer-polity interaction that was particularly important in the emergence of the final center at Paquime.

In the chapter that follows, Lekson provides a detailed examination of the chronological and geographic relationships between Chaco, Aztec, and Paquime. To support his argument for a specific



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historical link between each of the three centers, he focuses on three sets of observations: the sequential occupation of Chaco, Aztec, and Paquime; their location on a north-south meridian; and features that are shared among, and—in some cases—unique to, the three centers. In the next chapter, Lekson tackles the question of whether the north-south alignment was coincidental or intentional. To support the interpretation that the alignment was intentional, he discusses the relatively simple technology that would have been used to establish a north-south line and demonstrates how random error introduced by the repeated determinations of north would have “balanced out” as the survey was extended over great distances, resulting in a relatively accurate alignment. To further support the interpretation that the north-south alignment was intentional, he reviews the cultural geography of the regions that were crossed and the importance of directional symbolism and positional legitimation in the Southwest and elsewhere. Finally, he recounts aspects of Pueblo and Navajo oral tradition, which he believes tell of the emergence of elites at Chaco Canyon and the movement of groups from north to south.

Lekson recapitulates his argument in the final chapter of the book and goes on to discuss how it bears on larger issues, including emergent order, human cognition, and archaeological method. He argues that each center brought order to the society (and to the archaeological record) through domination of its respective region. He views the human urge to impose order as being linked to population size and scalar stress and sees the move from Chaco, to Aztec, to Paquime as an example of cycling, a term that was coined in the southeastern United States to refer to the formation of repeated chiefdoms that fail to become states. In terms of human cognition, Lekson argues that Chacoans “invented” conceptual space in the Southwest. He argues that, before Chaco, spatial cognition was limited to the immediate landscape experienced by individuals, but that the ruling elite at Chaco subsequently created a new level of abstract spatial thinking and manipulated those concepts to its own political ends. As a result, spatial cognition changed from the personal to the social and political. In the discussion of archaeological method, Lekson recognizes that his model is

difficult for many to accept because it forces one to evaluate dissimilarity across space and time, and archaeologists demand high standards to establish continuity in the face of dissimilarity. Lekson calls for a new comparative archaeology that works on larger scales and compares political systems and their remnant landscapes.

Lekson correctly notes that until these new methods are developed, we will evaluate the evidence by argument rather than by method. This book is largely an exercise in argument. At times the argument is extremely persuasive and grounded in empirical observation; at times it is argument by assertion. I find the general reconstruction presented by Lekson to be compelling: the evidence supports the interpretation of Chaco, Aztec, and Paquime as influential regional centers and the contention that there was an important and unique historical relationship between the three. But I also find myself arguing with many of the details. It is here, in the details of his reconstruction, that the links between the archaeological record and the inferences are weakest, and it is these interpretations that are likely to remain open to question and subject to considerable debate. For example, Lekson argues for an elite class that may have numbered as many as 1,000 individuals in a canyon population estimated at approximately 3,000. Yet, there are only two known burials that can be clearly interpreted as elite individuals and only a handful more that might be interpreted as elites. If elites constituted such a large proportion of the population, why hasn't more evidence of their existence been discovered? How did such a large elite class emerge, and how did it pass its authority down through multiple generations? These questions are important because the elite class is central to Lekson's reconstruction, but these questions are not satisfactorily answered in Lekson's narrative.

In closing, I want to emphasize how much I enjoyed reading this book. Lekson is one of the few archaeologists who writes with a distinctive voice, one of the few who has the expertise to integrate the archaeology of distinct regions, and one of the few who prefers to work without a net. It would be a mistake if disagreements over the details of Lekson's reconstruction were used to entirely dismiss the general argument that he develops. His account of political history of the ancient Southwest may prove to be only partly correct, but it is a reconstruction that cannot be ignored by



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those interested in ancient Pueblo history and in the development of political complexity and social inequality.

### Review by Kevin S. Blake

University of Wyoming

*Geographical Review*, Jul99, Vol. 89 Issue 3

"This book is a rip-off." These unusual first words in *The Chaco Meridian* presage Stephen H. Lekson's directness in his no-holds-barred synthesis of the symbolic and spatial relationships among the ancient Pueblo settlements at Chaco Canyon, Aztec Ruins in northwestern New Mexico, and Paquime in northwestern Chihuahua. Lekson proposes a powerful hypothesis linking the three centers of Pueblo power. Along the way, he explores some of the great mysteries of southwestern archaeology, such as the degree of political hierarchy in Pueblo culture, symbolic relationships between distant capitals, and the purpose of the roads leading to (or from?) Chaco. The roads, in particular, capture the imagination of Pueblo prehistory scholars, much in the same way as the fabled "disappearance" of the Anasazi. These roads were 9 meters wide, surfaced with adobe, laid out straight as an arrow, and dotted with shrines. But without the wheel and beasts of burden, why were such monumental pathways needed? Lekson provides some plausible answers as he leads readers down his own creative pathways with verve, scholarly detail, vision, and a bit of whimsy.

Early on it becomes clear this is an advanced treatment: The basic argument is simple, but the supporting context is complicated, interdisciplinary, qualitative, and, in the author's words, heretical. The book's purpose is to convince the reader of the regional importance and sequential historical relationship of Chaco, Aztec Ruins, and Paquime, including the intentional alignment of the three centers on approximately the same *meridian*, 107 degrees 57' 25" W. Lekson argues that this *Chaco Meridian* structured political relations in the prehistoric Pueblo Southwest. The reader must check any sentimental fondness for spectacular cliff dwellings (such as Mesa Verde) at the door: Spanning five centuries from about A.D. 900 to A.D. 1450, Chaco, Aztec, and Paquime (also known as Casas Grandes) were, in sequence, the most important regional settlements of their time.

Lekson argues for a political hierarchy at these places, and most of his energy goes into describing how the elite established connections between each capital and its predecessor. Pushing the limits of what is known about southwestern archaeology, the book provides a sweeping and systematic regional analysis of political power, including a consideration of the Mimbres, Sinagua, and Hohokam cultures. Significant to the success of the argument is the grounding of each supposition in thoughtful observations related to spatial positioning, architectural signatures, and the distribution of exotic material. Macaws, copper bells, and shells underpin many of the assertions regarding the political-prestige economies supervised by the Pueblo elite.

Although *The Chaco Meridian* assumes some familiarity with southwestern landscapes and archaeology on the part of readers, the author's goals are achieved with a clear and forceful style. It is difficult to become lost when the elite are "Major Dudes" (p. 26), Chaco is the "800-pound gorilla of Anasazi archaeology" (p. 26), and the hegemony evident in the architecture of Pueblo Bonito is summed up with the phrase "Bonito was no barnraising" (p. 27). The text is interspersed with whimsical epigraphs, quoting such luminaries as Mark Twain, the narrator in *Babe* (the movie about a talking pig), and Rick Blaine (from *Casablanca*). It is refreshing to have such a strong sense of an author's scholarly persona through writing style and illuminating footnotes, although one does encounter a few wordplay groaners, such as "the political structure of the Greater Southwest was a case of macaws and effects" (p. 50). Make no mistake, although this book is rife with plain speaking, it requires an active reader to deal with such phrases as "inlying outliers lack descriptive clarity and rhetorical force" (p. 45). There is, moreover, naturally a bit of tedium in synthesizing the architectural details of far-flung ruins.

Lekson's novel use of previous studies engagingly demonstrates the connections of Chaco, Aztec, and Paquime along the *meridian*. The book offers fine overviews of Chaco's origin, design, and function, as well as Chaco road surveying, but the greatest value of the book is its regional scale and decidedly spatial analysis. The reader not only gains a better understanding of the details of ruins but is introduced to Lekson's re-created Chaco geography. Asserting that there is more to roads and regional connections than bulk food redistribution, *The Chaco Meridian* appropriately ignores

the modern U.S.-Mexico border to examine significant ideological as well as material linkages. Aztec's significance, reduced to mere footnotes in many studies, is highlighted here as the replacement for *Chaco* as a center of political power. Lekson vigorously takes on any shortcomings he sees in southwestern archaeology—such as an excessive focus on the production steps of polychrome pottery and the shunning of the political implications of exotic baubles—and revels in his opinions. An interdisciplinary perspective strengthens the case, including the critical analysis and integration of ideas borrowed from the geographers William Doolittle, Roger Downs, David Harvey, Stephen Jett, Arthur Robinson, Carl Sauer, and Yi-Fu Tuan.

Few weaknesses mar the work. The lack of cartographic sophistication is disappointing in a volume so rich in spatial thinking. The author even admits (in a footnote) to "archaeology's impoverished graphic faculties" (p. 66). The maps, although plentiful, need better location detail (showing, for instance, Guadalupe and Chimney Rock ruins), symbolization (distinguishing in Figure 2.8 between roads, projected roads, and streams), labels (rivers are rarely named), and scale (absent in Figure 4.2). A single detailed and integrative map could often better illustrate the point than do the several thinly sketched versions that are offered instead (such as Figure 4.3). Typographical errors are rare, although the Plains of San Agustin is repeatedly transformed into the Plains of St. Augustine (pp. 119, 120, 124). Easily the most tiresome convention in the book is the liberal use of French and Latin descriptors. Reworking a sampling of these, I assert that in a book about the genius loci of a Pueblo ménage à trois, the de luxe use of French and Latin terms de novo, of unclear fons et origo to some readers, is hardly a deus ex machina; en bloc they are bete noir and preferably rarae aves lest anyone incorrectly surmise that the monograph is the work of a scholar manque.

The *Chaco Meridian* effectively addresses some questions and spawns others, as seminal works are inclined to do. Lekson presents a compelling argument, meticulously laid out with some fun terminology and observations. Sure to raise some hackles with a few leaps of logic that nevertheless have credence, based on Lekson's field experience and cogent analysis, *The Chaco Meridian*

should be welcomed for its thought-provoking spatial orientation and far-reaching synthesis of Pueblo archaeology. The use of directional symbolism for major social and political ends, made visible in part through roads, is a significant idea that is well articulated. Because the book is aimed at those who are already knowledgeable about Pueblo prehistory, it would be a difficult read without having visited some of the places discussed. To avoid Pueblo meltdown while reading *The Chaco Meridian*, my advice is go to some southwestern ruins (*Chaco* and Aztec at a minimum), then read this, then go again enlightened.

### Review by Winifred Creamer

Northern Illinois University

Journal of Anthropological Research, vol. 56, 2000

Steve Lekson is stirring the pot. While Chaco Canyon has been the subject of innumerable analyses over the years, Lekson's book, *The Chaco Meridian: Centers of Political Power in the Ancient Southwest*, is a new and controversial analysis. In it Chaco is viewed as a political system that encompassed a much larger area and endured over a much longer period of time than most archaeologists have considered. The influence of Chaco over time and space is both the thesis of the book and the basis for its criticism. Briefly, Lekson stresses that the physical relationship among Chaco Canyon, the Aztec Ruin in New Mexico, and Casas Grandes, Chihuahua, is no accident. All three localities are on nearly the same meridian of longitude and are sequential in time. This was intentional, according to Lekson, who suggests that each site in turn was settled by a core group of elite individuals who shifted their territorial capital from Chaco to Aztec and then to Casas Grandes (Paquime) over the period from roughly A.D. 1100 to 1500.

Southwestern archaeologists seem quick to reject this hypothesis, if comments at recent professional meetings are any indicator, because the proposed connection spans hundreds of miles and links sites that are well known (Chaco and Paquime) with one that is little known (Aztec), and because the material culture varies from one locality to the next. As Lekson points out, Southwestern archaeologists accustomed to equating pottery with people are not likely to look kindly on a connection between Chaco's black-on-white pottery and the Ramos polychrome from Casas Grandes. Many of those who have leaped to take the side

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against the argument Lekson makes in this book, however, have probably only read the extremely attenuated version of the Chaco meridian hypothesis presented in Lekson's article in *Archaeology* magazine. The real data are in this longer work.

Lekson presents a unique perspective on the Southwest in *The Chaco Meridian*. The data come from a wide variety of research projects, including his own work at Chaco. That work is well published, and it is the lesser-known information about Aztec and Casas Grandes that makes the book worth reading and the meridian question worth pondering. Further, Lekson has huge personal knowledge of the Southwest; he has visited more sites than many archaeologists who have worked for years in the region. What is different about his presentation of data is that Lekson tries to convey some of the ideas that go through his head when he visits a site, a boon for those who have not had the chance to stand on a hillside overlooking some of the places he describes.

Lekson is not exactly pontificating when he describes remote sites, but it becomes clear that he has seen a lot and has put together his Chaco meridian hypothesis based on what he has seen. Is his theory hard to accept because others have not been to see, for example, the unexcavated portion of Aztec? If they go and look at the site, will they, too, see the multiple Chacoan outliers and agree that the Mesa Verde region was really the Aztec region? What we seem to need for the moment is suspension of disbelief while more archaeologists read the whole book, go out and tour the Southwest, and reconsider their own perspective and Lekson's argument at the same time.

In making the connection between personal observation and archaeological interpretation, Lekson diverges from the mainstream in several ways. His prose is distinctive and his allusions multifarious, though they sometimes act more like roadblocks than real insights (should one translate the French idiom and lose track of the argument, or skip a possible nugget to keep up with the flow of the book?).

There are also points to quibble over. For example, Lekson illustrates a scenario for the translation of great kivas from Chaco to Aztec and Casas Grandes via the Mimbres region. The end result "is

rectangular, incorporated into the House of the Serpent" (p. 75). My research and that of others in the northern Rio Grande show that larger-than-average rectangular rooms having kiva features are widespread in Pueblo sites of the fifteenth century, comparable in date to Paquime by Lekson's chronology. In the Rio Grande, these rooms have been interpreted as ancestral to the meeting rooms of Pueblo societies described in ethnography. Wouldn't these rooms be the same at Paquime and not great kivas? There are other examples in the book where Lekson's interpretations can be called "new," but also "novel" or "out there."

Among the positive aspects of the book is Lekson's effort to bring intentionality to the interpretation of Southwest archaeology. His description of a consistent endeavor of a group, continuing across many generations and periodically moving not just from place to place but from one clearly selected place to another, is interesting, but it will clearly take some getting used to and some further checking of the facts.

Overall, I am not convinced that the Chaco meridian ever existed. I do think this book is worth reading for its effort to look at old data in new ways and to incorporate new data in looking at old questions. Perhaps new research will be undertaken at Aztec and some of the questions about the primacy of sites in the Mesa Verde region will be answered. Perhaps some of the relationships that Lekson proposes will be affirmed by new analyses. Whether or not that is the case,

The Chaco Meridian is a highly personal exploration of Southwestern archaeological data that will motivate a new level of discussion. In the short run, this seems to be a book that evokes extreme opinions. People seem to find it fascinating, or unbelievable. How many scholarly books elicit a website bearing a point-by-point refutation ([www.unm.edu/~dap/](http://www.unm.edu/~dap/))? [See next item. Ed.]

In the long run, this book will be deemed either a potboiler or a classic, but now is the time to read it.

**Review by Stephanie M. Whittlesey**  
Statistical Research, Inc.

*Journal of Field Archaeology* v27n3 pp. 359-364

Reader, take note: because *The Chaco Meridian* is an informal and unconventional book, I review it in like fashion. It is fitting, I think, that this book was one of the crop published in the closing years

of the old century and millennium, because it encapsulates many of the lessons that we should have learned long ago, and because it can serve as a model for the archaeology of the coming century. In *The Chaco Meridian*, Steve Lekson has accomplished an enviable feat. He has presented a compelling scenario of prehistory that will appeal to our neglected supporters, the nonprofessional audience. He has couched his ideas in informal, humorous, and decidedly unacademic language. And he is one of the few in this postmodern world who can demonstrate an understanding of the lessons of processual and postprocessual archaeology. In *The Chaco Meridian*, Steve has created a package that may threaten the core of today's archaeological self-image.

*The Chaco Meridian* operates outside the rule structure of the two dominant components of the modern professional community—academic and contract archaeology. The 1990s saw the split between these two unbalanced components widen. The decade also witnessed what to my mind was an extraordinary decline in scientific standards of sound research among both communities, for some rather obvious reasons. While academic archaeologists watched helplessly as funding and corresponding databases dwindled, contract archaeologists wallowed in great drifts of money and the data it produced. Survival in the academy required many to publish research based on tiny bits of unsatisfying data, however, and contract archaeologists operated under various constraints—contract deadlines, client obligations, and extraordinary sampling issues—that precluded optimal use of their often tremendous databases. The result among both camps was research that masqueraded as hypothesis testing. The hard-learned lessons of the 1970s—that our results be verifiable and that our hypotheses be tested rigorously with independent data sets—seem to have quietly slipped from the scene (contra Shafer 1997:12).

At the same time, academic archaeologists seemed to isolate themselves further from a public audience to which it historically paid little attention, although contract archaeologists were forced by the nature of their business to cope with various public interests, including Native Americans. (That neither group typically can produce anything that the general public would be interested in

reading is parenthetical to my diatribe). Careerism requires academics to use whatever incomprehensible phraseology characterizes the latest theoretical bandwagon; contract archaeologists use equally impenetrable bureaucratic jargon.

Laboring under all of these constraints, neither the academic nor contract archaeologists of today seem to understand and appreciate that there is a difference between the scientific activities of hypothesis generation and confirmation. The excruciating years of processual archaeology might never have happened, to judge from current research. In the 1990s, we seem to have become our own relics, ironic dinosaurs teetering on the edge of extinction, unable to fulfill our own mandates to reconstruct and learn from the past, create viable models of human behavior, and convey our findings to the public.

Enter Steve Lekson. *The Chaco Meridian* frames a hypothesis and describes how it was derived. It is neither a prissy careerist piece—empirically thin and theoretically dense—nor a purely descriptive tabulation of right-of-way archaeology. It presents instead an interesting scenario about the past framed in highly personal, autobiographical terms. Steve seems to be directed by some ineffable force—perhaps the same one that drove Emil Haury, Watson Smith, and Julian Hayden—to focus on understanding the important events of prehistory. His sincere interest in the past stands in extraordinary contrast to the works produced by contract archaeologists and academicians alike, driven as they are by other forces. This is the strength of the book, and this distinctive character—neither the fish of skimpy academic research nor the fowl of a hefty contract report—will be unsettling and also perceived as its weakness.

Some will find the scenario of *The Chaco Meridian* unique, even perhaps nudging the frontier of New Age archaeology uncomfortably closely. Indeed, some wags may wonder if the book was Steve's personal version of the Sokal Hoax (Sokal and Bricmont 1998). As Steve observes, most who will read this book will wail that the proof is missing. Where, they will ask, are your data? The crux of my thesis is that Steve does not need to provide proof; he is presenting an account of hypothesis derivation, not the evidence to confirm it.

Steve's scenario was developed from years of thinking and observing and not a little fieldwork, much of it at the scene of the crime itself. The scenario is simple: Chaco Canyon, Aztec, and Casas

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Grandes, Chihuahua (a.k.a. Paquimé), were linked members of an overarching political and ceremonial system that effectively ruled much of the late prehistoric American Southwest. Each, in its own time, was the center of the Puebloan economic, religious, and political world. As Steve phrases it, these three sites were capitals or small ceremonial cities "where low-grade political complexity encompassed and organized surrounding regions" (p. 15). The centers were sequential and historically related: Chaco was first, followed by Aztec and then Paquimé. As the economic and political center of the contemporary world, each city in its own time controlled the distribution of prestige goods such as macaws, reinforcing the system and supporting the ideological framework.

This is not too outrageous a notion, so far. But in developing support for this idea, Steve dips into the well of postmodernist thought, which will derail those dyed-in-the-wool positivists who shudder at terms like ideology, agency, and individuality—and who might otherwise be tempted to jump on Steve's bandwagon.

Four main lines of observations were used to derive the hypothesis: (1) the meridian itself, (2) the architectural character of the sites, (3) dating, and (4) ancillary stuff, or what might be called "fripperies" in Leksonese. The curious alignment of Chaco and Paquimé along the same meridian first drew Steve's attention. The urban planners of Aztec and Paquimé placed their cities along the Chaco meridian (longitude 107° 57' 25") to link them symbolically with Chaco. This alignment was the primary grammatical construction in the spatial language of Chaco, which was used to legitimize the later cities by reference to the historical and mythical past (p. 138).

Steve goes to serious lengths to demonstrate that meridian alignment was possible with ancient Puebloan surveying, mathematical, and engineering knowledge, clearly used to position the well-known Chaco roads. As he points out, all it takes is simple equipment and some basic knowledge: "A troop of Boy (or Girl) Scouts could lay out the North Road with three poles, a spool of rope, and a box of truck flares." (p. 118). He claims that even the longest spans and broken terrain could be covered using more time and labor alone, rather than requiring new techniques. I was particularly enthralled with the notion that the making of the

alignment—the positioning of the next political and religious center—was in itself a ceremonial act. The Chaco-Paquimé alignment would have required considerable time and labor coordination. With attendant pomp and ceremony, it was religious performance art of remarkable intensity and would have been long remembered (p. 140).

The architecture, layout, and planning of the sites is perhaps the weightiest category of evidence, to pun in Lekson fashion. We've always known Chaco was big, and its preplanned character and sheer size can be extended to both of the other capitals. Perhaps most striking is the cardinality of all three. To quote Steve, "Planning was rigid, formal, and geometric: Precise symmetries, solar and cardinal orientations, and dramatic use of natural features all operated on scales incorporating the individual building, settlement, landscape, and region" (p. 72). North was the cardinal direction for the three capitals, chosen in part because it was the only fixed direction in those pre-compass times.

Many other architectural details were shared among the three, including T-shaped doorways, colonnades, tri-wall structures, room-wide platforms, platform mounds, and stone disk foundations for supporting posts. Roads at Chaco and Aztec probably served a symbolic landscape function rather than a more prosaic use. All of these elements were part and parcel of the ritual and political landscape—geomantic representations of Chacoan ideology, politics, and ceremonialism—what Steve calls "positional legitimation." Steve draws on British and American landscape theory in developing this notion. These ideas appear to draw heavily from John Brinkerhoff Jackson's influential concept of the political landscape (e.g., Jackson 1984).

Steve demolishes the superficial dissimilarities among the three capitals by pointing to shared architectural conceptions that extend beyond cardinality, planning, and sheer size. He observes the massed room blocks at Paquimé, not unlike those at Chaco and Aztec except in material; the central plazas; and the use of adobe at Aztec and other Chacoan Great Houses. Moreover, each capital was somewhat different because of the temporal difference in occupation; they expressed different stages in the evolution of Pueblo building. Some will balk at the notion that Paquimé was a pueblo. The evidence, detailed more precisely in Lekson (1999), should strike fear into the hearts of all

dyed-in-the-wool Hohokam archaeologists who still cling to the notion of continuity between pre-Classic and Classic period Hohokam.

The temporal Chaco-Aztec-Paquimé sequence is well supported by tree-ring dates and other chronological data sufficient to satisfy the most ardent positivist. Building began at Chaco around A.D. 900, if not earlier; peaked around A.D. 1020; and ceased by A.D. 1125. A wealth of new tree-ring dates show that construction at Aztec began around A.D. 1110 and continued for at least a century. Dean and Ravesloot (1993) demonstrate that Di Peso's original chronology for Casas Grandes was wrong. Paquimé could be no earlier than A.D. 1250 and no later than 1500.

Of the fripperies, perhaps the most important is Puebloan oral history. Steve suggests that White House, a prominent place in several Puebloan origin stories, was Chaco or perhaps the combined Chaco-Aztec. People left White House for a place in the south where they wished to raise parrots. With them the people carried two bird's eggs, one a crow and one a macaw. The people who chose the macaw egg had to travel far to the south, leaving the people who had chosen the crow's egg behind. It is eerily coincidental that the place to the south where the people raised macaws resembles the archaeological Paquimé. Among other fripperies, Steve cites a number of interesting facts, some long known and others coming to light more recently, that support the notion that Chaco was a vacant ceremonial center sporting a priestly elite. Among these are the lack of evidence for household domestic activities, the scarcity of burials, and the large common kitchens.

There is much that is new here, and much that will challenge southwestern archaeologists to think beyond settlement and subsistence—or as Steve calls it, “corn, beans, and squash” archaeology. For this reason, many will be uncomfortable with Steve's ideas. It is precisely this newness and willingness to consider postmodern ideas, however, that gives the book merit. There is, however, just as much if not more in *The Chaco Meridian* that is old. For example, evaluating the layout and spatial and celestial alignments as Steve has done with his three capitals has a long history in archaeological studies of Mesoamerican ceremonial cities, one that predates Christopher Tilley's (1994) newfangled notions by many decades.

Chaco's claims to uniqueness—roads, outliers, calendrical stones, masses of turquoise and macaws—have long been known, and even the most die-hard Southwestern functionalists have had a hard time explaining Chaco in corn-beans-and-squash terms. I have heard the whispered disapproval and the scholarly harrumphing of my colleagues, and frankly, I cannot understand what all the grumbling and resistance is about.

Are there flaws in this book? Certainly. For starters, it is inconsistent. After spending pages compiling ideas from cultural landscape theory, oral history claims, and similar postprocessual ideas to support the Chaco-Aztec-Paquimé connection, Steve inexplicably lapses into old-time, corn-beans-and-squash archaeology to explain the location and emergence of each capital and its demise. For example, drought caused the abandonment of rainfall-agriculture-dependent Chaco; Aztec was located because of its proximity to the irrigable Animas River. This jarring reversal seems absurd; there is nothing in the “relentless functionalism” (Steve's term) of neotraditional southwestern archaeology that can explain Chaco, Aztec, or Paquimé. We must look elsewhere for a satisfying understanding.

The book also skirts what to my mind are important issues, such as the possible Mesoamerican derivation of the three capitals. Steve notes the prevailing opinion that denies a Mexican influence upon Chaco and discusses things Mexican (“hecho en Mexico”)—architectural details, macaws, copper bells, and so on—but neatly avoids coming down on one side of the issue or the other. Despite a strongly rooted antagonism to all things Mesoamerican in explaining Southwest prehistory, however, like a gorilla on a bicycle, the Mexican derivation of some aspects of southwestern culture cannot be ignored.

Steve also spends enormous effort building his claims, no doubt hoping to forestall colleague's objections. Every observation must itself be supported. For example, he takes up four pages justifying his use of Pueblo oral history. This is irritating and unnecessary. Those who are disposed to accept the scenario will do so regardless, and those who are not so disposed will remain unconvinced. Much of the material he has compiled needs further exploration and discussion. Few archaeologists will have problems with the juxtaposition of Chaco and Aztec, for example, but many will quibble with their coupling to Paquimé. It's not a pueblo, they will argue (but see Lekson

1999).

And finally, there are picky flaws. The book is riddled with typos and marred by an italic font that squishes words together so that they look like typos. And although I hate to admit it, Steve's language, relentless punning, and general cutesy style can be irritating. (I'd still rather read him than almost any other archaeologist of recent vintage, however.)

What, then, makes *The Chaco Meridian* simultaneously compelling, outrageous, and threatening? Some have said that the book is compelling because Steve thinks in big terms, but I disagree. The distance between Aztec and Paquimé is about 700 km, according to Lekson's maps, certainly a big area in comparison to tiny processual realms such as the Hay Hollow Valley. But Charlie Di Peso was a bigger thinker; his Gran Chichimeca could swallow the linear extent of the meridian by a large factor. The book is compelling not because Steve has found the last piece of the puzzle, but because he has put together in an entirely new way a lot of pieces that we've had kicking around in our closets for a long time. And it is certainly compelling for its use of a new approach. To my way of thinking, Steve didn't carry the scenario far enough (I, however, represent the most dreaded of archaeological converts: one trained by processualists who converted to behavioral archaeology and came late in life to accept postmodern ideas, seeking my own converts like all other born-again folk [e.g., Whittlesey et al. 1998]).

I suspect that it is Steve's rejection of the dominant paradigms of careerist academic and harassed contract archaeologist and his antiestablishment format that outrages and threatens his peers. His use of postmodern notions and his rejection (for the most part) of the corn-beans-and-squash paradigm that remains dominant in the U.S.; his jargon-free, funny prose; and his refusal to borrow the theory of the moment will raise his colleagues' collective hackles.

And last, the book may be threatening because it appeals to a popular audience. Perhaps the most significant aspect of *The Chaco Meridian* is that Steve's reconstruction and explanation of the past will be of enormous interest to the lay public and the general reader. Those folks don't care about the latest erudite theory, and they would prefer to

escape a pseudoscientific monologue. They want to know what happened in the past, and why—expressed simply and cleanly. Steve has done that. No client with whom I am familiar would have sponsored this research or accepted the book as a deliverable—and that's a good thing, to quote Martha Stewart. And if we were completely honest with ourselves, I'm sure a lot of us would admit we wished that we had thought of it first.

In closing, I return to the point that I made in the beginning: the lessons of the processual past. There was much in the diatribes of the new archaeology that was stultifyingly boring, pretentious, and simply silly. There was also much that was extremely important and critical to the forward evolution of archaeological science (hypothetico-deductive mumbo-jumbo excluded). The insistence that science should proceed by generating hypotheses that must be confirmed with *independent* data was the most vital of these notions (e.g., Watson et al. 1971, 1984). In the cookbook formulae of the hypothetico-deductive method lay significant kernels of scientific soundness: hypotheses were to be generated from observations, test implications were to be derived to seek material correlates of the hypotheses in the archaeological record, and strong cases and representative data were to be sought. Most important, we were not to confuse hypothesis confirmation with hypothesis generation. And there was good reason for doing so. As Sharer and Ashmore (1979:535) wrote, "only rigorously tested propositions can identify the causes of change and thereby begin to explain cultural process."

Most archaeologists today have forgotten these lessons, and are driven by their own special, academic and personal demons to publish research based on the skimpiest of evidence, or unfortunately no evidence at all. Moreover, most of us have persistently confused and conflated hypothesis generation and hypothesis confirmation. Our reports masquerade as explanations of the past, when they are at best only observations of interesting phenomena that could possibly be used to generate hypotheses for testing. To cite just two recent examples, Wilcox et al. (1999) rely on the observations of a Vietnam war veteran to determine that the widespread and inexplicable abandonments of central Arizona were responses to warfare; Hegmon et al. (1997) use compositional data of 79 pottery samples and 36 raw material



specimens to reconstruct production and distribution systems of San Juan Red Ware. In the former study, observations of site placement and characteristics (e.g., defensible position, location vis-a-vis topography and other sites, massive walls) are construed as *confirmations* that settlements served as defensive or lookout posts, for example, in prehistory. In the latter study, the data are simply too scanty and nonrepresentative to be taken as supporting evidence.

Bad archaeological science does no one any good. It does not advance the methods of the discipline; it does not help us to understand the past or create models of human behavior and the environment. It does not justify our expenditures, fulfill the public's interests, or address the concerns of Native Americans. For these reasons I find it completely unfathomable that the peer review process in American archaeology is so frighteningly nonfunctional. We're aren't helping ourselves in any way.

To his credit, Steve Lekson does not attempt to market *The Chaco Meridian* as a full-fledged test of his hypothesis, although the evidence he has marshaled is far stronger than that seen in many recent studies. Moreover, the evidence is not the point. Steve has generated a terrific and compelling hypothesis. Let others compile the evidence and test it with independent data.

*The Chaco Meridian* gives me hope for the survival of archaeology in this postmodern, new-millennial world. It vindicates the approach of the lone scholar and harks back to the great strides made by the independent foundations and scholars of bygone years. Let there be more books like it. Let these books compile lots of interesting stuff to build exciting cases about past phenomena and processes. Let the books be phrased in informal, clear, and thoughtful language. Let them justify the tremendous expenditure of public monies on archaeology by conveying back to the public something of substance and interest. And please let them not be pretentious, careerist monologues about the trite, or descriptive catalogues of artifacts and partial features from small rights-of-way for which the client agreed to pay. If others will be inspired to follow Steve's lead and tackle the unknown and the unpopular, the profession, the public, and all of us will be the better for it.

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## Issues & Viewpoints

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### "Rethinking Chaco" Paper is Online

Dave Phillips

A slightly revised version of my 1993 paper, "Rethinking Chaco," is now archived online at <[www.unm.edu/~dap](http://www.unm.edu/~dap)>. Prepared for the Chacmool conference, this paper was an outsider's commentary on theories of Chacoan social organization as of 1993. It is probably of interest mainly to hard-core Chaco buffs (or at this point, perhaps not even to them!). N.B.: it does *not* discuss the Chaco Meridian, which at the time was, at most, a gleam in Steve Lekson's eye. My critique of Lekson's Chaco Meridian theory can be found at the same web site, however.

### The Maya and Chaco Meridians

James Q. Jacobs

[www.jqjacobs.net/southwest/chaco\\_meridian.html](http://www.jqjacobs.net/southwest/chaco_meridian.html)

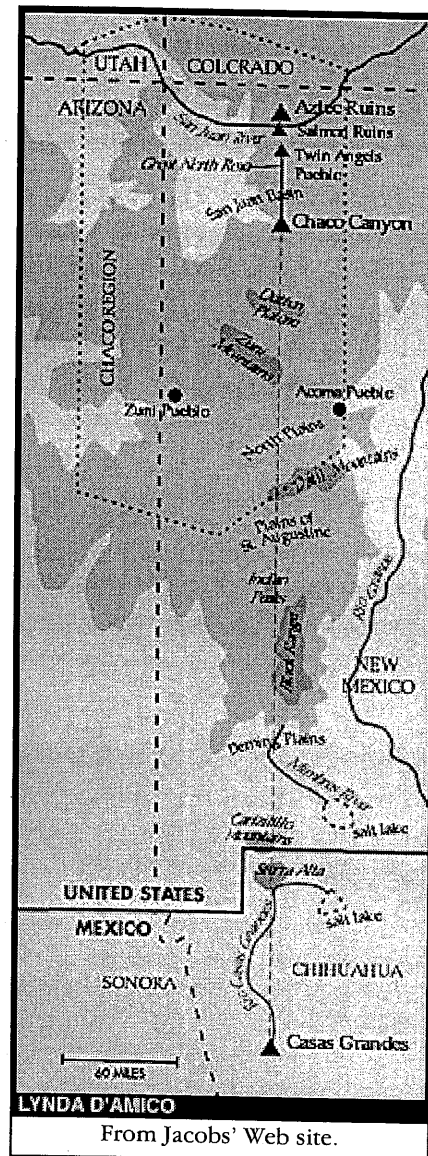
In February of 1990 I noticed that Big Horn Medicine Wheel, Aztec Ruin, the ruins of Chaco Canyon, and the Mimbres Valley are all situated on or near the 108th meridian. This observation was an outgrowth of my rock art fieldwork. I first noticed that a group of rock art sites with similar images were on an approximate meridian. Thereafter I began studying maps of and mapping archaeological sites. In March of 1991 I noticed that Casas Grandes, in Northern Mexico, was on the same alignment. In August of the same year I noticed that Mt. Wilson, one of the highest peaks in the Rockies, was also on the meridian. At that time I named the alignment the "Chaco Meridian." I later noticed that the arc distance from Pueblo Bonito to Mount Wilson precisely equals 1/200th of the circumference of the earth - 1.80 degrees.

Observation of the meridional alignment of these American Southwest sites led me to examine other areas for a similar phenomena. In February of 1991 I first noticed the meridional alignment of Dzibilchaltun, Merida (prehistoric Tiho), Sayil, Kihic, Hormiguero, Uaxactun, Tikal, Las Tinajas, and El Trapiche (Tazumal). I called this alignment

the "Maya Meridian." On March 21, while checking the distances between Chac Mools, I noticed the 1/36 of circumference distance (10.0 degrees) from the Tenochtitlan pyramid to the Castillo pyramid at Chichen Itza (both have Chac Mools in their interiors). I also noticed the Tikal to Chichen Itza arc distance of 1/100 of circumference.

During November of 1991, in order to accurately check site to site relationships at a greater distance, I began using spherical trigonometry in my studies. I discovered that the Newgrange-Cheops arc equals 1/10th of circumference and the Newgrange-Avebury arc equals 1/100th of circumference.

Since these early discoveries more aspects of the site relationships have become apparent. There is evidence that infers a relationship between the Chaco Meridian and the Maya Meridian. The difference in longitude from the Maya Meridian to the Chaco Meridian equals the difference in arc degrees per solar orbit and per eclipse year. The latitude difference between Casas Grandes and Tikal equals the arc degrees of lunar orbit per earth revolution. I will release more details of these findings in the future. Meanwhile, a more detailed explanation of some of these ideas can be found in my series of article on Archaeogeodesy at <<http://www.jqjacobs.net/astro/aegeo.html>>.





## NewsNotes

### **NMAC Ceramic Volume Redux**

Wolky Toll < wtoll@oas.state.nm.us >  
OAS Archaeologist, 505-827-6343

Discussion at two recent meetings reached the consensus that NMAC would no longer pursue publication of the long-delayed ceramics volumes and that those authors who have produced manuscripts should feel free to seek other venues for them.

The papers in hand were too few and patchy to make the original intention of statewide ceramic descriptions possible, and there was sentiment against trying to publish miscellaneous papers on the ceramics of New Mexico.

A possible alternative has been initiated by Eric Blinman and Dean Wilson of the Office of Archaeological Studies. They have begun work on descriptions from northwest NM with encouragement (but not commitment) from the University of Utah Press, and it is possible that other parts of the state could also be covered.

If you are interested in this project please contact Eric < eblinman@oas.state.nm.us >.

### **Plan for Albuquerque Archaeology Days**

Lynne Sebastian

Albuquerque Archaeology Days events are organized around six themes. Currently scheduled events are described below, by theme. For later scheduling information call Lynne Sebastian, SRI Foundation, 505 892-5587 or email < lsebastian@srifoundation.org >.

#### **What is Archaeology and How Can I Get Involved?**

Event: Public Lecture: The Awful Truth about Archaeology!

- Date: April 17, 2002, 7:00 PM
- Location: Plaza del Sol hearing room
- Time: 1 hour
- Presenter: Dr. Lynne Sebastian, SRI Foundation

Event: Volunteer Opportunities in Archaeology: information tables manned by volunteers from organizations that offer public involvement opportunities

- Date: April 17, 2002, 8:00 PM
- Location: Plaza del Sol hearing room
- Time: 1 hour
- Participants: Maxwell Museum, Albuquerque Archaeological Society, State Historic Preservation Division Site Stewards Program, Friends of Tijeras Pueblo, Petroglyph National Monument volunteer program.
- Possible Participants: the Archaeological Conservancy, USDA Forest Service Passport in Time program.

### **Hands On The Past**

Event: Archaeology activities day for kids

- Date: May 18, 2002, 1:00-5:00 PM
- Location: New Mexico Museum of Natural History
- Time: 4 hours
- Presenters: Carol Ellick, SRI Foundation, and volunteers from the Albuquerque archaeological community

### **The Archaeological Tourist**

Event: Heritage Evening at Tijeras Pueblo: a guided site tour followed by a presentation on Native American perspectives on the site.

- Date: May 11, 2002, 7:00 PM
- Location: Tijeras Pueblo
- Time: 2 hours
- Presenters: USFS personnel and a Native American speaker to be identified

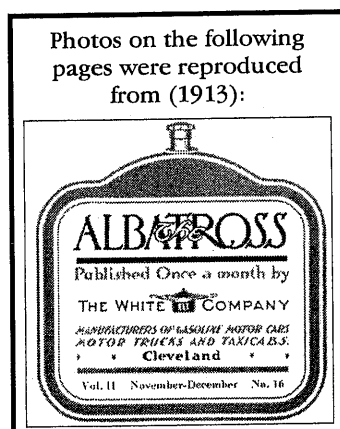
Event: Piedras Marcadas Canyon as a Cultural Landscape: a guided hike

- Date: May 18, 2002, 12:30
- Location: Petroglyph National Monument
- Time: 2.5 hours
- Presenters: Dr. Matt Schmader, Albuquerque Open Space, and Dr. Kurt Anschuetz, Rio Grande Foundation for Communities and Cultural Landscapes

### **The Past Revealed Through Archaeology**

Event: Excavations at the Hubbel House: a public tour day for on-going excavations of historical archaeological deposits. Will include tours of the house and grounds as well.

- Date: To be determined, probably a Saturday in May
- Location: the Hubbel House



## NewsNotes

- Time: 4 hours
- Presenters: Dr. Matt Schmader, Albuquerque Open Space, with volunteers from the Albuquerque archaeological community.

Event: Excavations at San Jose de las Huertas (Possible but not confirmed yet.)

- Date: To be determined; some time in early June
- Location: San Jose de las Huertas
- Time: 2 hours
- Presenters: Dr. Nan Rothschild, staff from the Archaeological Conservancy

### Archaeology – It's More Than Dirt

Event: Tour of archaeological laboratory, artifacts, analyses, interpretations

- Date: May 29, 2002, time to be determined
- Location: SWCA Environmental Consultants, Inc.
- Time: 1 hour
- Presenters: laboratory and analytical personnel, SWCA, Inc.

Event: Tour of archaeological laboratory and curation facilities, study collections

- Date: To be determined, late April
- Location: University of New Mexico
- Time: 2.5 hours
- Presenters: staff of Maxwell Museum and UNM Office of Contract Archeology

Event: Tour of archaeological laboratory, artifacts, analyses, interpretations

- Date: To be determined, late April
- Location: TRC, Inc..
- Time: 1 hour
- Presenters: laboratory and analytical personnel, TRC, Inc.

Event: Demonstration of petroglyph recording techniques, tour of rock art research facility

- Date: May 11, 2002, 9:00 AM
- Location: Petroglyph National Monument
- Time: 2 hours
- Presenters: Monument staff, volunteers, researchers

### The Archaeology of Us

Event: Walking/driving tour of historical archaeological sites in Downtown and Old Town: excavators of urban archaeological sites will describe what they encountered and what it means, using photos, maps and artifacts.

- Date: June 8, 2002, 9:00 AM
- Location: Downtown and Old Town
- Time: 3 hours
- Presenters: Dr. Lynne Sebastian, SRI Foundation; Dr. Carol Condie, Quivera Archaeological Consultants; Dr. Matt Schmader, Albuquerque Open Space; Dr. David Phillips, SWCA, Inc.; Phyllis Davis and Dick Bice, Albuquerque Archaeological Society, and others to be determined.

### 2002 Pecos Conference Update

Judy Reed < Judy\_Reed@nps.gov >  
Pecos NHP

The initial mailing alerting the 1500+ mailing list from 2001 (plus those updates we've received the last few months) is out. A *huge thank you* to the School of American Research for picking up the postage.

An official logo will be selected and included in the next mailing in mid-April, which will be the registration packets. The registration packets will have all the details on this year's theme, registration costs and mailing address info, short program papers, symposia, poster sessions, Friday evening program, brew-off (beer and wine judging), Saturday dinner and dance, book vendors, daily food vendors, camping and other accommodations, T-shirts and other commemorative items, pets, etc.

Several coordinators of special activities have been determined. Please contact them directly if you have questions.

- Mailing List - to correct information or be added to the Pecos Conference mailing list. (contact Tim Burchett at 505/757-6414, ext 2 or tim\_burchett@nps.gov or 505/757-8460 [fax]). NOTE: It appears we have an incorrect address for Kristi Arntzen in St. Louis, Missouri. If anyone knows her, we would like her to contact Tim B. to verify her address.
- Brew-off - same as years before unless Tim Seaman throws in some new features of this activity. (contact Tim Seaman at 505/827-6347, ext 531 or < seaman@arms.state.nm.us >.
- Sunday Field Excursions - several are already in the making; some new ideas and guides still needed. Contact Brent Abel at 505/757-6121 or < babel@fs.fed.us >.

- Thursday Evening Kick-off Reception - the traditional Museum of New Mexico reception. Anyone interested in helping defray the expense for the museum or other assistance/ questions contact Dody Fugate at 505/476-1267 or < dfugate@MIAClab.org >)
- Poster Sessions - be creative, informative, and let everyone what you've been working on. Contact Tim Burchett at 505/757-6414 ext 2 or < tim\_burchett@nps.gov > or 505/757-8460 [fax]).
- Symposia - We'll have two great symposia on the upper Rio Grande Coalition Period and a historical review of southwest archeology and the Pecos Conference. Precise names of the symposia yet to come.

Coordinators will be announced for attending to the on-site registration, and several vendor activities, so keep checking these web sites for updates:

< [www.swanet.org/projects.html](http://www.swanet.org/projects.html) >

< [www.swanet.org/zarchives/pecos/2002/](http://www.swanet.org/zarchives/pecos/2002/) >

### **Field School in Archaeological Tree-ring Dating May 13-31, 2002**

Ron Towner < rtowner@LTRR.arizona.edu >

The Laboratory of Tree-ring Research at the University of Arizona is pleased to offer the first field school devoted entirely to the collection, analysis, and interpretation of archaeological tree-rings.

Participants (undergrads, grads, professionals) will learn the most accurate and precise dating method used by archaeologists via lectures, laboratory exercises, and field work.

The centerpiece of this intensive 3-week course is an 8-day field trip to Chaco Canyon, the ancestral Navajo homeland of Dinétah, and the Jemez Mountains of New Mexico led by Drs. Ronald H. Towner and Jefferey S. Dean.

The first week in Tucson will provide participants with a basic background in dendrochronology and in-

cludes a one-day field trip to the nearby Catalina Mountains.

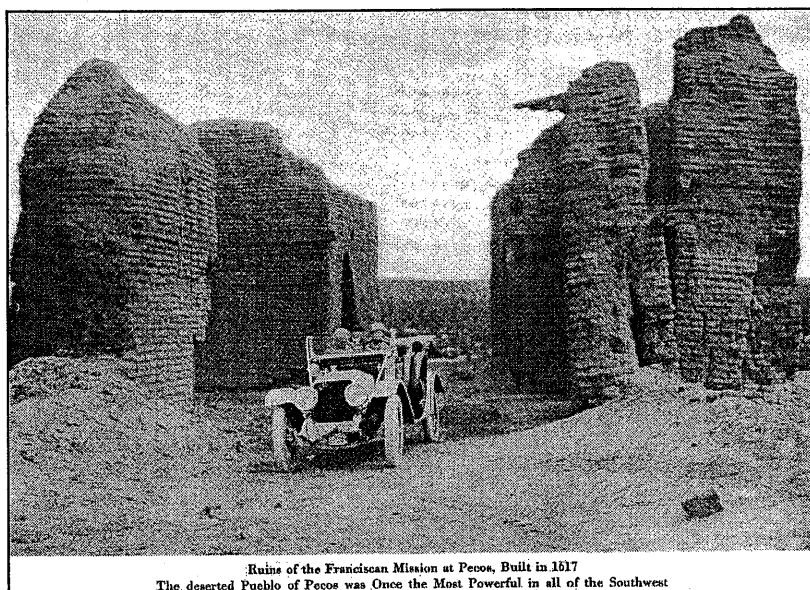
During the third week back in Tucson, participants will prepare, cross-date, and interpret the dendroarchaeological samples collected during the 8-day field trip.

This unparalleled opportunity may not be offered again. Limit: 15 participants Credits: 3 UA credits (Geos 4971/597i) (credits transferable) Cost: \$394 Additional details will be provided in future announcements. For additional information, contact Dr. Towner at < rtowner@ltrr.arizona.edu >.

### **A Partnership for Preservation at Salmon Ruins**

Linda J. Pierce < lpierce@cdarc.org >

The Center for Desert Archaeology announces a new partnership with Salmon Ruins Museum to renew the research potential of this important Chacoan outlier. This partnership is part of the Center's Heritage Southwest Project, a major initiative using research, education, and partnership programs to build a preservation archaeology network across the Southwest. Located in northwestern New Mexico just west of Bloomfield, Salmon Ruins was the focus of a major excavation and stabilization program in the 1970s. Led by Dr. Cynthia Irwin-Williams, it was the largest single archaeological investigation in the Upper San Juan region, and resulted in over 1.5 million artifacts and an extensive documentary record, now housed in the laboratory-museum-library complex on the grounds adjacent to the site.



Ruins of the Franciscan Mission at Pecos, Built in 1617  
The deserted Pueblo of Pecos was Once the Most Powerful in all of the Southwest

"We are very excited to announce this collaboration," says Larry Baker, Executive Director of Salmon Ruins Museum. "The Center for Desert Archaeology will help us meet some critical needs of the Museum."

Phase one of the Center-Salmon partnership focuses upon personnel and research needs at the site. The Center for Desert Archaeology is providing a full-time professional archaeologist to the Salmon Ruins Museum for the next three years. Local archaeologist and long-time Farmington resident Paul Reed has accepted this Preservation Archaeologist position. Paul's major responsibility as the Center's Chaco Scholar at Salmon will be to work with the original excavation and analysis records, as well as old reports, to update and publish a comprehensive report and synthesis of the 1970s investigations.

A second phase of the Center-Salmon partnership is concerned with curation and preservation needs at the Museum. The effects of time, coupled with changes in curatorial standards, mean that the massive collection of artifacts, samples, and analysis data stored at the Salmon Ruins Research Center and Library for almost 30 years now require conservation attention. The entire Salmon collection must be rehoused in archivally stable storage materials.

Data stored on obsolete computer tapes need to be transferred onto computer cds or other similar medium that can be accessed using current computer technology. Old storage buildings are in need of maintenance and improved climate control features. "It's a huge job," says Salmon Ruins Museum volunteer and professional archaeologist Lori Reed, who is leading the curation project. "We estimate that supplies alone will cost close to \$60,000. But the site and its collections are worth it."

To begin the work on this critical project, the Center has made a \$5,000 grant to Salmon Ruins for initial conservation materials. Center and Museum staff are working together to raise the rest of the funding needed to complete the curation work. "There have been very few modern excavations of Chacoan great houses such as Salmon Ruins. The knowledge that can be potentially gained from studying the Salmon collections is enormous," explains William H. Doelle, President and CEO of the Center for Desert Ar-

chaeology. "We are pleased to be able to play a part in insuring that this important site continues to make major contributions to the study of our shared past."

The Center for Desert Archaeology, a private non-profit organization located in Tucson, Arizona, promotes stewardship of the archaeological and historical resources of the Greater Southwest through active research, preservation, and public education. For more information, contact us at (520) 882-6946, email < center@cdarc.org >, or visit our web site at < www.cdarc.org >.



Smithsonian Center  
for Materials Research and Education

<http://www.si.edu/scmre/>

[http://www.si.edu/scmre/mail\\_irradiation.html](http://www.si.edu/scmre/mail_irradiation.html)

### ***Effects on Research Specimens and Museum Collection Items from Electron Beam Irradiation of Mail by the US Postal Service***

November 5, 2001

#### ***1. Proposed radiation technology to be used in sterilization of mail sent by USPS***

The US Postal Service intends to irradiate selected mail to sterilize it from possible anthrax contaminations, using high energy electron irradiation technology. Irradiation facilities are to be established at a number of major mail handling centers. At this time it is unclear whether irradiation will be restricted to first class mail or whether package mail is also targeted for this treatment. Some information on the methodology was obtained from Mr. Jeff Boeger of the SureBeam Corporation, which manufactures the 150 kW linear electron accelerators that will be used to irradiate mail by the USPS. This equipment produces electrons with an energy of 10 MeV. Electrons of such high energy have a relatively high penetrating power; for example their range in aluminum is about 2 cm. In organic materials, mainly composed of elements with a much lower Z value, this range will be appreciably longer, and for mail (paper, cardboard) it will be approximately 30 cm. The technology is used in the irradiation of food, for purposes of pathogen sterilization, where the packaged food is transported on a conveyor belt through the radiation field. This same technique would be used for the



application to USPS mail.

Besides the biocidal application, radiation is also used industrially to initiate specific chemical reactions (such as polymerization of synthetics) or, through the chemical effects, to affect the properties of materials. A few examples of the latter: the plastic coating on virtually all electrical wire is irradiated to render it more resistant to weathering; heat-shrink tubing is irradiated polypropylene; and the non-stick coating of cookware is irradiated Teflon -- where the non-reactivity of Teflon is modified so that it will adhere to the metal cookware surface, while still retaining most of its non-stick characteristics.

## 2. Interaction of radiation and materials

High energy irradiation causes the deposition of large quantities of energy in the irradiated material, and this in turn causes chemical reactions that are responsible for the desired as well as undesirable effects.

The irradiated matter absorbs the energy through ionization. Thus, an electron from the accelerator can hit an atom in the target material, and in this process the former may lose all or part of its energy. The amount of absorbed energy minus that needed to induce the ionization is transmitted to the ionization products;

the electron(s) emitted from the atom will move at high energy through the material and induce secondary ionizations. If the original electron did not transfer all its energy in the first interaction with a target atom, the process is repeated, until all its energy has been transferred. The secondary ionization process will continue till all the kinetic energy of the accelerator particle has been used up in ionization processes.

The ions that are formed will eventually recombine with free electrons, but these recombined atoms (and molecules) will be highly energetic and chemically reactive. Free radicals are formed, and many of these may have life times well beyond the time span involved in the initial processes. The number of chemical reactions of a given type that take place will depend on the total amount of energy deposited. This is represented in the concept of radiation "dose", expressed in Grays, notation Gy. The latter unit represents the deposition of 1 Joule of energy per kilogram of irradiated matter. Similarly, the dose rate, a measure for the rate at which the energy is deposited, can be expressed in Gy/min. Obviously, the total dose is a product of the dose rate and the time of irradiation, and the dose rate, in this case of high energy electron irradiation, is a function of the particle energy and the beam intensity. It is of interest to note that the yield rate of a radiation induced chemical reaction often is itself somewhat dependent on the dose rate, but for the purposes of this

discussion paper that effect has no great significance.

The induced chemical reactions are the basis of all practical applications of radiation technology. In the biocidal applications, they cause damage that leads to the demise of the organism. The dose needed to induce

sufficient damage depends very much on the type of organism. Generally, the lethal dose is inversely related to the complexity of the organism. For example, in highly developed life forms such as humans, a dose of around 1 Gy to the whole body will kill enough cells in vital organs to cause death. For insect control, doses of around 500 Gy are needed for a satisfactory kill rate. Microorganisms, which have no vulnerable cell structures, are killed by major destruction of their DNA, requiring



Inspecting the Ruins of the Pueblo of San Cristobal



much higher radiation doses for eradication, in the order of tens of kGys. Food irradiations are typically performed with doses of 1.5 - 3 kGy, while eradication of fungal spores requires doses of around 10 kGy and higher.

The dose to be applied in the USPS mail irradiation for the protection against anthrax spores appears still to be a matter of discussion. Yet, it can safely be assumed to well exceed the 10 kGy level. Dr. Burrell Smittle of the Florida State Department of Agriculture expressed the opinion that levels of about 25 kGy would be used, while Dr. Donald Thayer of the USDA Research Service and Dr. Steven Seltzer of NIST indicated an anticipated use of significantly higher doses in the order of 50 - 60 kGy. It was also noted that, if mail were to be irradiated from both sides, this dose would be doubled. These very high doses are needed to obtain the sought after "kill ratio" which is in the order of 12-14 decades (in other words, the fraction of surviving spores is intended to be only in the order of  $10^{-11}$  to  $10^{-13}$ ).

Ultimately, the deposited energy will be converted to thermal energy, causing a rise in temperature of the irradiated material. For the conditions considered for use by USPS, this effect could amount to a temperature raise in the order of 5 degrees centigrade.

### 3. Radiation effects on materials

As mentioned above, the large quantities of energy deposited during irradiation in the target materials leads through the formation of ions, activated atoms and molecules, and free radicals, to a complex series of chemical reactions, and these can have a very significant effect on the chemical and physical properties of the irradiated compounds. These effects can be even more enhanced if the irradiation takes place in a regular atmospheric environment when reactive species such as ozone,  $O^*$  and  $OH^*$  radicals are formed.

The number of occurrences of a given reaction depends on the dose. Thus, the amount of induced change in material properties can, like the biocidal efficacy, be controlled by the size of the administered dose. Yet, the amount of change that is permissible (or desirable), depends on the nature and use of the irradiated materials and objects: what may be regarded as trivial effects in the context of industrial applications can be unacceptable in the case of museological and archival col-

lection holdings. It is this latter context with which we are concerned here, and the following discussion pertains to material effects on a scale of magnitude that might compromise the value of such collection materials.

The reactions that we are concerned with include the destruction of existing molecules (chain scission and depolymerization, removal of functional groups as in deamination, decarboxylation etc., and oxidation) as well as the formation of new ones (through recombinations and cross-linkages.) While inorganic materials are not immune to radiation induced effects (and later we will discuss some of these as they are of concern), it is the organic materials that are most vulnerable to significant damage. Literature data on damage rates in the ranges that are of concern to museum and archival collections are limited, but a certain amount of work has been done in order to assess the applicability of radiation technology for biodegradation control in collections. In 1995, SCMRE was the organizing host to a expert consultants meeting on that subject sponsored by the International Atomic Energy Agency (IAEA), attended by experts from Europe and the USA. Generally, most of the information presented at that meeting still represents the current level of knowledge, since in subsequent years the development of alternative, far less aggressive methods for effective biodeterioration control in a museum collections context have made the application of radiation technology for the purpose something of limited, and at best occasional, utility. Additional information can be gathered especially from literature concerned with the sterilization of food, medical supplies and various other industrial commodities.

Of first concern are the polymeric materials, both natural and synthetic. The natural polymers are more vulnerable to significant change than their synthetic counterparts, and of the natural polymers, cellulose is the most vulnerable. The reactions of concern are chain scission, cross linkage, and oxidation. The effects of these various reactions are depolymerization, loss of strength, embrittlement, acidification and discolorations, and a greatly enhanced rate of subsequent aging deterioration. Quite a lot of experimental work has been done on radiation induced damage to cellulosic materials, since it was hoped that this technology could be used to address one of the major problems in the library and archives field i.e. mold growth in collections that have been exposed to water, for instance during the dousing of a fire.

Work done in collaborations between the Centre d'études nucléaires de Grenoble and the Central Laboratory of the Netherlands Institute for Cultural Heritage, indicates that, in order to avoid an unacceptable amount of damage to paper, the dose has to be kept below 2 kGy, well below the level necessary for effective microorganism control. At dose levels of around 4 kGy, serious degradation was observed, and at 7 kGy these researchers recorded extensive oxidation and depolymerization. Other cellulosic materials, especially the fibers including cotton, bast fibers, etc., tend to be equally sensitive. Studies on cotton by a team of Scottish and Greek textile scientists indicated, for example, an exponential reduction of tensile fiber strength with dose, where this strength was reduced by ca. 50% at 100 kGy, while early work at Cornell University recorded a 27% reduction in degree of polymerization in cotton cellulose at 6 kGy. While cellulose in wood must be expected to undergo comparable changes, significant mechanical damage to wood, such as investigated in the studies on waterlogged wood from the Mary Rose shipwreck, requires quite high doses, in the order of 100 kGy. Industrial sources tend to regard damages at doses up to 10 kGy as "somewhat trivial" though they concede that color changes occur quite readily at these levels.

The other major group of natural polymers, the proteinaceous ones, tends to be less susceptible to radiation damage than the cellulosic materials. The major effects result from reactions involving individual amino acids, including deamination, and total disconnection of an individual amino acid from the polymer. There appears to be less susceptibility to chain scission, nor evidence of cross linkage, at the dose levels of the published experiments (up to about 250 kGy). Research on the effects to wool fibers, for instance, showed a

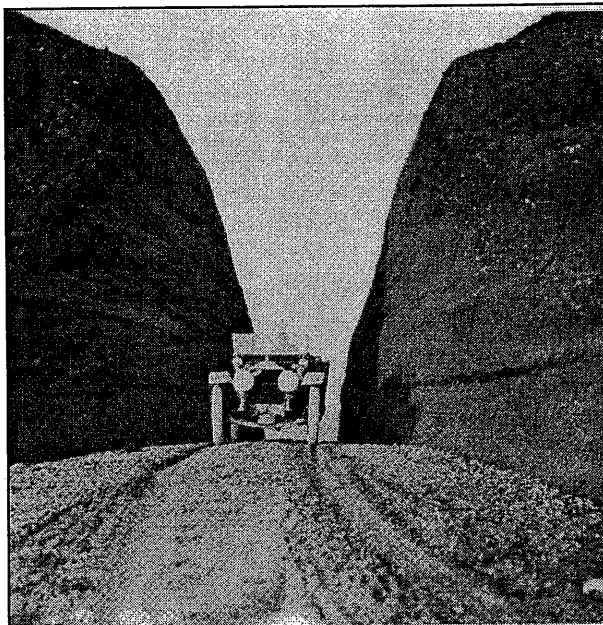
loss of about 10% in tensile strength for wool fibers exposed to doses of 20 kGy of gamma radiation, while exposure to accelerated electrons only showed perceptible damage at the 50 kGy level. However, such damage cannot be overlooked when assessing its admissibility in the context of museum collection items, especially since the doses anticipated to be used by the USPS are in this same range.

Synthetic polymers are generally less vulnerable to radiation damage than their natural counterparts. The most sensitive is Teflon, which is reported to show significant effects at dose levels of 10 kGy. Canadian textile researchers at the University of Manitoba studied radiation effects on a

number of nylon fibers, where they found that doses of 10 kGy resulted in about a 5% loss of tensile strength, while 15 kGy induced losses of 10-20%.

A special case is that of DNA molecules. The relatively large size of the DNA molecule results in a high probability of it being hit by one or more radiation particles. It is worth noting that the primary mode of radiation induced eradication of micro-organisms is major destruction of the DNA. Hence, irradiation at the levels intended for anthrax spore extermination

will also induce major damage to DNA in research specimens. These effects will include fragmentation of the molecule and, through recombinations, formation of mutations. The mutagenic properties of ionizing radiation are, of course, well known, and result from these recombination reactions. While a significant fraction of the original DNA of the specimen irradiated at dose levels of 10-50 kGy may be preserved, the question, which arguably can only be addressed on a case-by-case basis, is to what extent the research value of the specimen is compromised, for the intended or future studies, by the large scale destruction of the specimen's DNA, and the formation of significant quantities of mutated varieties and of major concentrations of fragmented DNA.



The Road Between Santa Fe and Albuquerque  
is Almost Ideal for Motoring

A class of organic molecules that is especially vulnerable to radiation induced damages is that of the dyestuffs. Complete removal of functional groups such as in the azo-dyes, and the destruction of conjugated double bonds, will result in major fading and color changes at dose levels well below those required for the damages discussed above. In fact, these radiation induced color changes in dyes have been used for purposes of radiation dosimetry. It is not unreasonable to predict that, at the dose levels anticipated to be used by the USPS, dyes in textiles, lake pigments, various ethnographic objects, and scientific specimens (e.g. microscopic slide specimens, flowers, elytra) could undergo extensive color changes or fading. The same holds for color photographs; both color slides and prints should be expected to fade and show color shifts.

In addition to these visual effects that result from destruction of dye molecules, one also must anticipate the occurrence of significant color changes, be it blanching or discolorations, in other organic materials, when chromophore sites are created or destroyed. Color changes are also to be expected in a number of inorganic materials, especially glasses and minerals/gemstones. These effects are due to the population of localized, metastable electron traps at lattice imperfections, by free electrons, resulting from ionizations. Glass can acquire a purple color, while various gemstones acquire a variety of colors. These effects can generally be mitigated by annealing the specimen; however, in the case such as a microscope slide with balsam mounted specimen, heating is not a viable option, and it is not necessarily a recommended practice for mineral specimens either.

It is worth noting that irradiation with 10 MeV electrons will not cause the formation of radioactive isotopes through nuclear reactions, since the thresholds for such reactions would require higher electron energies. In organic materials, with relatively low Z elements, the electrons from the accelerator will lose their energy through interaction with the electrons of the target material's atoms, causing ionizations; with the nuclei their interactions are mainly constricted to scattering, with no consequences for the target material. If the accelerated electrons would hit targets consisting of elements with much higher Z values,

increasing amounts of their energy would be lost in the form of "bremsstrahlung", i.e. high energy photons. High energy photons are able to interact with atomic nuclei and induce nuclear reactions; however, the bremsstrahlung from 10 MeV electrons would be below the energy threshold for such reactions.

#### ***4. Consequences of the planned electron beam irradiation of USPS mail for the mailing of museum and archival collection items***

Preliminary information suggests that at this time only irradiation of mail, not of packages, is planned, and this may reduce the concerns to a small fraction of all specimen exchange. Should this situation change, and should USPS start to irradiate packages too, it may be more effective to switch from electron to gamma irradiation, presumably applying a similar size dose. For the purposes of the concerns addressed here, the effects would be largely the same, both qualitative and quantitative.

Summarizing the information as it pertains to typical collection specimens exchanged by museums and research laboratories and transported by mail, the following concerns emerge.

- Living specimens (seeds, cuttings, etc.) will be killed by this irradiation.
- Materials of cellulosic composition, especially plant fibers and paper, will be quite seriously affected. They will lose significant tensile strength and will become more brittle, while the induced chemical changes, chain scission and oxidation, will accelerate their aging processes. Discoloration is also to be expected. Oxidation also will result from interaction with ozone formed in air during the irradiation; while one may expect efficient ventilation at the radiation equipment, ozone also will be formed within the enclosures of the mailed materials, where the concentration could range in the tens of ppm.
- Materials of proteinaceous composition, while less vulnerable than the cellulosic ones, still can be expected to be affected at the proposed dose levels in terms of physical changes (embrittlement of skin products, loss of fiber strength in wool and hair samples), and in terms of accelerated aging. Again, discolorations are to

be expected. Again, ozone production is an additional factor.

- Samples of interest because of their genetic information can be compromised, to an extent depending on the type of questions being addressed by the research in which they are to be used, because of large scale destruction of DNA molecules, accompanied by recombinations.
- Dyestuffs will fade, resulting in fading and color shifts in textiles, stained specimens, and color photographs. The same effect may result in shifts and fading of the natural colors of specimens.
- Glass can undergo blue/purple discolorations; this may affect the research value of microscopic slide specimens. While this discoloration of the glass can be removed through annealing, this would not likely be a viable option for mounted specimens because of the effects of the heating on mounting medium and the specimens themselves.
- Mineral specimens may develop colors and/or change colors; generally these effects are reversible through annealing, though of course the effects of that heating on the specimen depend on its nature.
- In the case of specimens under alcohol, there is the potential for some radiolysis of the preservation solution, leading to the formation of various ions and free radicals in the solution. These reactions are very complex and can lead to a wide range of reaction products, but the concentrations of the latter should be in the ppm range and do not form a major concern. Additionally, the temperature raise resulting from thermalization of the electron beam energy would raise the pressure in the container somewhat, but this effect is not likely to be of sufficient magnitude to cause failures of the containers unless the integrity of the latter were already seriously compromised.

- Rubber and plastic stoppers of bottles and vials may become somewhat embrittled, but not to an extent of losing the closure of the containers.
- Magnetic media (floppy disks, zip disks, audio and video tape) will probably lose significant information content. Undeveloped photographic film will be exposed.
- Radiocarbon dates of irradiated samples will not be affected in a significant way, although there is a theoretical possibility for contamination as a result of chemical reactions that involve reactive groups from carbon containing packaging material.
- Samples intended for thermoluminescence dating will become useless, since this irradiation will deposit a dose that exceeds the "natural" one by orders of magnitude.
- Since no nuclear reactions are induced under the proposed conditions, generation of radioactivity in the irradiated samples is not a concern.
- It is not practical to try to mitigate the radiation effects through shielding of the samples, e.g. with lead metal. The weight of the shielding required to stop these high energy electrons would be quite high and make the mailing expensive; moreover, the bremsstrahlung generated by interaction of the electrons with the high Z elements of the shielding could still result in appreciable doses to be administered to the material inside. USPS also might have objections, not only since it presents an attempt to circumvent their preventive actions, but also since this bremsstrahlung could conceivably create other problems at the irradiation facility.

In view of the above it is strongly suggested that mailing through USPS of vulnerable specimens and collection items, as well as important research information on magnetic media or undeveloped film, be avoided unless it can be arranged for these mailings to be exempted from irradiation.

This information has been prepared by the Smithsonian Center for Materials Research and Education (SCMRE) for your information and as a service to the professional community. For information, contact:

Ann N'Gadi, Technical Information Officer  
SCMRE

(301) 238-3700 ext 134; fax (301) 238-3709

< NGadiA@scmre.si.edu >

### New Publication

#### ***Early Pithouse Villages of the Mimbres Valley and Beyond***

#### ***The McAnally and Thompson Sites***

#### ***in Their Cultural and Ecological Contexts***

by Michael W. Diehl and Steven A. LeBlanc with contributions by Roger Anyon, John W. Arthur, and Paul E. Minnis.

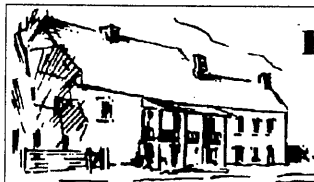
Peabody Museum Press; 160 pages, 29 figures, 47 tables, appendix, bibliography; paperback, ISBN 0-87365-211-8, \$30.00; September 2001.

[PMP press release.]

"The authors of *Early Pithouse Villages of the Mimbres Valley and Beyond* develop a new chronology for the occupation of the region and discuss competing models of Upland Mogollon Pithouse period lifestyles, architecture and residential mobility, paleobotanical data, ground stone and chipped stone artifacts, ceramics, osteofaunal remains, and miscellaneous artifacts uncovered at the two sites.

"Their research suggests that as time passed, Mogollon pithouse villagers invested ever-greater effort in the construction and maintenance of their dwellings, indicating longer occupations of pithouses on subannual and perennial scales. Increases in the amounts of maize remains suggest that agricultural plants may have become increasingly important through time. The analysis of ground stone artifacts (manos and metates) indicates that the efficiency of maize-grinding tools increased among Early Pithouse villagers throughout the first millennium A.D.

"*Early Pithouse Villages of the Mimbres Valley and Beyond* is Volume 83 in the distinguished *Papers* series of the Peabody Museum of Archaeology and Ethnology."



## Lincoln County Historical Society

*Lynda Sanchez is an energetic booster for the Lincoln County Historical Society as VP for Programs and Public Outreach, and editor of the LCHS Newsletter.*

*Her philosophy is simple and direct: "I... believe that both Historians and Archaeologists should work hand in glove to piece together the images and story of our incredible heritage and past..."*

*Her vision and energy must be on the mark since the LCHS's membership has doubled over the past three years to its current 300.*

*Seems to this editor that NMAC and a host of other organizations around the state would be lucky to have Lynda on our teams.*

*For details about the LCHS's scope and mission, contact Lynda A. Sanchez at Box 67, Lincoln NM 88338; (505) 653-4821. Wow.*

### ***Law Revises Standards for Scientific Study***

Andrew C. Revkin

*The New York Times* 21-Mar-02

It does not even take effect until next Oct. 1. But a little-noticed law called the Data Quality Act, signed in the waning days of the Clinton administration, has set off a fierce debate over how best to weigh health and environmental risks.

The law – supported, and largely written, by industry-backed groups – requires the government for the first time to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. It would create a system in every government agency under which anyone could point out errors in documents and regulations.

If the complaints were borne out, the agency would have to expunge the data from government Web sites and publications. More broadly, opponents of the new law say that while nobody wants the government to issue flawed data, the new process could undermine valid regulations and stifle government efforts to convey information on issues like climate change and cancer risks.

The National Academy of Sciences is convening a meeting today at which officials from government regulatory agencies, lawyers and experts

from industry, science and environmental groups will discuss the law's potential for harm and good.

Even before the law takes effect, one of the groups that helped write it has already cited it in a petition requesting the withdrawal of a report on global warming.

The group, the Center for Regulatory Effectiveness, said in a Feb. 11 letter to the White House Office of Science and Technology Policy that a government assessment of the regional impacts of climate change is alarmist and based on flawed computer models.

If the center prevails, the study – the product of 10 years of work and critiques by independent scientists – could be removed from government Web sites and files. Many climate scientists, even some whose criticisms of early drafts were quoted in the center's petition, say the challenge is unfounded.

The Data Quality Act was quietly enacted in December 2000 as 27 lines in a giant budget bill.

It charged the government to create procedures "ensuring and maximizing the quality, objectivity, utility and integrity" of scientific information and statistics disseminated by federal agencies. Now, dozens of government agencies are struggling to translate that language into thousands of pages of quality-control guidelines.

Agencies must finish drafts of their science quality procedures by May 1 and send the final version to the White House Office of Management and Budget by July, where the Bush administration will check to be sure guidelines meet its standards.

The effort is being overseen by Dr. John D. Graham, an expert on risk and regulation from Harvard who last year became the administrator of the office of information and regulatory affairs of the Office of Management and Budget. Dr. Graham's focus on using strict statistical analysis of risks and benefits to judge where to focus public resources has made him a favorite of industry and a target of private environmental groups, which often rely on public passion to drive campaigns.

He said that the administration's goal was to ensure that all government agencies – in every duty – consider not just the quality of the data they use and communicate, but also the quality of their own analysis.

The result, he said, is that "in the long run this will focus government on problems that science suggests are very serious and away from problems that are less serious."

The prospect has industry officials elated. Many of those who helped draft the measure defend it as a vital breakthrough in their years-long effort to pinpoint weaknesses in the science behind costly regulations.

"This is the biggest sleeper there is in the regulatory area and will have an impact so far beyond anything people can imagine," said William L. Kovacs, the vice president for environment, technology and regulatory affairs of the United States Chamber of Commerce.

"This is the first time where, if the data is not good, you can actually begin challenging the agency," Mr. Kovacs said. The law, by setting a government standard for scientific quality, could also help industry prevail in lawsuits claiming rules relied on poor data or analysis, he and other industry representatives say.

A prime target, he and other industry representatives said, is new Environmental Protection Agency rules restricting the finest pollution particles, which are mainly emitted by diesel engines and power plants and have been linked increasingly to lung and heart ailments.

Many industry officials say the rule is too broad and the E.P.A. should first find which types of small particles are hazardous. Supporters of the regulations, which have not yet taken effect, say it would take years of additional study to pinpoint the exact hazard, but people are dying from such pollution now.

Senator James M. Jeffords, the Vermont independent who is chairman of the Senate environment committee, said the goal of the law is laudable, but it could easily work against effective government.

"Opponents of government action to protect the public's health and the environment," Mr. Jeffords said, "have latched on to the Data Quality Act and are attempting to misuse it to prevent the public from getting valid information about threats to their well being and quality of life."

Following guidelines written by the Bush administration, government agencies are creating procedures for judging the quality of the data they use – whether generated within the government or by university scientists, hospital researchers, companies or private groups.

The more influential the data are likely to be,

## NewsNotes

the higher the quality standard they must meet, the guidelines say. In some cases, the guidelines state, even studies published in respected peer-reviewed journals will require further confirmation.

Under the data law, by October every agency must have the equivalent of a complaints line, through which individuals, companies or groups can challenge scientific findings.

The Environmental Protection Agency on Tuesday initiated a four-day online comment process on its Web site, [www.epa.gov/oei](http://www.epa.gov/oei), seeking ideas for how it might best create such a system.

Some scientific groups are concerned that insufficient attention has been paid to the new regulation and its likely effects.

"This is a critical juncture," said Joanne Padrón-Carney, director of the Center for Science, Technology, and Congress of the American Association for the Advancement of Science, the world's largest scientific organization. "Each agency will be clarifying its own methods for how they define things like quality. It's important for scientists to pay close attention."

Ms. Carney said there was potential for problems if industries or institutions opposed to certain regulations demanded complicated, time-consuming, intrusive reviews of data.

"We really would not like to have science attacked as a way of being sure that policy isn't made," she said.

Views remain mixed on whether the benefits of the law will outweigh the potential harm.

Alan B. Morrison, a lawyer on leave from Public Citizen, the private consumer watchdog group in Washington, said the law could provide unexpected opportunities for critics of any government agency – from the Defense Department to

the Nuclear Regulatory Commission.

It applies just as much to data released by the Pentagon as it does to E.P.A. pollution studies, Mr. Morrison noted.

But over all, he said, he is convinced that "its clear purpose is to slow agencies down."

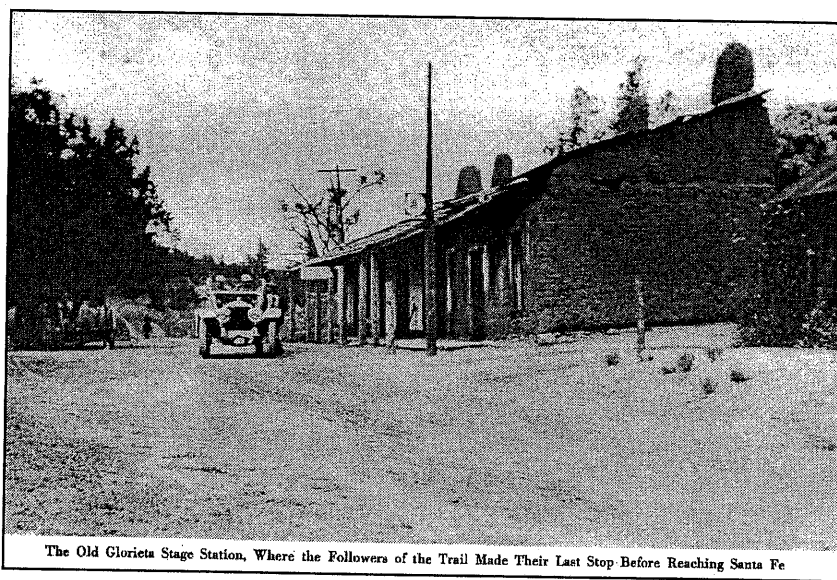
Many experts on regulations say that if the guidelines are written appropriately, they could spur agencies to carefully, openly review the quality of science used to write rules or set policies in advance.

Currently, in most cases, a pollution or health standard is published and only then the fighting begins over whether it is valid or not, said Frederick R. Anderson, a corporate lawyer in Washington who is part of the National Academy of Sci-

ences panel conducting the meeting today.

Often, such fights spill over into the courts, resulting in years of costly litigation.

Dr. Graham said he expected that the guidelines, instead of burdening agencies with new costs and work, would reduce the burden by cutting the number of such



lawsuits.

But some architects of the legislation say they expect it will help them in the courtroom. Most notable is James J. Tozzi, the founder of the Center for Regulatory Effectiveness.

With a government-set yardstick for quality, Mr. Tozzi said, critics of regulations can now build more convincing cases showing that an agency was arbitrary and capricious in its choice of data. Until now, such suits have generally failed.

The most important aspect of the law, he said, is that it creates a consistent system for uncovering errors early and encouraging agencies to be more careful about how they use data.

"It's the information age," Mr. Tozzi said. "Now in the world's most powerful government you're going to have to issue information that's accurate."



## New Mexico Archeological Council

NMAC is a nonprofit organization whose purpose is to maintain and promote the goals of professional archeology in the State of New Mexico, in a manner consistent with Section 501(1)(6) of the Internal Revenue Code.

Its goals are:

- Promoting archeological research within New Mexico, and disseminating knowledge arising from that research.
- Promoting awareness of New Mexico's cultural resources among public agencies, corporations, and members of the public.
- Encouraging the legal protection of cultural resources.
- Encouraging high standards for professional archeology.

***Please send membership inquiries and dues to NMAC at the address shown below.***

## NewsMAC

*NewsMAC* is a quarterly newsletter concerned with cultural resource management and archaeological research in the Southwest. It is published for NMAC members – dues are \$20.00 per year for individuals; \$35.00 for sponsors; and \$35.00 for institutions.

NMAC encourages and gives priority to publishing member contributions to *NewsMAC*. They may be submitted in four ways (in descending order of preference):

- Contained within an e-mail message.
- As an unformatted text file attached to an e-mail cover message.
- As an unformatted text file contained in a PC-compatible floppy disk.
- Printed, via U.S. mail or via fax.

Articles or letters to the editor should be sent to

Alan Shalette, NewsMAC Editor  
<AlShal@aol.com>  
5294 Mesa del Oso NE  
Albuquerque, NM 87111  
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# News NMAC

NEWSLETTER OF THE NEW MEXICO ARCHEOLOGICAL COUNCIL

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[2002]

# News NMAC

NEWSLETTER  
OF THE  
NEW MEXICO  
ARCHEOLOGICAL COUNCIL

2002 Number 3

July 2002

## ***NMAC Begins Its 25th Year!***

See page 3.

## ***Baca Resigns, Biella Appointed Interim SHPO***

See President's Report, and NewsNotes on  
pg. 21.

## ***NMAC 2002 Grants Announced***

See Grants Report on page 20.

## ***ARMS Introduces New Map Server***

See ARMS Report on page 15.

## ***Keur's Big Bead Mesa Collection Featured at the April 20***

### ***Membership Meeting***

See Current Research Report on page 7.

## ***Growing Opportunities for Online eResearch***

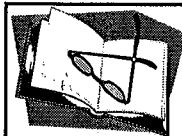
See Internet Notes on page 26.

## ***Negotiating WPD to PDF Conversions***

See Internet Notes on page 29.

## ***NMAC Special Publications #1 & #2 Reprints Available***

See page 31.



## **President's Report**

Mike Bremer

This past week I agonized over having something to discuss with you until I realized where I was sitting. I spent this past week participating in a training workshop presented by Martin McAlister of Archaeological Resource Investigations on Archaeological Damage Assessment. Martin is a very impassioned speaker and kept us educated and entertained the entire week.

Agency, contract and university archaeologists attended the class. It was gratifying to see such an intense interest in the subject from such a diverse group of archaeologists. The class was designed to teach students how to prepare damage assessments for cases associated with the Archaeological Resources Protection Act (ARPA) and you can imagine the side discussions taking place about our nation's cultural heritage including what we anticipate the legacy of ARPA will be.

Martin makes no bones about his feeling that the future will hold our generation responsible for the legacy left to them in terms of cultural heritage. He also believes there are very real threats to that legacy and that ARPA is one way of fighting those threats. He focuses on educating people about the importance of ARPA and using ARPA to combat vandalism.

I came away from the training feeling that the nation's cultural heritage was in good hands but that threats to the resource grow every day. It may be a no-brainer but if we do not get the public to understand the value of the Nation's cultural heritage and the threats to it, we will rapidly lose support for protection of the resource we value the most.

I do not intend for this to be an advertisement for the class but rather to share with you my heightened awareness about cultural heritage

***Last date for contributions to  
NewsMAC 2002 (4) will be  
September 13, 2002.***

(Continued on page 6)



## Calendar

### NMAC

Oct 10-12  
Farmington

**BLM/NMAC Dineta Workshop** – discussions on architecture, land use patterns, material culture (GIS), and tours of all types of early Navajo sites. Info: John Torres < jtorres@miacalab.org >.

Nov

**BLM/NMAC Mimbres Workshop** – date and location t.b.a. Info: John Torres < jtorres@miacalab.org >.

### Other

Jul 8

Forms and payments for the Pecos Conference must be sent to obtain discount rates. See page 21. Complete info: < www.swanet.org/projects.html > or < www.swanet.org/zarchives/pecos/2002 >.

Jul 16  
Santa Fe

**ARMS Amendment Public Hearing** – 10:00 am in the auditorium of the Museum of Indian Arts and Culture, 710 Camino Lejo, Santa Fe, New Mexico. See page 15.

Jul 13-14  
Santa Fe

**Sun Mountain Gathering** – see Lab Report on page 17.

Aug 8-11  
Pecos NHP

**2002 Pecos Conference** – at Pecos NHP. See page 21.

Aug 22-27  
Québec City  
Canada

**6th International Conference on Dendrochronology** – theme: *Dendrochronology, Environmental Change and Human History*. Info: < www.cen.ulaval.ca/dendro2002/information.html >.

Sep 25-28  
Reno NV

**Society for Commercial Archeology Conference** – theme: *Reno or Bust: Sin and the American Roadside*. Info: < www.sca-roadside.org/RENO/Renopapers.html >.

Sep 28  
Philadelphia PA

**Ethics and the Practice of Archaeology** – symposium at the University of Pennsylvania Museum. Abstracts of papers (up to 250 words) should be sent by 15-Mar-02 to: Ethics Symposium, 325 University of Pennsylvania Museum, 33rd and Spruce Streets, Philadelphia, PA 19104. FAX: 215-898-7462. Info: contact < ethics@museum.sas.upenn.edu > or < www.museum.upenn.edu/Ethics >.

Oct 4-5  
Silver City

**2002 New Mexico Archeology Fair** – info: see page 21.

Oct 4-5  
Rohnert Park  
CA

**Gender and Archaeology Conference** – at Sonoma State University (50 mi. north of San Francisco). Info: < www.geocities.com/gender\_conference/home.html >.

Oct 18-19  
Las Cruces

**12th Mogollon Archaeology Conference, Biennial Meeting** – contact Terry Moody or William Walker at Department of Sociology and Anthropology, Box 3BV, New Mexico State University, Las Cruces, NM 88003; (505) 646-2148, (505) 646.7006; < temoody@nmsu.edu >, < wiwalker@nmsu.edu >.

Oct 24-27  
Savannah GA

**ACRA 2002 Annual Conference** – info: < www.acra-crm.org/conference.html >. Register online for the conference and for the hotel at < www.acra-crm.org/conference.html#anchor1539845 >.

Nov 20-24  
New Orleans LA

**101st Annual Meeting of the American Anthropological Association** – info: jmeier@aaanet.org; (703) 528-1902, extension 3025.

Aug 2003  
Casas Grandes  
MX

**2003 Pecos Conference** – Paquime, Casas Grandes, Chihuahua, Mexico. Info: Jose Luis Punzo Díaz, Director, Museo de Las Culturas del Norte, INAH Centro Cultural Paquime, Casas Grandes, Chihuahua, C.P. 31850. Telephone: 169-2-41-40; < punzoj@prodigy.net.mx >.

## NEW MEXICO ARCHEOLOGICAL COUNCIL

P.O. Box 25691  
Albuquerque NM 87125

### Web Site

< HTTP://WWW.UNM.EDU/~VANPOOL/  
NMAC/NMAC.HTML >

### NewsGroup

< NMAC-L@LINUX08.UNM.EDU >

### 2002 OFFICERS

**President – MIKE BREMER**  
(505) 438-7846

< MBREMER@FS.FED.US >

**President-elect – LARRY BAKER**  
(505) 632-2013

< SALMONRUIN@OUTERBOUNDS.NET >

**Vice President – JOHN TORRES**  
(505) 476-1261

< JTORRES@MIACLAB.ORG >

**Treasurer – BILL DOLEMAN**  
(505) 277-5853

< WDOLEMAN@UNM.EDU >

**Secretary – KATHY ROXLAU**  
(505) 247-4933

< ROXLAU@TTNUS.COM >

**Editor – ALAN SHALETTE**  
(505) 291-9653

< ALSHAL@AOL.COM >

### COMMITTEES

**Education – CHUCK HANNAFORD**  
(505) 827-6343

< CHANNAFORD@LVR.STATE.NM.US >

**Grants – TIM SEAMAN**  
(505) 827-6347 x7505

< SEAMAN@ARMS.STATE.NM.US >

**Legislative – OPEN**

**Publications – OPEN**

# NMAC Begins Its 25th Year!

STATE OF NEW MEXICO



CERTIFICATE OF INCORPORATION  
OF

NEW MEXICO ARCHEOLOGICAL COUNCIL, INC.

97,138

The State Corporation Commission certifies that duplicate originals of the Articles of Incorporation attached hereto, duly signed pursuant to the provisions of the Non-Profit Corporation Act, have been received by it and are found to conform to law.

Accordingly, by virtue of the authority vested in it by law, the State Corporation Commission issues this Certificate of Incorporation, and attaches hereto a duplicate original of Articles of Incorporation.



In Testimony Whereof, the State Corporation Commission of the State of New Mexico has caused this certificate to be signed by its Chairman and the seal of said Commission to be affixed at the City of Santa Fe on

July 10, 1978

Attest:

MANUEL L. SALINAS

Director

COLUMBUS FERGUSON

Chairman

# NMAC Begins Its 25th Year!

## ARTICLES OF INCORPORATION

Pursuant to the New Mexico Nonprofit Corporation Act, Sections 51-14-28.1, et seq, New Mexico Statutes Annotated, 1953 Compilation (Pock. Supp.), the undersigned set forth the following Articles of Incorporation:

- I. The name of the Corporation shall be NEW MEXICO ARCHEOLOGICAL COUNCIL, INC.
- II. The duration of the Corporation shall be perpetual, as permitted by Section 51-14-73 (2), supra.
- III. The purposes of said Corporation shall be cultural, educational and scientific as described in Section 51-14-46, supra; and more specifically, the purposes shall be to promote, encourage, and accomplish the obtaining of scientific information through anthropological and related disciplines, to make scientific information obtained through anthropological and related disciplines available to the interested public, and further, by obtaining and documenting scientific information as described, to encourage preservation and conservation of New Mexico's cultural resources, and to facilitate communication among scientists, agencies of government and industry, and to promote and encourage uniform standards of scientific research and data storage, to the end that scientific information may be more available to the interested public, and to develop, promote and encourage high ethical standards in scientific research, to the end that the interested public be best served and informed, and New Mexico's cultural heritage preserved and protected.
- IV. Membership in the Corporation shall be established in the By-Laws of the Corporation.
- V. The Initial Registered Agent is Ken Cullen, Attorney at Law, 122 Tenth Street N.W., Albuquerque, New Mexico 87102. The registered office is located at the same address.

**RECEIVED**

JUL 10 1998

N.M. ST. CORP. COMM.  
Corp./Franchise Tax Depts.

# NMAC Begins Its 25th Year!

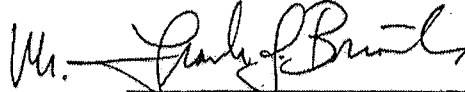
VI. The Initial Board of Directors shall consist of three members whose names and addresses are:

Mr. Frank J. Briolo  
14221 Turner Pl. N.E.  
Albuquerque, New Mexico 87123

Dr. Stanley D. Bussey  
1710 Chaparro  
Las Cruces, New Mexico 88001

Mr. Patrick H. Beckett  
2121 South Solano  
Las Cruces, New Mexico 88001

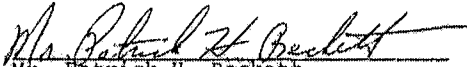
VII. The names and addresses of the Incorporators, together with their signatures appear below:



Mr. Frank J. Briolo  
14221 Turner Place N.E.  
Albuquerque, New Mexico 87123



Dr. Stanley D. Bussey  
1710 Chaparro  
Las Cruces, New Mexico 88001



Mr. Patrick H. Beckett  
2121 South Solano  
Las Cruces, New Mexico 88001

*These pages document the beginning of a remarkable history of service to the field of archaeology and the people of New Mexico..*

*How remarkable? Since I've only been around for the past six years, I hope to replay some memorable events that were chronicled over the years in the variously titled NMAC newsletters. It looks like we're getting very close to assembling a complete set.*

*Your contributions are also welcome.*

*How about rummaging around in your memory banks and memorabilia, and contributing reminiscences, anecdotes, etc. about the early days -- and later.*

*If you know any former members, why not ask them to do the same.*

*See the back page for instructions.*

*I'm sure the Executive Committee would also like to hear your ideas about how else to celebrate this passage.*

*Ed.*

## President's Report

(Continued from page 1)

preservation resulting from the class. Spending a week with my peers and getting a feel for the true value of the resource sparked a mini-conversion in my ideas about what we need to do as archaeologists to ensure we leave a lasting legacy.

As part of the damage assessment training we learned many of the things that make ARPA cases successful and many that do not. Of these, the calculation of Archaeological Value may seem like a small thing but it has far reaching ramifications for the success of ARPA and ultimately for the protection of our cultural heritage.

Archaeological Value is one factor used to determine the severity of an offense committed. If new sentencing guidelines are passed in November, Archaeological Value will have a tremendous impact on the length of sentences imposed in successfully prosecuted ARPA cases.

However, the increasing number of ARPA cases has resulted in increasing sophistication on the part of the prosecution and defense in trying the cases. There are enough cases on record now to show that inconsistent determination of Archaeological Value has the potential to cause concern.

The general consensus from the class is that archaeologists conducting damage assessment need clear, consistent guidance in making determinations of Archaeological Value.

The regulations provide some guidance but the professional community needs to develop a standard to assist archaeologists in field assessment. The most obvious source for such guidance is the Society for American Archaeology.

I strongly encourage every reader of *NewsMAC* to contact the SAA and encourage them to develop a forum for development of a policy statement that would guide archaeologists in the determination of Archaeological Value.

On another note I would like to emphasize the need for members of NMAC to participate in public education and professional opportunities.

To that end NMAC has had a request from Chris Turnbow of the Museum of Indian Arts and

**“ I strongly encourage every reader of *NewsMAC* to contact the SAA and encourage them to develop a forum for development of a policy statement that would guide archaeologists in the determination of Archaeological Value [for ARPA cases]. ”**

Culture to participate in the Sun Mountain Gathering on July 13<sup>th</sup> and 14<sup>th</sup>, 2002 [see Chris's Lab Report on page 17]. It is a cultural event that promises to be like no other. Chris has many activities planned with the consequence that he needs volunteers, from knappers to greeters. He can be contacted at 505-476-1252. Also, the Pecos Conference is earlier this year (August 8<sup>th</sup> to the 11<sup>th</sup>,

2002). It is the 75<sup>th</sup> Anniversary and something we should all support. Judy Reed has asked if NMAC members would like to volunteer to help. If you have questions about volunteering please call Judy Reed at 505-757-6414, x2.

[via nmac-l] 20-May-02

Heard today that Elmo Baca has resigned as NM SHPO and that Jan Biella will be Acting SHPO. Not unexpected I guess for a political appointee in a state where, with a change in administration (expected next year), such appointees are often asked to resign anyway. I'm sure Elmo has another neat career opportunity lined up. He had only been there for about a year and a half (he replaced Lynne Sebastian, who was fired, after the SHPO before her resigned after a brief tenure, following the one before him who only stayed a couple of years). I'm sure it's hard on the staff, who were probably just beginning to feel like they had a bit of stability. I guess it may be awhile before the position gets filled, given the political landscape. The main effect on us will probably be that the office will be short-handed again for awhile. I only met Elmo a couple of times and don't know much about his contributions, but he was the prime mover in getting a volunteer Site Steward program established in New Mexico (just getting off the ground now). Everyone's hopeful that it will evolve into a program as vibrant and successful as the AZ Site Stewards. [See news report about Baca's resignation on page 21.]

*[The last sentence of Mike Bremer's President's Report in the NewsMAC 2002(2) issue should have been clipped and should have read as follows. Ed.]*

We wish Lynne the greatest of success and we trust her to carry concerns of regional councils such as NMAC to the highest levels in the Society – congratulations Lynne.





## Current Research

### **Gobernador Polychrome Presents Intriguing Puzzle**

Carol Cohea

*The (Farmington) Daily Times* 14-May-02

Gobernador polychrome is a clay pottery which when fired appears distinctly yellow. On this yellow area, the potter painted red and black patterns, generally above the shoulder of the bowl. It's named for the Gobernador area of the Dinétah, east of Bloomfield where it is most often found. But pottery shards have also been found in the area of Chaco Canyon and Big Bead Mesa at Mt. Taylor.

Archaeological literature on the pottery indicates it is not found in many places. For the most part, there has not been a lot of interest in pursuing the reason it's not widely distributed.

Two archaeologists, however, have found the puzzle intriguing and exciting.

"If we can answer those questions we will be able to shed light on the bigger picture, for example, how the pottery functioned and the role it played in early Navajo society. We will be able to put it into its cultural context," explained Kristin Langenfeld, of Farmington, an archaeologist for the Navajo Nation Archaeology Department.

Langenfeld and Paul Nugent, also an archaeologist and student ceramicist at the University of New Mexico, are pursuing the puzzle. That pursuit has led to the inspection of several major Navajo pottery collections not often available for study.

Those include collections from the Keur Collection at the Museum of Northern Arizona in Flagstaff, the National Park Service Chaco

Center at UNM and the Laboratory of Anthropology Museum of New Mexico in Santa Fe.

Langenfeld and Nugent began their study about two years ago as an outgrowth of research he was doing on ceramics at UNM and she was doing on ceramics at Navajo sites.

What is known is that Gobernador polychrome dates from AD 1625 to 1750 and is generally found with culinary utility wares, including basic cooking or storage pots called gray ware. The polychrome is formed into bowls compared to jar shapes and used for serving compared to storage.

To put it in modern day perspective, Langenfeld said, the gray ware or utility pots are like the every day dinnerware. The decorated polychrome is the good china.

"It seems it may have had some every day uses but only for serving, and for special purposes," she said.

It was so important that if the polychrome bowls started to crack, they were carefully fixed with repair holes and rawhide.

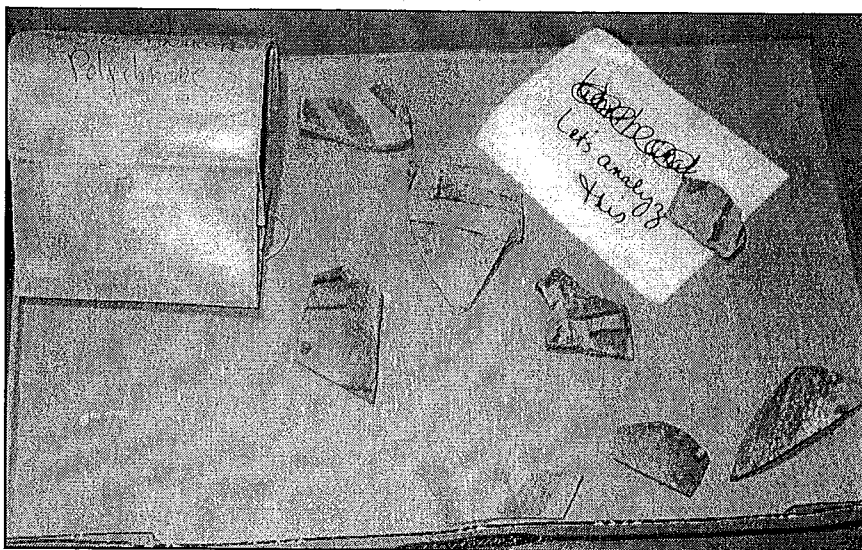
Nugent does the stylistic analysis, looking at the decorations on the pottery, the elements, motifs, and how the motifs were combined into panels.

"Gobernador polychrome pottery traditionally has panels, divided with lines. The area between the rim of the pot and its shoulder serves as the potters canvas where red designs and black lines are painted on the pot," Nugent said.

"It looks like the potter hunted for clay that would come out yellow when it was fired. Langenfeld does the technological work. I do the binocular, microscopic work. I get to make fresh

breaks on the shard to get a good look at the core. I record the attributes of the paste, temper, texture and any inclusions in the piece," she said.

A research grant through the Bureau of Land Management allows Nugent and



## Current Research

Langenfeld to contract out the work for chemical analysis of the clay.

There are some puzzling aspects about the polychrome.

"It appears full-blown in that there was no transition pottery. No in-between pottery. There was gray ware. Then all of a sudden polychrome with it," Langenfeld said.

It's found on Navajo sites but not on non-Navajo sites, she said.

The pottery bears a striking resemblance to Puebloan pottery made at or about the same time, but it doesn't appear to have been a trade item. It is not found at Zuni or Hopi sites or among the Pueblos along the Rio Grande, she said.

In addition, it comprises only a small percentage of all the Navajo pottery, an average of only about 3 percent, Nugent said.

"Who made the pottery? Did the Navajos or the Puebloan people?" Langenfeld asked. "What did it mean to the people who made it? The designs are pretty, but when you put them on pottery they have a meaning, which helps us understand the culture of the people."

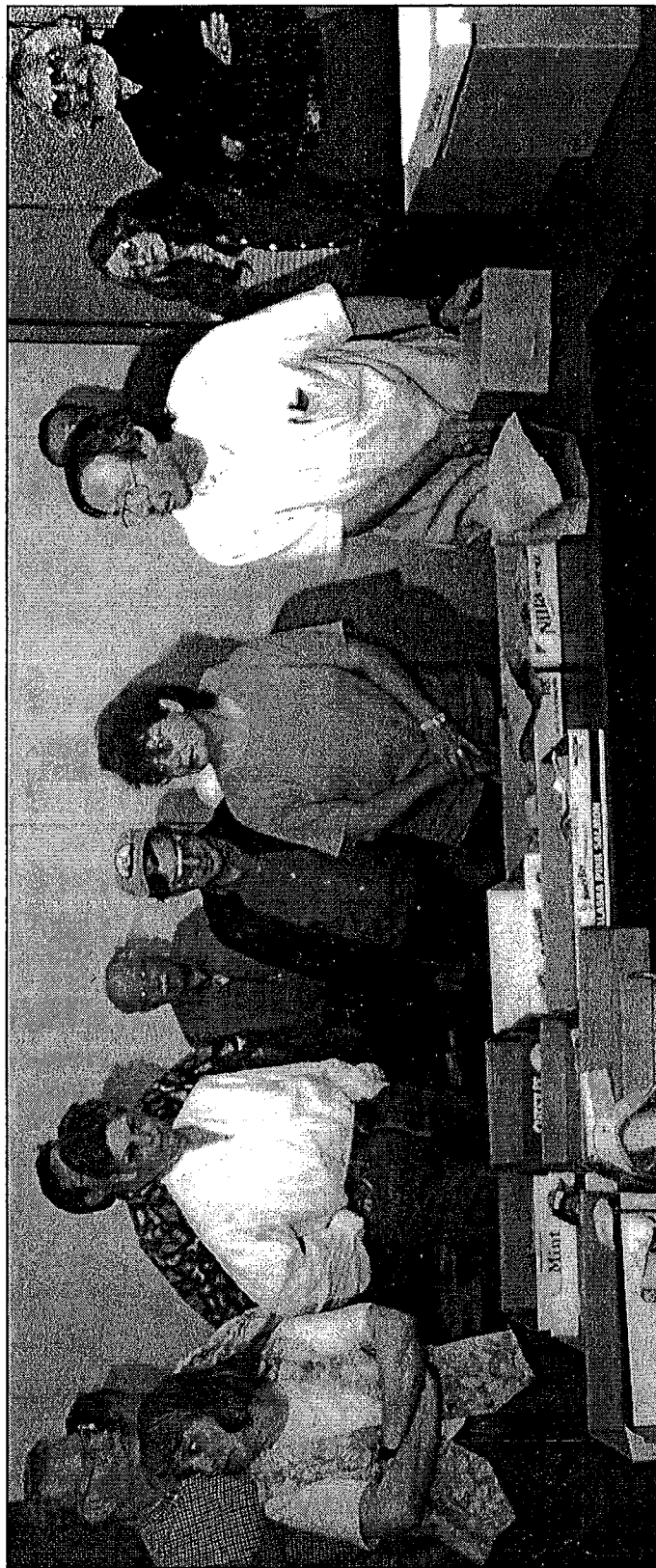
During AD 1625 to 1750, Langenfeld said, the Southwest was in the middle of a cultural upheaval.

"Cultures were in contact and in conflict. There was tremendous upheaval. You have the Spanish presence in New Spain. Many native people were being displaced. You have the Pueblo Revolt of the 1680s and the Spanish Reconquest in the 1690s," she said.

"If we can answer some of the questions, we can begin to understand how the Navajo came to be the people who they are today," she said.

### ***Keur Collection of Gobernador Polychrome and ARMS Map Service Featured at NMAC Meeting on Apr. 20***

Tim Seaman demonstrated the ARMS Map Service (AMS) online during the NMAC Membership meeting on April 20. AMS is a new application that allows users to access site, survey and state/natl. register property data registered against a backdrop of USGS 7.5' topographic maps. AMS was developed with support from the NM State Highway and Transportation Department and the Public Service



NMAC members getting ready to pounce on the Keur Collection, listening to Paul Nugent (out of frame) describe what's before them. Action during the pounce is shown on the next page. Photos by Ed.

## Current Research

Company of NM. This GIS application runs over the web and requires only a simple web browser running on a standard PC, UNIX workstation, or Mac. Both maps and attribute data may be printed or saved to local files for reporting purposes.

*[See ARMS Report on page 6 for more about the map server. Ed.]*

As evidenced by the accompanying photos, there was also keen interest in the Keur collection from Big Bead Mesa. Paul Nugent brought the collection for hands-on review and gave an introductory slide talk. [Paul and Kristin Langenfeld are winners of a 2002 NMAC grant for their work with the collection – see Grants Report on page 20.]

### **Re: Big Bead t-r dates**

Ron townner <rtowner@LTRR.ARIZONA.EDU>  
[via nmac-l] 25-Apr-02

For everyone at the NMAC meeting who asked about the dates from Big Bead Mesa, here's the story.

The original 23 samples were collected by Dorothy Keur in 1939 and dated by E.T. Hall and W.S. Stallings (see Smiley 1951:26 [Tree-ring Bulletin 17(4)].

The samples were re-analyzed by the LTRR in 1966 and the new symbols appended. It's a long story, but if you ever see dates with +x or +/- symbols, they are not current and have been reanalyzed. The dates probably haven't changed, just the notion of cutting vs. non-cutting dates. So -- the dates and symbols are:

#### **Group A**

- Hogan 1 Sample BBM-1 Pinyon 1681p-1777+G inc
- Hogan 2 Sample BBM-2 Pinyon 1703p-1781rG comp
- Leanto 1 Sample BBM-3 Pinyon 1615p-1773+vv inc

#### **Group B**

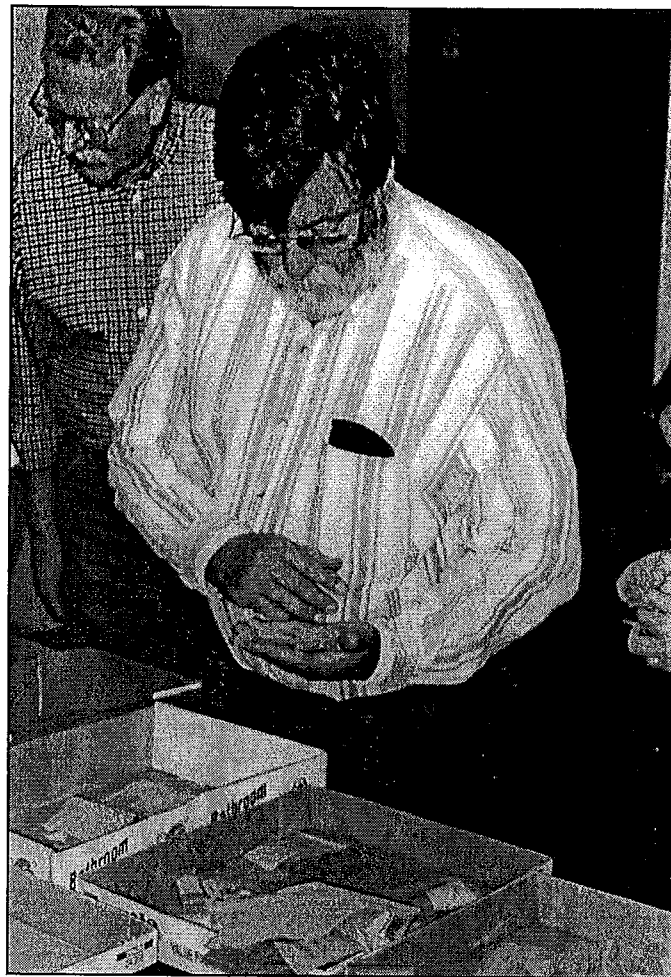
- Hogan 1 Sample BBM-4 Pinyon 1701p-1775+G inc

#### **Group C**

- Hogan 3 Sample BBM-5 Pinyon 1654p-1780+G inc

#### **Group D**

- Room 1 Sample BBM-6 Ponderosa 1603-



## Current Research

1734vv inc

- Hogan 1 Sample BBM-7 Pinyon 1609p-1742++vv

### Group E

- Hogan 1 Sample BBM-8 Pinyon 1690p-1765+vv inc
- Hogan 17 Sample BBM-9 Pinyon 1693-1768vv inc
- Hogan 20 Sample BBM-10 Pinyon 1676-1784r inc

### Group F

- Hogan 1 Sample BBM-12-3 Pinyon 1569-1622vv inc
- Hogan 1b Sample BBM 12-2 Pinyon 1626p-1765+vv inc
- Hogan 1a Sample BBM-12 Pinyon 1640-1768v inc
- Hogan 2 Sample BBM-13 Pinyon 1651p-1771r inc

### Group J

- Sample BBM-14 Pinyon 1673-1791rG inc
- Hogan 6 Sample BBM-15 Pinyon 1630p-1746vv inc
- Hogan 8 Sample BBM-16 Pinyon 1630p-1785vv inc
- Hogan 10 Sample BBM-17 Pinyon 1602p-1722++vv inc
- Hogan 13 Sample BBM-18 Pinyon 1452p-1676vv inc
- Hogan (?) Sample BBM-25 Pinyon 1608+p-1723vv Hogan 3 inc

### Group Y

- Hogan 2 Sample BBM-19 Pinyon 1609p-1725vv inc
- Hogan 3 Sample BBM-20 Pinyon 1589p-1688vv inc
- Hogan 4 Sample BBM-21 Pinyon 1686p-1784rG inc

In 1993, I collected samples from all the door lintels in the Great Wall (BBM 25-30), but none dated -- three junipers, a pinyon, and a ponderosa. We did confirm the provenience and dating of BBM6 and 7 from Group D.

Basically, the cutting dates suggest an occupation from about 1768 to 1791. Given the size of the site, the small number of samples, and lack of date clustering, I'd guess that the site was indeed occupied in the late 1700s, but earlier or later oc-

cupations are certainly possible.

## Magnetometer Studies

Meade Kemrer < mkemrer@zianet.com >

Lee Webb and I placed several of our magnetometer studies in a Web page at < <http://www.zianet.com/mkemrer> >.

Topics include: magnetometry principles, modification of instrument and survey methods designed to detect archaeological phenomena, finding the Fort Fillmore buried cemetery adobe wall, mapping buried pueblo architecture, and mapping the contents of the Fort Bowie cemetery.

Other reports will be added over the few next months.

We recommend that you use MS Internet Explorer or Netscape 6.2 browsers.

## Maize Cobs Offered

Karen R. Adams < kadams@crowcanyon.org >  
[via nmac-l] 23-May-02

For years I have curated labeled indigenous varieties of maize cobs from Native Seeds/SEARCH (NS/S), based in Tucson. NS/S curators were kind enough to save the cobs for me after they removed kernels for sale or curation. These cobs are basically SW US and northern Mexico varieties, inventoried in the attached file [contact me if you'd like a copy -- Ed.].

I have, over the years, shared some of these cobs with some of you. The chapalote collection has many full ears (a bit bug eaten), and is the oldest, most widespread variety, as far as we know. This is a very large collection of whole cobs, and I am now condensing and sorting a decade worth of projects at Crow Canyon, and feel it is time to offer these to the entire group.

I know Greg Wood is interested in doing a pottery firing composed entirely of maize cobs, and this would make one XYZ of a fire for that purpose. However, if any of you want any of these for your collections, as comparative materials, for describing, for burning experiments, etc., etc.,

I will have volunteer help this summer (I hope!), and we could box them up and send them to you. It is a very nice collection. You would need to reimburse Crow Canyon for the postage, but corn cobs are fairly light, after all. So, please let your druthers be known. If no one wants them, we'll have a lovely fire after the rains come. Please share this with colleagues in the SW I may have

## Current Research

missed. Hope all is well with each of you, Karen.

Karen R. Adams, PhD  
Environmental Archaeologist  
Crow Canyon Archaeological Center  
23390 County Rd. K  
Cortez, CO 81321  
Phone: 970-565-8975, Ext. 126.  
FAX: 970-565-4859

### ***Compositional Studies of Taos Ceramics***

Severin Fowles <fowless@umich.edu>, David V. Hill, and Sam Duwe  
[Excerpted with permission from the Web site at [www-personal.umich.edu/~fowless/ceramics.html](http://www-personal.umich.edu/~fowless/ceramics.html). Also see [www-personal.umich.edu/~fowless/index.html](http://www-personal.umich.edu/~fowless/index.html). Ed.]

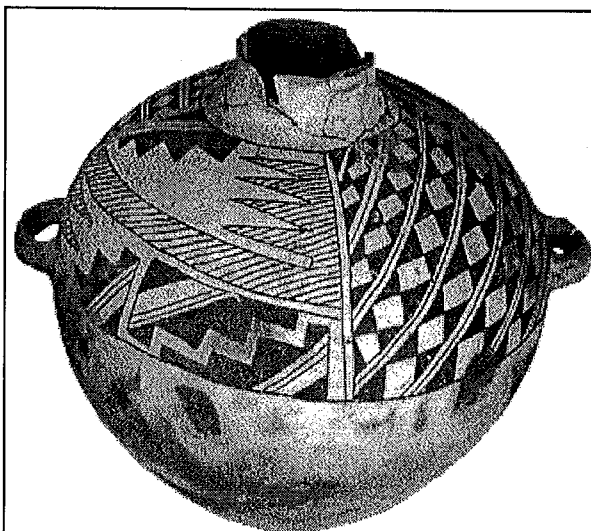
The Rio Grande del Ranchos Valley is located in north central New Mexico, within an area that has traditionally been occupied by the northern Tiwa-speaking Pueblo communities, Taos and Picuris. Between AD 1050 and 1325 the valley was a center of occupation in the region, first by dispersed communities of pit house and unit pueblo dwellers (AD 1050-1250) and then by the large village community at Pot Creek Pueblo (AD 1250-1325). During that time period, a variety of Black-on-white ceramics were introduced into the region, either through local production or through importation. Traditionally, these ceramics have been assigned broad typological labels based upon two principle variables: (1) the type of paint employed (mineral- vs. vegetable-based) and (2) the presumed origin of their production (local vs. non-local).

The ongoing goal of our study has been to refine current knowledge of the variety of production locales for the black-on-white ceramics encountered at prehistoric sites in the Rio Grande del Ranchos Valley. As in most exercises in source-

ing, "Where did these pots come from?" is the simple question that has provided the impetus for our current work. However, as we discuss in the conclusion, the study has also generated a variety of data that speak to larger questions of culture historical importance. Issues as diverse as trade, immigration, as well as the very utility of our basic ceramic typologies all depend upon an ability to distinguish production locales at least at a general level. Researchers working within the northern Rio Grande region on Developmental and Coalition Period should therefore find this study of relevance to their own studies.

An important secondary goal, however, is methodological in nature and will be of interest to those grappling with similar problems of ceramic sourcing in regions further afield. While the techniques used in this study – INAA and petrographic analysis – are now relatively standard techniques in the archaeological toolkit, it is less common for them to be combined in a single project. As we hope to impress upon the reader, the advantages of using both techniques in concert with one another far surpasses the utility of either in isolation.

Our study of Taos black-on-white ceramics is ongoing, however we have already learned enough to offer some significant clarifications to the local typological system. By approaching the ceramics from a compositional perspective and searching for groupings that are meaningful at both elemental and mineralogical levels, we have avoided many of the problems inherent to the use of decorative style in the local



A locally produced Taos B/w vessel excavated in the Rio Grande del Ranchos Valley.

typology. As we have discovered, the local prehistoric potters of the Rio Grande del Ranchos Valley, especially those after AD 1200, were stylistically eclectic and experimented with a range of paint, slip, and design strategies despite their use of a relatively discreet number of natural clay sources. While this observation raises a number of interesting questions related to prehistoric immigration and ethnicity in the region, our current concern is



## Current Research

simply with documenting the necessity of a compositional approach to prehistoric Taos ceramics.

*[Fowles reports that both Web sites are works in process and that he expects to "a decent amount of new data" when the field season is over. Ed.]*

### Request for Assistance NM Fieldwork During Jan 2003

Charles Kaufmann

<charles.kaufmann@centralchristian.edu>

[via the [www.swanet.org](http://www.swanet.org) newsletter & nmac-l]

I am planning a trip for an introductory field anthropology class to New Mexico in January, 2003, with about a dozen college students from Central Christian College in McPherson, KS. I am very interested in two things: (1) if there will be any digs (especially native American sites) in which barely-initiated students could participate (or at least observe archaeology in practice) for a few days; and (2), what are the must-see sites in New Mexico related to the cultures of ancient peoples. Colorado and Arizona, and even Mexico could be included in our itinerary, but I want to avoid excessive miles, and assume that if I head a ways south, the weather in January may be a bit more hospitable. Charles Kaufmann, Central Christian College of Kansas; [ckaufmann@centralchristian.edu](mailto:ckaufmann@centralchristian.edu); 620.241.0723, ext. 315.



## Digital Bridges

Phil Metzger <[pam5@lehigh.edu](mailto:pam5@lehigh.edu)>

Curator of Special Collections

Linderman Library, Lehigh University

[via ExLibris-l]

For the past two years and more we've been working on a digital collection of our holdings in 19th century bridge construction, with the great help of an LSCA (Library Services and Construction Act) grant.

Its purpose is to provide a wide range of material from our collection to aid in teaching about 19th century technology, and also to give restorers of historic structures access to the 19th century

technical material.

The collection presently contains 30 volumes, which we hope to continue to add to. We have tried to provide a book-like functionality on the site (and this has taught us that it's very difficult to do on a computer what an actual book does so easily). Certain aspects, such as the glossaries, and links to other web sites, are not fully developed, but if we wait until everything is done, we'll never make it public.

So I'd like to invite interested [parties] to take a look at the site and send any comments you care to make.

The site is at <[bridges.lib.lehigh.edu](http://bridges.lib.lehigh.edu)> and comments should be emailed to <[inspc@lehigh.edu](mailto:inspc@lehigh.edu)>. Thanks very much. Phil Metzger.

### Site Overview

The Digital Bridges Web site consists of a collection thirty representative 19th century American bridge engineering monographs, manuals, and documents from the Lehigh University Libraries' Special Collections. Many of these items are relatively rare and in some cases quite fragile.

With the growing interest in material culture, technology studies, the history of engineering practices, and the renovation and restoration of historical structures, this site is designed to provide a rich, interactive research tool for students, historians, and engineering professionals.

The source documents have been scanned, converted to text, and partially-corrected to make all significant terms, personal, and proper names retrievable through the site search engine. In addition, all items in the collection have been structured for browsing in the manner of a book, with organization units such as chapters and subchapters randomly viewable, and with page-to-page forward and back links.

### Society for Archaeological Sciences



The Society for Archaeological Sciences (S.A.S.) was founded to establish a forum for communication among scholars applying methods from the physical sciences to archaeology and to aid the broader archaeological community in assessing the potentials and problems of those methods.

S.A.S. Publications include:

- *The Society for Archaeological Sciences Bulletin*

## Current Research

tin - full text is available online at < [www.socarchsci.org/sasb.htm](http://www.socarchsci.org/sasb.htm) > for issues from 1996 to 2001.

- *The Journal of Archaeological Science* - full text of recent articles is available online via IDEAL-First at < [www.academicpress.com/jas](http://www.academicpress.com/jas) >.
- *Advances in Archaeological and Museum Science*.
- *Archaeometry* - with links to related information located at < [www.rlaha.ox.ac.uk/archy/archindx.html](http://www.rlaha.ox.ac.uk/archy/archindx.html) >.

The S.A.S. also regularly sponsors conferences and conference sessions that encourage data-sharing among archaeological scientists.

Established in 1977 with 100 charter members, the S.A.S. currently has over 300 members, who work in academic settings, government offices, and private firms. It represents an international cross-section of the disciplines with input to archaeological science, including anthropology, biology, chemistry, classical studies, geography, geology, and physics.

At the S.A.S. Web site you'll find links to:

- S.A.S. Publications.
- Archaeometric facilities and other resources.
- On-line scientific and archaeological publications.
- Other on-line professional societies.
- Agencies funding archaeometric research.
- The International Symposium on Archaeometry.

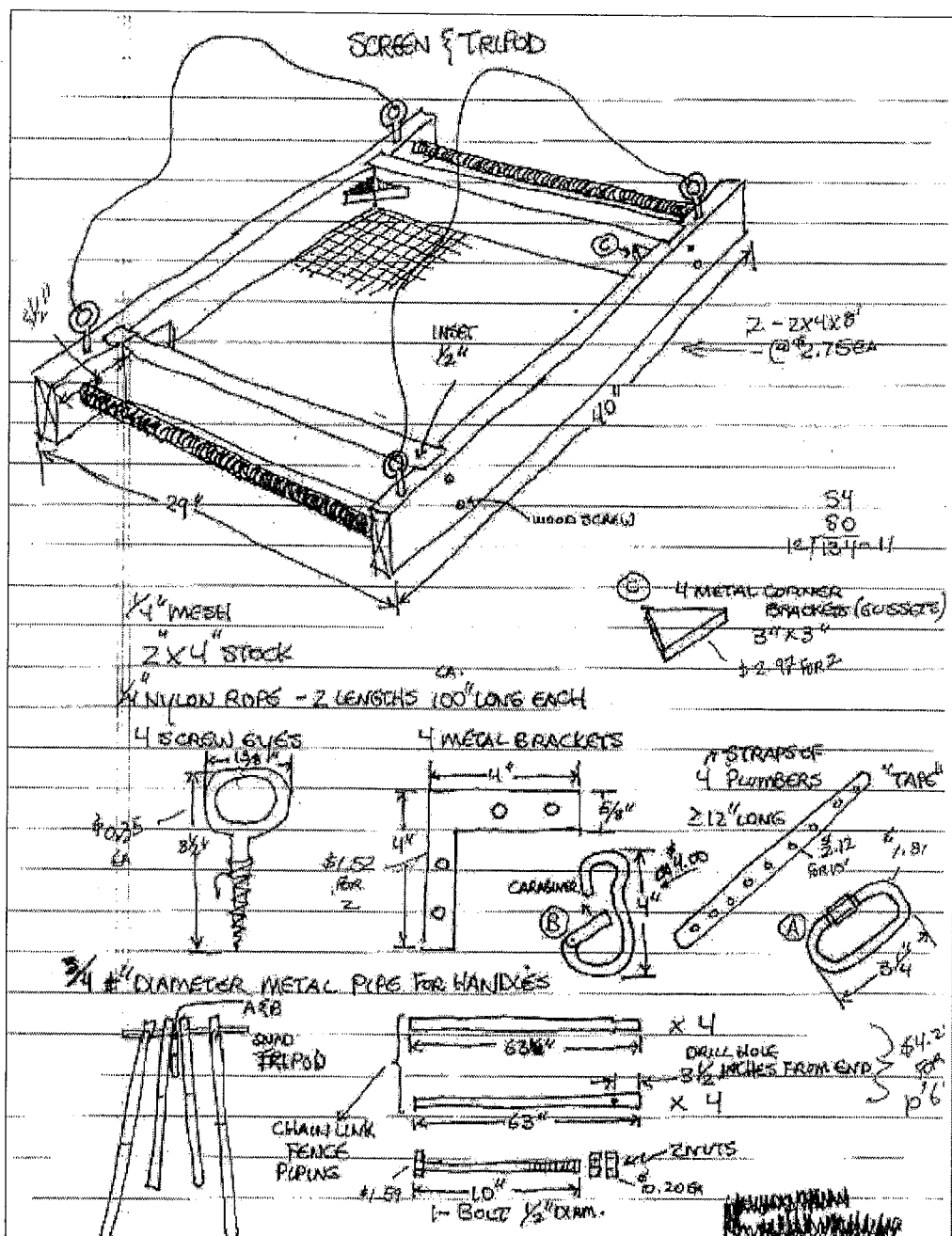
- Other extensive lists of links.

## Field Stuff

Brad Vierra < [bvierra@lanl.gov](mailto:bvierra@lanl.gov) >  
[via nmac-l] 19-Apr-02

Forestry Suppliers no longer carries photo boards with letters. Does anybody know where I can purchase these?

Also, Robert DelloRusso gave me a great detailed diagram for building tripod screens. It is [reproduced below] for anyone who might be interested. Thanks, Brad; (505) 665-8014.







## Issues & Viewpoints

*[The following letter responds to Stephanie M. Whittlesey's review of The Chaco Meridian: Centers of Political Power in the Ancient Southwest, by Stephen H. Lekson. The review was originally printed in American Anthropologist, vol. 102, issue 4 (Dec 2000) and reprinted in NewsMAC 2002(2), pp. 13-19. Ed.]*

### Letter to the Editor **Reply to Whittlesey**

David R. Wilcox <DWilcox@MNA.mus.az.us >  
Senior Curator of Anthropology,  
Museum of Northern Arizona

Stephanie Whittlesey is confused. In the course of a glowing review of Stephen Lekson's Chaco Meridian book (*NewsMAC*, April 2002) she chose to denigrate as "bad archaeology" the work of two other archaeologists, one of whom was me! As a loyal member of NMAC, I doubt the Council wants to be a party to falsehoods, and thus I ask that this letter be printed in the next Newsletter.

Envisioning "the forward evolution of archaeological science," Whittlesey would exclude the "hypothetico-deductive mumbo-jumbo." This should be our first clue that we should ask her the following question: what is it about the scientific method that you do not understand? I have long argued that to be a science, archaeology must stand on its own two feet and develop "independent archaeological theory" that builds theory that is testable in observations of the archaeological record.

Any claim to dependency on ethnographic analogy – or any other analogy – to make behavioral inferences reduces archaeology to a "name it and nail it" exercise, a game of pin-the-tail-on-the-donkey. How, however, are we to create our own theory, as other historical sciences like geology have?

Relationships are the key, relationships that we can observe in the archaeological record. Relationships are data and the logic of relations provides the calculus to construct theory that generates predictions about the archaeological record. Other sciences can provide useful ideas (including ethnography); the crucial point is that they be translated into the language of archaeology and assist us in constructing concepts testable using observa-

tions of the archaeological record.

A collaboration between me, Scott Wood – the Tonto Forest Archaeologist – and Jerry Robertson, an avocational archaeologist and a former captain in the 101st Airborne in Vietnam, on Perry Mesa, Arizona, provided an excellent opportunity to pursue this approach. Scott and others had well documented the fourteenth-century settlement system of small pueblos, many of which were 80-150 rooms in size. On a field trip Jerry and I noticed on Scott's handout-map that the way the pueblos were deployed around the edges of the 75 square-mile area of Perry Mesa could have served them well as a way to protect one another's backs in the event of an attack. Put more abstractly, the relational pattern of pueblo distribution could be explained by postulating a process of warfare and defense.

Soon thereafter Scott, Jerry and I decided to work together on a further study of Perry Mesa. Jerry brought to that effort two ideas that greatly enhanced the theoretical apparatus. He inferred, first, that the Perry Mesans were the aggressors, and that their settlement pattern was a response to a fear of retaliation. Secondly, he inferred that the structure of the defensive system was like that of a castle, the 1000 foot cliffs of Perry Mesa being the walls and the pueblos the strong points. Thus our earlier insight, that they were deployed to protect one another's backs, was now logically entailed within a more powerful theory. Its power lay in the fact that many implications could be derived from it, leading us to make many new observations of the archaeological record to test the predictions.

One of those implications was that for such a system of defense to work, the occupants of each pueblo would have to have had early warning about the approach of an enemy, and the pathway of that approach.

Signaling using smoke (by day) or fire (by night) was an obvious technological solution to this problem. We predicted that such signaling arrangements should be present in the Perry Mesa landscape, and that their relational structure would have served the purpose of early warning. As a measure of connectivity in such a network we required that one have line-of-sight between signaling stations, and that physical evidence indicate the presence of such sites (walled enclosures, habitations, etc.). During our first three days of study, we did find a site that satisfied these criteria, and we did (and do) regard that as a confirmation

of our prediction. Since then we have shown that an elegant network of line-of-sight relationships exists that would serve to integrate the whole Perry Mesa settlement system with early warning of impending attack. Supposing, then, that the occupants of the mesa could be mobilized at any given point along its edge, Jerry argues that even if 1000 men were sent against them, they could have withstood that attack.

We did not, as Whittlesey alleges, mix up the search for independent data with the observations that had led to the formulation of our hypotheses and their linkage into a powerful theory. Features of the archaeological record that we predicted should be there and then were found we do regard – properly – as a confirmation of our predictions. The theory implies that much else should also be true, issues that we are pursuing in what I call the “Hilltop Survey,” a report of which was given at the Southwest Symposium last January in Tucson. We invite all readers of *NewsMAC* to read our publications on this work and to decide for themselves whether it is an example of good archaeology or not. Thanks.

### **Papers on the Perry Mesa Work:**

Wilcox, David R., Gerald Robertson, Jr., and J. Scott Wood

- 1999 “Perry Mesa: Arizona’s First Gated Community.” *Plateau Journal* (Summer, 1999).
- 2001a “Organized for War: The Perry Mesa Settlement System and Its Central Arizona Neighbors.” In *Deadly Landscapes: Case Studies in Prehistoric Southwestern Warfare*, edited by Glen E. Rice and Steven A. LeBlanc, pp. 141-194. University of Utah Press, Salt Lake City.
- 2001b “Antecedents to Perry Mesa: Early Pueblo III Defensive Refuge Systems in West Central Arizona.” In *Deadly Landscapes: Case Studies in Prehistoric Southwestern Warfare*, edited by Glen E. Rice and Steven A. LeBlanc, pp. 109-140. University of Utah Press, Salt Lake City.



### **ARMS Map Server**

Do you have questions about the new ARMS Map Server? Wondering what GIS really is and how it works at ARMS? Do you use GPS and GIS and want to submit your site and survey locations to ARMS electronically? Still having difficulties logging on to the NMCRIS database? Do you simply need someone to help you navigate through the online ARMS applications?

The Archaeological Records Management Section (ARMS) is offering personalized training. If your organization is located in the Santa Fe/Albuquerque area, ARMS will provide instruction tailored for the specific needs of your organization. We can provide in-house assistance for all ARMS applications: from installation and basic navigation to registration and queries.

These services are currently available at the ARMS office as well, simply call and make an appointment for training.

If you are not in the Santa Fe/Albuquerque area, call us and we will work with you to find an appropriate avenue for instruction. We will be attending BLM permittee meetings around the state over the next year and we may be able to visit your shop for training and/or installation help.

NMCRIS is migrating most of its query functions to a more intuitive map-based interface and we want to ensure that users understand it and reap the full benefit. In addition, training will help

(Continued on page 16)

Wilcox, David R., Judith Rowe Taylor, Joseph Vogel, and J. Scott Wood

- 2002 “Delineating Hilltop Settlement Systems in West-Central Arizona, A. D. 1100-1400.” Revised paper prepared for the advanced seminar *Enduring Borderlands Traditions: Trincheras Sites in Time, Space, and Society*, organized by Suzanne K. Fish, Paul R. Fish, and Elisa Villalpando, held at the Amerind Foundation, Dragoon, January 8-10, 2002.

## ARMS Report

qualify you for ARMS fee discounts in the near future.

For scheduling, please contact:

Karyn de Dufour

Archeological Records Management Section  
NM State Historic Preservation Division

< kdedufour@oca.state.nm.us >

(505) 476-1281; (505) 476-1320 (fax).

### ***Digitize at Home!***

[via nmac-l] 19-Apr-02

I have a little file for those of you use ArcView GIS 3.2 to record your survey results and print maps. Just extract the contents of a .ZIP file into a working folder and start up the .APR file. The project sets up the environment for digitizing site and survey boundaries in a format that you can immediately e-mail to ARMS. It also has a few custom tools in it that will save you time (e.g., the "Hot-Dog Tool" digitizes linear objects as buffered lines.) and it automatically names your .SHP files for each NMCRIS activity number. All you need are the appropriate topo maps for background (NAD27) and you are good to go. When ARMS gets the files we'll be able to update NMCRIS quick and easy.

This is our first version and we are looking for archeologists to test it out while we develop the documentation. Call me (476-1277) or Neil Berry (476-1285) at ARMS if you have questions.

### ***ARMS Regulation Amendment***

The final schedule for amending the ARMS Regulation (4.51.5 NMAC) is as follows:

- 14-Jun-02 Hearing Notice published in Albuquerque and Santa Fe Newspapers
- 15-Jun-02 Hearing Notice published in NM Register
- 16-Jul-02 Hearing, MIAC Auditorium, 10AM
- 23-Jul-02 Hearing transcripts available
- 30-Jul-02 Last day for written testimony
- 19-Sep-02 MNM Board of Regents review Hearing Officer's Report
- 15-Oct-02 If approved by MNM BOR, Amendment published in NM Register
- 1-Dec-02 Amendment effective date
- 1-Jan-03 First billing under amended fee schedule.

An official copy of the notice follows below. If anyone wants a copy of the proposed amendment of 4.51.5 NMAC, please contact me and I will get one to you by email, fax, or regular mail. Tim Seaman, ARMS Program Manager, (505) 476-1277, fax (505) 476-1320; < seaman@arms.state.nm.us >.

### ***Notice of Hearing***

Notice is hereby Given of a PUBLIC HEARING OF THE BOARD OF REGENTS OF THE MUSEUM OF NEW MEXICO to be held at **10:00 AM, 16 July 2002**, in the auditorium of the Museum of Indian Arts and Culture, 710 Camino Lejo, Santa Fe, New Mexico. This hearing is scheduled to amend, re-number, and reformat into the current NMAC requirements, 4.51.5 NMAC (formerly 4 NMAC 51.3.2): MUSEUM OF NEW MEXICO ARCHAEOLOGICAL REPOSITORY AND CULTURAL RESOURCE INFORMATION SYSTEM. The proposed amendment 1) increases certain fees to support additional ARMS services and make assessments more equitable; 2) requires participating government entities to provide equitable support to ARMS; and 3) modifies the billing system to reduce the number and size of delinquent accounts.

Copies of the proposed regulation may be obtained after 15 June 2002 by contacting the Hearing Officer by mail (ARMS Hearing Officer, c/o Tim Seaman, NM Historic Preservation Division, 228 East Palace Avenue, Room #320, Santa Fe, NM 87501), phone (505-476-1277), or e-mail < seaman@arms.state.nm.us >. Comments may be provided by statement in person at the hearing, submitted in writing at the hearing, or submitted to the hearing officer in writing prior to the hearing. Hearing transcripts shall be made available on 23 July 2002 and the Hearing Officer will accept written comments through 30 July 2002. The Board of Regents of the Museum of New Mexico will consider the Hearing Officer's Report on 19 September 2002 in Santa Fe, NM. If adopted, amendments to 4.51.5 NMAC will be published in the NM Register on 15 October 2002 and become effective on 1 December 2002.

If you are an individual with a disability who is in need of a reader, amplifier, qualified sign language interpreter, or any other form of auxiliary aid or service to attend or participate in the hearing, please contact the Hearing Officer at the address/phone/email listed above.



## Lab Report

Chris Turnbow

### ***In Search of the Seventh Parrot (Turkey?) Project***

In the spring, the Laboratory of Anthropology teamed with the Gila National Forest to undertake stabilization and archaeological research on four Classic Mimbres ruins damaged by looters during the winter of 2000. The sites include Diamond Creek B and C, Gatton Park, and East Fork, all in the upper Gila River drainage. Although the thieves were caught and convicted of ARAP violations for the East Fork site damage, they are fighting their sentences of a year and day in jail and fines of \$19,600 each.

The project is called "In Search of the Seventh Parrot" because of a pot found at a looter's house.

The Mimbres Black-on-white, Style III bowl exhibits six birds painted around the rim. A large sherd missing along the rim probably contains the figure of another bird. While the looter denied recovering the vessel from Federal land, if the sherd could be found on one of the Federal sites, the looter could be charged with another ARPA violation.

The Forest Service and the Lab would like to thank a very dedicated and hard working volunteer force from the Laboratory of Anthropology, Texas A&M University, Grant County Archaeological Society, Silver City High School, and other places. During our adventures, the Forest Service transported our gear in to the Gila and Leopold Wilderness areas by mules and we had to cross the river 14 times to get to the East Fork site! All four of the sites were heavily potted even

though they were deep within the wilderness, but our research succeeded in delineating numerous intact room floors and other features in the pot-hole profiles.

Funding has been secured for analysis, lab samples, a small museum exhibit, website, and a final report. KUNM radio will also be doing a feature on the work. Processing of the recovered cultural materials is currently underway at the Lab. When the project is completed in two years, we expect to have involved hundreds of volunteers and exposed thousands of people to the preservation message.

### ***Spearthrower Research***

In case you missed it, the current issue of *El Palacio* had an article by Ronald Fields, a Lab Research Associate, on his research on three spearthrowers from the MIAC collections. The atlatls were recovered from Mera's expeditions to the Guadalupe

Mountains in southeastern New Mexico during the 1930s. The specimens were recovered from Little Pine Cave 1, Little Pine Cave 2, and Rock Fall Cave. Although the fingerloops are missing, the Little Pine Cave 1 atlatl is remarkably well preserved. The Museum of New Mexico's Conservation Department has aided the investigation by applying Fourier Transform Infra-red (FTIR) spectroscope, Ultraviolet and Near-Infrared (Bands 1, 2, and 3), and polarized light microscopic analyses to evaluate residue and paint compounds and to identify possible fingerloop and weight attachment points. Thanks to NMAC's generosity, Fields recently received a \$600 grant to ASM date at least one of the specimens. The artifacts and a replica of the complete Little Pine Cave 1 specimen will be on display during the Pecos Con-

## **Museum of Indian Arts and Culture/ Laboratory of Anthropology**

# **First Annual Sun Mountain Gathering**

**Weekend of July 13 - 14, 2002**

**Packed with educational activities for the public. Featuring Native dancers and musicians on the new Milner Plaza, archaeology talks and exhibits, demonstrations of traditional native crafts and games, video screenings, and lots of hands-on activities for kids of all ages.**

**There will even be a mock archaeological excavation for young people.**

**Volunteers Welcome!**

## Lab Report

ference reception at the Museum on August 8.

### ***New Mexico BLM Internship***

In May, Nick Pino was hired as the New Mexico BLM intern to the Museum. Nick recently graduated from UNM and will be attending graduate school in England this fall but we are lucky to have him working on the BLM collections through the summer months. Nick's primary responsibility will be to develop a Web-based catalog of BLM collections available for research at the Museum. MIAC/Lab intends to hire another BLM intern in the fall. If you are an anthropology/archaeology graduate student and interested in museum research collections, please contact Julia Clifton, Curator of Archaeological Research Collections, at < jclifton@miacrab.org >.

### ***New Mexico BLM Research Fellow Program at MIAC/LAB***

The New Mexico BLM, in cooperation with the Museum of Indian Arts and Culture/Laboratory of Anthropology, has established a fellowship program with a stipend to encourage research and analyses of BLM collections curated at the Museum. The fellowship will provide an award of \$7500, use of the research facilities, and access to existing archaeological collections at the Museum. Candidates for the fellowship should hold a BA in anthropology or related field, be familiar with Southwest archaeology, and be enrolled in good standing in a graduate degree in anthropology or other related field. For further information, refer to the May 2002 issue of the SAA Archaeological Record or contact Julia Clifton at < jclifton@miacrab.org > or (505) 476-1268.

### ***MIAC Exhibitions***

If you haven't stopped by the Museum recently, you have missed the numerous changes both inside and out. First, the new Milner Plaza replaced the Lab's old parking lot. The Greg Dan Goseyun's "Spirit Dancer," a 24-foot high sculpture of an Apache dancer in bronze, highlights the plaza. Across from the statue is the "Museum Hill Café" where you can get a gourmet meal or coffee while looking out over the majestic Jemez Mountains.

Inside MIAC we have installed a number of very important new exhibits. John Torres, our Cu-

rator of Archaeology, completed working on a fantastic exhibit titled "Touched by Fire: The Art, Life, and Legacy of Maria Martinez." This exhibit will run to January 5, 2003 and displays some of Maria's most important pieces. The other exhibit is the "Jewels of the Southwest," which showcases masterpieces of contemporary Southwest Native jewelry through August 30, 2002.

### ***Sun Mountain Gathering: Adventure into the Past***

Teaching archaeology and Native American history has never been more fun! The Museum of Indian Arts and Culture/Laboratory of Anthropology enthusiastically announces the first annual Sun Mountain Gathering set for the weekend of July 13 and 14, 2002. This unique event is dedicated to the understanding, teaching, and preservation of the rich cultural history of New Mexico's first people.

The Sun Mountain Gathering will be packed with educational activities for the public. In addition to Native dancers and musicians entertaining us on the new Milner Plaza, the Gathering will feature archaeology talks and exhibits, demonstrations of traditional native crafts and games, video screenings, and lots of hands-on activities for kids of all ages. There will even be a mock archaeological excavation for young people.

Native performers to the Gathering include the San Juan Dancers, Philip Haozous (Apache flutist), the Tewa Dance Group, the Red Tail Hawks, and the Tewa Youth Dancers.

**TO HELP:** The event will provide varied learning experiences for the visitors. We are looking for analysts, experimental archaeologists, preservationists, and Native craftsmen and performers. Kids of all ages will be able to try their hands at working bone tools, playing Indian games, cordage making, pendant making, fire making, and tilling a garden with a stone hoe (contact Louanne Haecker at < haecker@arms.state.nm.us >). The spearthrower range will be open and there will be lectures on the technology of the atlatl. We need flintknappers, bow makers, arrow makers, cordage makers, hot rock cooking experts (maybe if we get rain), fire-makers, and hide workers to conduct demonstrations along the Heritage Trail, particularly at the heirloom gardens, the Archaic encampment, and a Navajo sheep camp (contact John Torres at < jtorres@miacrab.org >). A Pueblo IV fieldhouse will be under construction during the event and we could use archaeologists to discuss fieldhouses

## Lab Report

and get their hands dirty too. Space will also be available in Meem Hall to set up exhibits and to do lithic and ceramic analyses. It is an excellent time to explain our projects and research to the public. To help in this area, please contact Julia Clifton at < jclifton@miacalab.org >.

The Sun Mountain Gathering will be a fun, family event and it would be an excellent opportunity for NMAC to perform a community service project in keeping with our mission.

### ***Atlatl Competition: We Double Dog Dare You!***

The Laboratory of Anthropology will host an atlatl competition on our spearthrower range on July 13<sup>th</sup> from 2 to 4 pm. The staff of the Museum of New Mexico challenges all archaeologists to shoot for accuracy, distance, and bragging rights. Due to popular demand, we will have both a traditional and high tech atlatl competitions. We also will give a prize for the most accurate replication of a Southwest atlatl. Although we haven't heard from many archaeologists, folks out at the Zia Pueblo have been craving spearthrowers and an Irish pennywhistle player thought he could beat any archaeologist. So if you aren't too afraid, come show them how good you are!

### ***Lab to Host the Pecos Conference Reception on August 8th***

The Museum of Indian Arts and Culture and Laboratory of Anthropology in Santa Fe will host the Pecos Conference reception on August 8, 2002 from 5:30 to 8:30 pm. The reception includes free admission to the Museum of Indian Arts and Culture with all its wonderful exhibits. In addition to the permanent exhibits, you will probably want to stop by the "Touched by Fire: The Art, Life, and Legacy of Maria Martinez." and the Jewels of the Southwest exhibits. Two other temporary exhibits up for the reception include historic Pueblo ceramics from the Frank Harlow collection and the Gallina materials from the Mohr and Sample field schools conducted in the 1960s and 1970s. The Lab will also be displaying our New Mexico atlatls and some of the Mimbres artifacts from the West Fork project. You can also stop by the jacal built in the heirloom gardens outside the museum.



## Federal CRM Update

### ***New Mexico BLM to Get Staffing Boost***

*Farmington Daily Times* 03-May 03-02

WASHINGTON The New Mexico Bureau of Land Management office is in line to be assigned 12 new field staff Sens. Pete Domenici, R-N.M. and Jeff Bingaman, D-N.M., said Thursday.

The staff will help expedite the notoriously slow process of approving oil and gas drilling permits in the state, while ensuring follow-up inspections and enforcement of environmental compliance by drillers.

Domenici and Bingaman said in news releases Thursday that they have been pushing the agency for years to address the shortcomings, and last month, BLM Director Kathleen Clarke accepted an invitation to visit New Mexico and witness the problems first hand.

"Over the years, I have heard complaints from all over the state about the slowness of the BLM permitting process. I have also been very concerned about the lack of oil and gas reclamation oversight in the Farmington area," Domenici said.

"BLM Director Kathleen Clarke came to New Mexico at my request to explore these and other problems in March. I'm pleased that the agency has responded and hope that we will soon see an improvement in BLM activities in the state," he said.

Bingaman agreed, and said that complaints about lack of oversight of the oil and gas industry by ranchers in the San Juan basin helped spark the move.

"The Four Corners region produces a significant amount of oil and gas that keeps our county moving. The region's importance cannot be overstated," Bingaman said. "The BLM's move will help address ranchers' concerns and ensure that there is a balance between ranching and oil and gas interests in the area."

Domenici, a member of the Senate Interior Appropriations Subcommittee that funds the BLM, confirmed that the FY2002 budget allowed for 21 new inspection and enforcement positions nationwide. Twelve are slated for the New Mexico BLM

## Federal CRM Update

office, which has responsibilities for New Mexico, Oklahoma, Kansas and Texas.

Five will go to the Farmington area, four to Oklahoma, and three to the Carlsbad area, the senators said. In addition, BLM is adding two more coordinators in the field, one in Farmington and one in Oklahoma. Domenici cautioned the positions will take several months to fill due to federal hiring practices.

A review completed last year indicated BLM had problems in New Mexico with inspection and enforcement of environmental compliance, and that additional personnel were needed to handle the problem, Domenici said.

"Many in the oil and gas community, and other affected parties, have complained about the insufficient BLM staff for years. It is odd that New Mexico has been neglected, because next to Wyoming, it is the biggest oil and gas state in the country," Domenici said. "I think this is good news and a good start in addressing these longstanding concerns."

Clarke accepted Domenici's invitation to visit New Mexico during her November confirmation hearing before the Senate Energy and Natural Resources Committee. Clarke pledged, in addition to addressing other concerns, to work to eliminate the BLM backlog in processing grazing permit renewals.

After the November hearing, Domenici forwarded to Clarke recommendations given to him by New Mexico producers on issues dealing with the permit process, drilling innovations, and erosion and watershed problems associated with energy production on federal lands. Domenici also asked Clarke to work with the U.S. Department of Agriculture and Forest Service to better coordinate the federal permitting process.



## Grants Report

June-el Piper

In April 2002 the NMAC grants committee voted to award grants to three recipients. We received fifteen requests for funding, and once again we were hard pressed to choose among so many interesting and deserving projects. Thanks to Mike Bremer, Brad Vierra, and Gary Brown for providing rankings and comments via mail or email, and thanks especially to Bob Leonard (UNM) for meeting with me and helping to make the final decisions.

- \$500 was awarded to Todd Howell and Zuni Cultural Resources Enterprise to help fund research on obsidian artifacts from the Middle Village at Zuni Pueblo. The money will go directly to the XRF lab at UC Berkeley for sourcing.
- \$450 was awarded to Kristin Langenfeld (Navajo Nation Archaeology Department) and Paul Nugent (UNM student) to help fund research on Gobernador Polychrome pottery from various museum collections. NMAC and ASNM members got to see some of this pottery (from the Dorothy Keur collection) at recent meetings in Albuquerque and at Salmon Ruin.
- \$595 was awarded to Ron Fields to help pay for dating two atlatls from Lincoln National Forest, NM, currently in the MIAC collections.

I have copies of all grant proposals if any NMAC member is interested.

Also at the meeting in April I resigned from the grants committee and Tim Seaman offered to take over. Thanks, Tim! And thanks to everybody who has helped over the past four years.

## NMAC Member Handbook To be Published Soon

The handbook will contain member contact information, NMAC & NMAF bylaws, and NMAC's Code of Ethics.

If you've moved recently, or would like to check the contact information

we have for you, contact me and I'll tell you what we have.

Please do so by July 15, 2002. *Ed.*

< AlShal@AOL.com > (505) 291-9653





## NewsNotes

### **SHPO Returns to Hometown to Consult**

Gussie Fauntleroy

*The Santa Fe New Mexican* 23-Jun-02

New Mexico historic preservation officer Elmo Baca recently left state government to work as a consultant for a private foundation in his hometown of Las Vegas, N.M.

Baca served for two years as director of the Historic Preservation Division, which is part of the Office of Cultural Affairs. Prior to that he spent a number of years helping revitalize downtown areas in cities around the state as head of the New Mexico Economic Development Department's Main Street Program.

As state historic preservation officer, Baca worked with other agencies and private entities on such high-profile projects as the renovations made to Albuquerque's KiMo Theater, the Lensic Theater in Santa Fe and Montezuma Castle near Las Vegas.

During his tenure, a new statewide program to protect archaeological sites, New Mexico Site-Watch, was established.

Jan Biella, deputy director of the Historic Preservation Division, has been named interim division director.

#### **The Road to Ruins:**

**75 Years of Southwestern Archaeology  
2002 Pecos Conference Aug 8-11  
At Pecos National Historical Park**

Judy Reed < [Judy\\_Reed@nps.gov](mailto:Judy_Reed@nps.gov) >

**Please note:** To take advantage of discount rates for the 2002 Pecos Conference, **forms and pay-**

**ments should be sent** before July 8th to: Pecos Conference, 924 Paseo de Peralta, Suite #4, Santa Fe, New Mexico 87501.

### **Special Note**

This is an extremely dangerous fire season. Be sure to check on the conditions and restrictions before selecting your camping gear. Certain types of cooking equipment, for instance, may be prohibited. Compliance with fire precautions is mandatory.

Forest condition updates, complete information about the conference, and forms may be obtained at < [www.swanet.org/projects.html](http://www.swanet.org/projects.html) > or <

[www.swanet.org/zarchives/pecos/2002](http://www.swanet.org/zarchives/pecos/2002) >.

[Other places to get forest & fire condition updates for NM & the Pecos area include: < [www.fs.fed.us/r3/fire/](http://www.fs.fed.us/r3/fire/) >, < [www.fs.fed.us/r3/fire/swainfo/swainfo.htm](http://www.fs.fed.us/r3/fire/swainfo/swainfo.htm) >, < [www.fs.fed.us/r3/fire/webdaily/swabrief.htm](http://www.fs.fed.us/r3/fire/webdaily/swabrief.htm) >, and < [www.fs.fed.us/r3/fire/swainfo/firerestrictions/nm\\_quad3.html](http://www.fs.fed.us/r3/fire/swainfo/firerestrictions/nm_quad3.html) >.

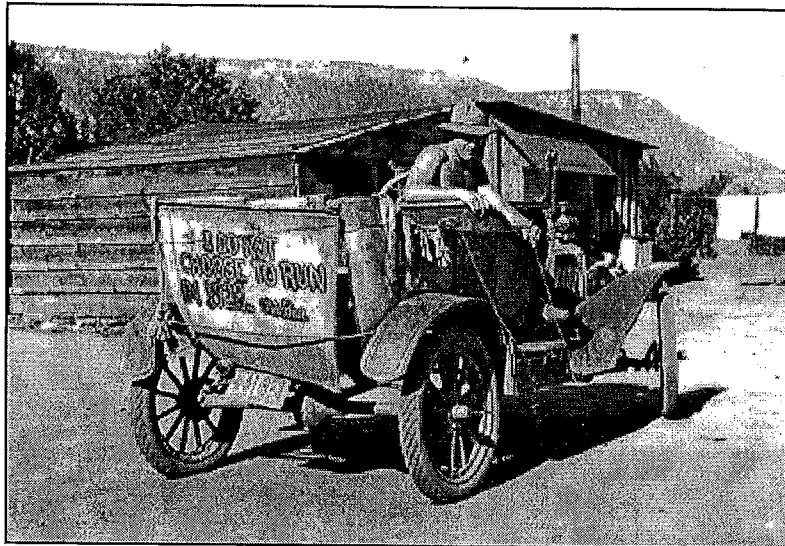
For more about Pecos Pueblo and the Pecos NHP see < <http://www.abqjournal.com/venue/day/heritage7.htm> > and < <http://members.tripod.com/~CAMPGROUND1/pecos-national-historic-park.html> > respectively.

Finally, the full text of a masters' thesis titled Pecos Revisited: A Modern Analysis of Earnest Hooton's The Indians of Pecos Pueblo by Katherine Weisensee at the The University of Tennessee, Knoxville, can be found at < <http://etd.utk.edu:90/2001/WeisenseeKatherine.pdf> >. Ed.]

**Había Una Vez... Once Upon a Time  
In Southwest New Mexico**

**2002 New Mexico Archeology Fair  
October 4-5 in Silver City**

Glenna Dean < [gdean@oca.state.nm.us](mailto:gdean@oca.state.nm.us) >  
[via nmac-l]



"Kidders' Car" named "Blue," Al Kidder's son aboard.

The New Mexico State Archaeologist, Historic Preservation Division/Office of Cultural Affairs, and Western New Mexico University Museum are pleased to announce the Ninth Annual New Mexico Archaeology Fair to be held in Gough Park in Silver City as a 2-day outdoor event on Friday, 4 October 2002 from Noon to 5 PM, and on Saturday, 5 October 2002 from 9 AM to 5 PM. Gough Park is located between 12<sup>th</sup> and 13<sup>th</sup> (N/S) and Pope and Main streets (E/W) and we will be under the trees just shy of downtown Silver City.

The move to October will take the Fair back outside during a season less famous for gusty winds than May. As always, the Fair provides an opportunity for archaeologists to showcase projects and activities in NM in general, or the greater SW NM area in particular, as well as to have fun interacting with a diverse public and catching up on each other's activities since the last Fair.

The focus of the Fair is "Había Una Vez...Once Upon a Time...in Southwest New Mexico" with an emphasis on what's been learned – and what remains to be learned – in SW NM and adjacent AZ, TX, and Mexico.

All archaeologists are invited to join the fun at the Fair, even if you don't have an exhibit directly relating to the Southwest quadrant of the state. All you really need is one or two people willing to talk to the public about archaeology for a few hours, but some kind of exhibit (no matter how modest) will help break the ice. Mount photos on poster board, compile a three-ring notebook with photos of a project in the field or in the lab, hand out handouts, or think of a giveaway with an archaeological or preservation message. This is a chance to convey the most information about your profession as well as your organization's archaeological activities through one-on-one conversations with the public.

You can sell memberships, books, videos, t-shirts, or other archaeologically related items as appropriate, and HPD would like to have a raffle to benefit the 2003 New Mexico Archaeology Fair (donations anyone?). Electricity is available for formal exhibits, computers, and audio-visual equipment in the Park's gazebo as well as in a covered area. The Fair on Friday afternoon is aimed at attracting school kids; the whole town will turn out on Saturday.

Demonstrators are especially welcome! Because of security issues, all exhibits, including the tables and chairs the City will provide us, must be taken down at the end of the day on Friday and set up again on Saturday (they can be stored in the Recreation Center about a mile from the Park) so you'll want to keep portability of exhibits and demonstrations in mind. Street parking is available. There's lots of local lodging, but we can try for a block of rooms somewhere if there's interest (get back to us!).

There are no fees involved in participating in the Fair – just show up and have a good time! Contact me for an exhibitor sign-up form.

Mark your calendars and join friends, colleagues, and the HPD archaeology staff for a return to the days of Archaeology au Natural (natural *setting*, that is)! Fill out the attached form so we'll know what you need. Local arrangements will be coordinated by Cynthia Bettison, Western New Mexico University Museum, Silver City. Contact her at (505) 538-6386 or <bettisonc@iron.wnmu.edu> with questions. Send your forms to Glenna Dean at the address below. See you in October!

Glenna Dean, New Mexico State Archaeologist, Historic Preservation Division, Office of Cultural Affairs, 228 E. Palace Avenue, Santa Fe, New Mexico 87501; (505) 827-3989; (505) 827-6338 fax.

### **Wrapup: Past As Present Lecture Series**

Glenna Dean

[via nmac-l] 19-Apr-02

Many thanks to NMAC for co-sponsoring the "Past as Present: Archeology and Descendant Communities in Northern New Mexico" lecture series that drew to a close last night. Many NMAC members attended one or more of the six lectures, and various of you also pitched in to person the NMAC table; take donations; pimp posters; help me set up refreshments and clean up afterwards; introduce the speakers; round up tables, chairs, and slide projector "clickers;" shut doors against long-winded bagpipe players; and all the myriad other things that need unscheduled attention before, during, and after a public event – for which I thank you as well.

The lecture series received a warm round of applause from the attendees at last night's final lecture (Mr. Herman Agoyo, San Juan Pueblo, "Pueblo Perspectives on History and Preservation

in the Homeland")...and I actually heard myself say, through a microphone in public, that I'm planning a second lecture series to run January-April 2003 (tentative topic: "Acequias Past, Present, and Future") – I have some possible speakers in mind to discuss the issue from the archeological past into an uncertain future, but will welcome suggestions from the membership on speakers for this topic as well as other topics for future lecture series.

We all did good with this. Let's do it again.

### ***Archaeological Law Enforcement Course Planned for Oct. 2002***

Glenna Dean < gdean@oca.state.nm.us >

Archaeological Resource Investigations and the New Mexico Historic Preservation Division are again offering a 24-hour class on Archaeological Law Enforcement, which offers training on all aspects of the investigation and prosecution of archaeological crimes under ARPA, the Archaeological Resources Protection Act.

Despite the federal focus of ARPA, there are aspects of this law that apply to state and private land – and the field investigation techniques will be useful to any archaeologist who stumbles onto a disturbed site.

The instructors for the class are recognized national experts and include Martin McAllister, archaeologist instructor, and Wayne Dance, Assistant US Attorney of Utah, as attorney instructor.

Tuition for the class will run about \$250 and is POST-certified for law enforcement personnel. The class will be held in Albuquerque in mid-October, 2002. The specific date has not yet been determined.

### ***Art and Archaeology Technical Abstracts (AATA) Available As a Free Online Resource***

The following is posted on behalf of  
Luke Gilliland-Swetland,  
Head of Information Resources,  
The Getty Conservation Institute.  
[via ExLibris-l]

The Getty Conservation Institute (GCI), in association with the International Institute for Conservation of Historic and Artistic Works (IIC), is bringing

Art and Archaeology Technical Abstracts to the World Wide Web as a free service to the international conservation community.

Publicly launched on June 8, 2002, AATA Online: Abstracts of International Conservation Literature < [www.getty.edu/conservation](http://www.getty.edu/conservation) > offers all 36 volumes of *Art and Archaeology Technical Abstracts* and its predecessor, *IIC Abstracts*, published between 1955 and the present. By year end, abstracts from the 20 AATA special supplements and almost 2,000 abstracts published between 1932 and 1955 by the Fogg Art Museum and the Freer Gallery of Art will be included as well.

Ultimately, more than 100,000 abstracts related to the preservation and conservation of material cultural heritage will be accessible in AATA Online. New abstracts will be added quarterly, as AATA staff work with subject editors and volunteer abstractors to expand the breadth, depth, and currency of coverage.

After registering for this free service, users will be able to set a variety of preferences to tailor the system to their research interests and needs. The interface provides a number of features including several simple but powerful search capabilities; the ability to save user-created search strategies for use in future sessions; and an on-screen notice of the new abstracts added in the users' selected areas of interest in the last quarterly update.

Users will be able to download or print out their search results. The classification scheme and subject category descriptions from the print version of AATA can also be displayed online for those who prefer to use this more familiar method of searching.

If you have questions or need additional information, please contact the AATA office at < [aata@getty.edu](mailto:aata@getty.edu) >

### ***SWA Needs Help***

Brian Kenny

[via Got CALICHE] 07-Jun-02

SWA runs on a shoestring budget, and we need to fundraise to continue operations.

SWA is a 501(c)(3) customer-centric corporation dedicated to the ethnographic study of scientific practices in the American Southwest. Our goal is to create and promote diverse micro-environments and open systems in which archaeologists can develop their talents and take the risks from which innovation and productivity arise.

SWA's goal is to \$8000 by fall 2002. Upon

## NewsNotes

achieving this goal, SWA will spend up to \$2500-\$3000 to purchase a new computer work station; the balance (\$5000-\$5500) will be used for operating expenses in 2002-2003-2004 (note SWA's balance sheet: operating expenses avg \$2828 per yr [1998-2001 range \$1445-4034]).

The good news: As of this morning, forty-six donors (less than one percent of GC newsletter readers) have contributed \$2785.00 (approx. 35% of our goal).

How about a two-percent solution! Please estimate the value you receive from the daily GC newsletter (see our statement at the bottom of the page) and the entire < [www.swanet.org](http://www.swanet.org) > website. Then, send your tax-deductible donation, or, make a pledge of financial support. Thank you!

Southwestern Archaeology, Inc.,  
P.O. Box 61203  
Phoenix AZ, USA 85082-1203.

## History Calls This a Rainy Spell In NM

Jennifer McKee  
*Albuquerque Journal* 01-May-02

Two thousand years of tree rings show when New Mexico was really in a drought

Bruce King and his wife Alice had been married 10 years when the rain stopped falling.

All the grass died, said King, the three-time governor of New Mexico and longtime Estancia Valley rancher, recalling the drought of 1956.

"There was nothing for the cows to eat," he said. And nothing to hold down the dry, sandy soil, which filled the air in nearly constant sandstorms.

"It was every bit as dry as it was this time," King said. "Or drier."

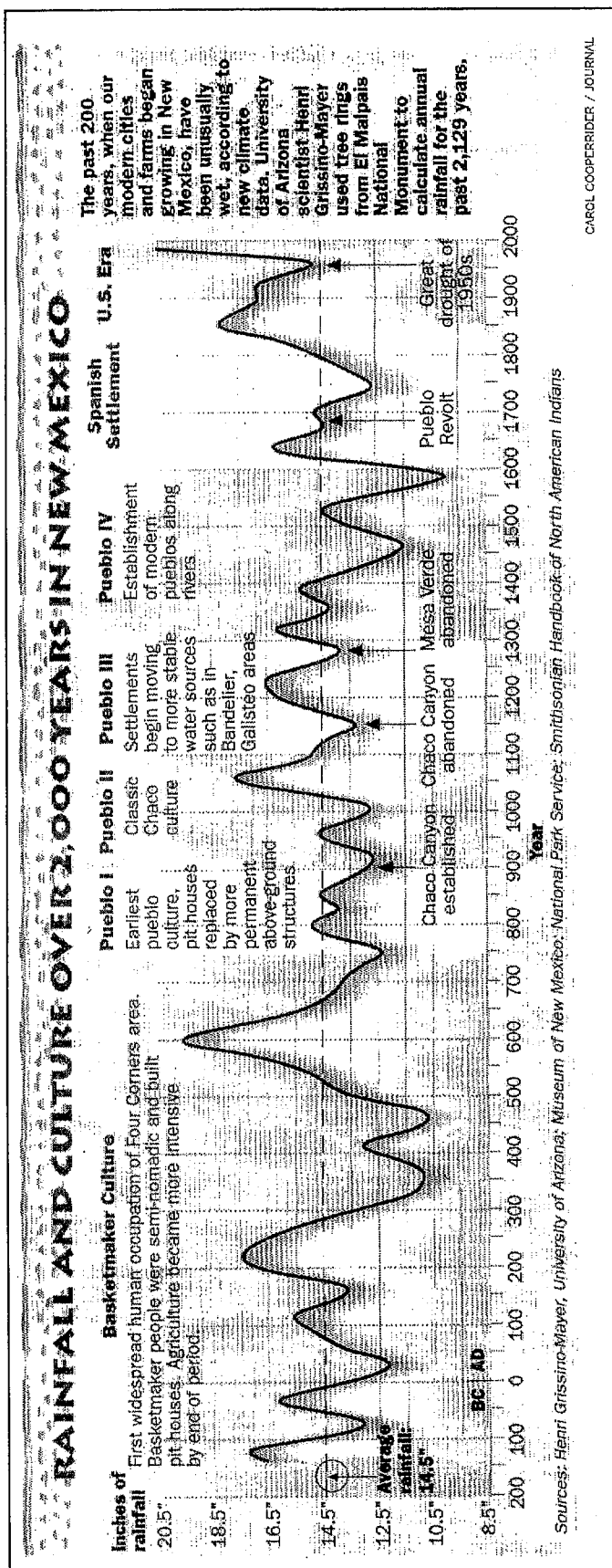
But 1956, remembered as calamitous by most, represents the average amount of rainfall in New Mexico over the past 2,000 years.

Information gleaned from tree-ring examinations by Henri Grissino-Mayer, a scientist at the University of Tennessee, shows regular, crushing droughts are a part of New Mexico history.

"The 1950s drought was nothing, really," said Grissino-Mayer.

And the rain has been falling ever since. Since 1976, Grissino-Mayer said, New Mexico has had its wettest 25-year period.

"You're in this false sense of security, like it's going to stay like this," he said. "You're wrong.



CAROL COOPER/IDEA / JOURNAL

comparison.”

Consider the mid-1500s, when New Mexico and most of the rest of the American continent was gripped in a 40-year drought, he said.

“There’s no way that large human populations would be able to live in that,” said Grissino-Mayer. “It was not a good time.”

A 1998 U.S. Department of Agriculture study that examined water use in the Middle Rio Grande Basin over the past 500 years found that droughts occurred about every nine years and lasted about 4 1/2 years.

Tewa- and Keres-speaking tribes routinely abandoned their villages during drought years, according to the USDA study. Later, during a series of droughts in the 1600s, Pueblo and Hispanic villagers noted that Apaches and Navajos seemed to raid their towns more often during dry years.

The study lists drought as one of the “environmental stresses” that led to the Pueblo Revolt of 1680, when Pueblo peoples drove the Spaniards out of the state.

According to both the USDA study and tree-ring data, New Mexico is due for a drought.

This could be it. Back in 1956, water was so tight, according to State Engineer Tom Turney, the Rio Grande couldn’t make it all the way to Elephant Butte reservoir. Instead, the river splintered and evaporated before it plowed through the expanding dry lake bed left as the reservoir retreated.

So crews dug a straight, hard canal through the lakebed, finally coaxing the Rio Grande to the shrunken reservoir.

As wet times returned, that canal disappeared underwater.

This spring, the lake retreated enough to reveal the canal for the first time in almost 50 years.

Today, Turney said, the Rio Grande flows into Elephant Butte at 8 percent of normal. He’s expecting flow to be 2 percent of normal by July.

Turney said crews will have to dig another canal to the reservoir this summer.

The drought is affecting other bodies of water, too.

Heron Lake, which holds the state’s allotment of Colorado River water, stopped receiving new water because the rivers in Colorado that feed the reservoir started running dry.

Heron provides storage for New Mexico’s San Juan-Chama water, diverted from the headwaters of the San Juan River.

The San Juan-Chama water is expected to be a source of water for Albuquerque, Santa Fe and other communities.

Will rainfall return to its historic lows?

“You don’t know what’s going to happen,” Turney said. “But if it does, we have to have adequate water supplies.”

### ***NMSHTD Cultural Resource Technical Series Publications Available***

Samantha Ruscavage-Barz

NMSHTD, Environmental Section

[via nmac-l] 12-Apr-02

The New Mexico State Highway and Transportation Department (NMSHTD) Environmental Section has initiated a Cultural Resource Technical Series reporting results from various archaeological data recovery projects throughout the state. This technical series is part of the ongoing effort of NMSHTD to make our Cultural Resource program more accessible to the archaeological community and the general public. The reports are available at no charge. The following reports are currently available:

#### **Year 2000**

- Archaeological Data Recovery at Eight Sites along NM 44, North-Central New Mexico, by Parsons Brinckerhoff, NMSHTD Cultural Resource Technical Series 2000-1A.
- Archaeological Data Recovery at Three Sites along NM 44, Sandoval and San Juan Counties, New Mexico, by Cibola Research Consultants. NMSHTD Cultural Resource Technical Series 2000-1B Volume 1.
- Data Recovery Excavation of LA 66922 at Alamogordo, Otero County, New Mexico, by SWCA, Inc., NMSHTD Cultural Resource Technical Series 2000-2.
- Investigations at LA 110299, a Late Dinétah Phase Occupation along US 550, North of Cedar Hill, New Mexico, by the University of New Mexico Office of Contract Archaeology, NMSHTD Cultural Resource Technical Series 2000-4.

#### **Year 2001**

- Valmont, An Early 1900s Railroad and Ranching Community near Alamogordo: Archaeological

(Continued on page 31)



## Internet Notes

“

When I want to search in anthropology I rely on my years of exposure to the literature, find the articles or books that I know about, check out the references listed in those, check out the references listed in those, and so on until I stop finding new references. I'll also ask a friend or two about references they can recommend, and apply the same system. Slow but sure.

”

The quote above was a response to the following question I posed to a respected researcher:

When you're doing literature research and want to go beyond internet search engines, what types of media / sources do you usually use? Journal indexes? Periodicals indexes? Printed? Online?

My question arose out of research I've been conducting for *NewsMAC* and previously while assisting a nephew researching the neuro-biological effects of sodium channel blocking compounds found in naturally occurring organic toxins, and derivatives thereof.

What I found is a great and mostly hidden wealth of research information and access tools available on the internet that is beginning to fulfill the promise theorized during the late 1990's when development of these types of tools began to accelerate. These sources are typically not available through search engines.

It appears to me that many active users of the internet – such as the anonymous researcher quoted above – are unfamiliar with the nature of these emerging resources – or how to access them. Hence, my aim here to familiarize *NewsMAC* read-

## A Framework for Internet eResearch

### Gateways

The Web site at which you gain entry to the research resources.

Examples include libraries, publishers, or even single journals. In many cases, users must subscribe to gateways which may, in turn, subscribe to non-captive research services.

### Packagers

There is a growing number of intermediary packagers of information sources. They

include publisher and library consortiums as well as independents. They tend to specialize by subject or type of source and provide access management services to gateways.

### Databases & Subjects

Given large numbers of original sources (see below), search services generally tend to cluster them by subject. For journals, this might be scholarly discipline, for newspapers, country & or region, etc. Searches can often be hunt-and-peck if subject classifications are not clear.

### Sources

The ultimate source of information accessed online, very often a journal, book,

library catalog, news source, or other database (e.g. Books in Print). Information available may be title, author, and full text; title, author & abstract, or just title and author or bibliographic citation. Many sources are limited by publication date.

### Access

What you can access isn't necessarily what the source has available. It can depend on

subscription level. Consequently, searches of a given source will be limited by the information it makes available – e.g. simple or boolean searches on bibliographic information vs. full text.

## Internet Notes

ers with the nature, scope, and accessibility of some valuable assets for literature research. An overview is shown in the chart on the previous page. I'll try to illustrate with some real-life examples.

I don't presume that most *NewsMAC* readers have the sort of access I use, but anyone can examine the Web sites and pages I'll mention, and should be able follow along.

### Gateways

I subscribe to AOL and also have internet access through my online user account at UNM. I access both services via dialup connections when at home, and via UNM's campus network when I'm there.

Some time ago, I learned that the Oxford English Dictionary < [www.oed.com](http://www.oed.com) > is online and I tried to use it when I logged on through AOL. No dice; they wanted me to have a user account – something that apparently costs real money. Never mind. Though not the same, there are plenty of other dictionaries online with free access.

On another occasion, I tried the OED again when logged on via my UNM account. "Welcome UNM user" the opening Web page said, and I was in, able to browse freely.

What's going on?

What I didn't know at the time was that UNM subscribes to the OED online, thus providing free access for anyone who has a UNM account and who logs on to the internet using UNM as their ISP. Since I logged on through UNM and all responses had to be routed back to me via UNM's computers, the OED site knew I had an account at one of their subscribers.

This kind of "proxy" service is a generally used technique for remote / dial-up users to access subscription services, particularly through educational institutions.

After a while, I had a chance to peruse many nooks and crannies of UNM's Web site and found three critical pages that have significantly changed the way I do literature research. These three pages are all associated with what UNM – and many other institutions – calls its "eLibrary." Its home page is at < [elibrary.unm.edu](http://elibrary.unm.edu) > (no www prefix).

Buried in a pile of library-related information for remote access are two rather unassuming, but

potent clickables, titled:

### Research Databases & Indexes Electronic Journals

The first leads to < [elibrary.unm.edu/Resources/databases.shtml](http://elibrary.unm.edu/Resources/databases.shtml) >, a page containing a list of, and links to almost 200 subscription-based information services. The second leads to a page containing a jumbled kluge of tech-speak about online access to full text resources. It takes great patience, but with a lot of poking around you can find some valuable references – like a site at which you can check if UNM has a full-text, electronic copy of a journal (just enter the name).

Eventually, I found my third most valuable page at < [elibrary.unm.edu/Firstsearch/](http://elibrary.unm.edu/Firstsearch/) >. This page presents an entry point to OCLC's Firstsearch site at which about 60 of the 200 UNM subscription services can be accessed through a single interface (OCLC is a nonprofit membership organization serving 41,000 libraries in 82 countries and territories around the world).

(Another UNM page lists 194 print journals whose subscriptions are being dropped by UNM -- due to flat budgets, alternate access online, and reallocation of budgets to providing online access. This phenomenon is not unique to UNM.)

Curious about what's going on at other institutions around the state, I found similar resources available at the following; no doubt there are others. (Don't use www prefix unless shown.)

TVI Research Databases & Serials Holdings  
< [planet.tvi.cc.nm.us/library/tvi\\_databases.htm](http://planet.tvi.cc.nm.us/library/tvi_databases.htm) >

San Juan College Library Magazine Indexes and Online Databases  
< [www.sjc.cc.nm.us/Lib/database2.htm](http://www.sjc.cc.nm.us/Lib/database2.htm) >

NMSU Library Online Journals (and databases)  
< [lib.nmsu.edu/journals/](http://lib.nmsu.edu/journals/) >

New Mexico Tech Electronic Resources  
< [www.nmt.edu/~nmtlib/nmtlibelectronresource.html](http://www.nmt.edu/~nmtlib/nmtlibelectronresource.html) >

New Mexico Highlands Univ. Electronic Resources  
< [donnelly.nmhu.edu/remote2.html](http://donnelly.nmhu.edu/remote2.html) >  
(can't get far without a user ID)

WNMU Search GilaCat  
< [voyager.wnmu.edu/](http://voyager.wnmu.edu/) >



## Internet Notes

### ENUM Library Periodical Databases

< [www.enmu.edu/academics/library/periodical-databases/index.shtml](http://www.enmu.edu/academics/library/periodical-databases/index.shtml) >

### NM State Library Online Databases of Periodicals

< [www.stlib.state.nm.us/libraryservices/statepubs/sg8.html](http://www.stlib.state.nm.us/libraryservices/statepubs/sg8.html) >

### Packagers

A note at the NM State Library (NMSL) site reads:

*"From libraries (public, school, and college/university libraries) in New Mexico, residents can log into the databases of the Magazines Online program and find articles published in general journals and periodicals, as well as in health and business. The databases may also be searched at the State Library. The Magazines Online program is paid for by the New Mexico State Library, so it is free to state residents."*

*"Contact your local public, school, or academic library to gain access to the Magazines Online databases."*

### Subjects

Three databases are available at the NMSL site:

- *ProQuest Direct* – provides access to approximately 2,500 general periodicals and newspapers. Of these, 1,400 provide the full text of the articles directly.
- *Business Source Elite* – provides access to 1,600 periodicals on the topic of business, very broadly defined
- *Health Reference Center* – provides access to periodicals and reference sources on the broad topic of health and medical information.

I've found that if I select any of these databases at the UNM General Library (UNMGL) site, I'm switched to what looks like their interfaces customized for the NMSL. You should see the same if you have qualified access as per the NMSL statement above - e.g. an account at any of the institutional services mentioned under Gateways.

In essence, the three databases think I'm a NMSL user – and NMSL picks up the tab.

So, NMSL acts as a Packager of a selected number of databases which, it turn, are Packagers of

access to numerous Databases – ultimately providing access to information housed at an enormous number of Sources.

The NMSL example illustrates that access is usually organized by Subject. This is also true of the almost 200 UNMGL databases listed at < [elibrary.unm.edu/Resources/databases.shtml](http://elibrary.unm.edu/Resources/databases.shtml) > that I mentioned earlier.

This organization is convenient – but only if your search needs are a good fit to the subject clusters presented by the Packagers and Databases.

On the other hand, I have not yet found any Subject classification that exactly corresponds to "archaeology." Now what?

### Sources

The heart of this issue is the mapping of Sources – literally tens of thousands of them – vs. Subject categories whose category definitions can vary significantly across databases.

You can get an idea of the Sources population at Cornell's site:

< [campusgw.library.cornell.edu/cgi-bin/dj.cgi?section=ejournal&URL=SerialsSearch](http://campusgw.library.cornell.edu/cgi-bin/dj.cgi?section=ejournal&URL=SerialsSearch) >

*This page searches over 16,000 of the electronic journals licensed by the Cornell University Library. Clicking on one of the letters above will display the electronic journals beginning with that letter.*

*IMPORTANT NOTE: The titles in this list are NOT ALL THE ELECTRONIC JOURNALS that the CU Library licenses. If you do not find the title in this list, please check the Library Catalog.*

Ingenta (available via UnCover) says:

*Since its launch in May 1998, Ingenta has developed and grown to become the leading Web infomediary empowering the exchange of academic and professional content online. Now, with the acquisition of Catchword, Ingenta supplies unsurpassed access to:*

- 5,400+ full-text online publications
- 26,000+ publications
- And serves a growing global audience:
- 190+ academic and professional publishers
- 10,000+ academic, research and corporate libraries and institutions, incorporating 25 million users worldwide

There doesn't seem to be an easy answer here. My own experience leads me to suggest that, for archaeology, look for Databases that appear to relate to "anthropology" or "humanities." Otherwise, as

## Internet Notes

per the opening quote – ask someone what they use.

### Access

The final, and perhaps most important thing to know about “eResearch” is what kind of, and how much information you may be able to get online as the result of your search.

The most desirable result is being able to search and acquire full text online. In conjunction with this issue of *NewsMAC*, I was delighted to gain access the full text of Ron Towner’s *The Archaeology of Navajo Origins* at the UNMGL site, and was able to retrieve Carol Cohea’s newspaper story on page 7 of this issue, using Lexis-Nexis Academic Universe – after it was no longer available at the *Daily Times* site.

In many cases, your access will be limited to:

- Bibliographic citations for books and journal articles.
- Above plus abstract.
- Above plus ability to order a printed copy or access on a pay-per-view basis.

That’s about all I have room for now. Get in touch with questions and I’ll try to help directly – and/or through *NewsMAC*. ‘Til then, happy hunting, and remember: *What You Get Depends on How You Get There*. Ed.

### Negotiating WPD to PDF File Conversions

*[A friend’s firm is under contract to produce printed manuals / documents using WordPerfect and to produce Adobe Acrobat files for online access – having identical format. I submitted the question to nmac-l with the following responses. They are presented in about the order received.]*

*Upgrade to WP ver. 10 seems to be the slickest answer and Tim Maxwell’s comments about fonts and graphics seem worth special attention in all conversions.*

*My friend and I thank all who participated in the discussion. I’d also guess that many NMAC members will find value in the advice tendered. Ed.]*

**Susana Katz** < katzes-priam@msn.com >

This is a WordPerfect 10 feature, but I’m not sure it’s on earlier versions. If your friend has an earlier

version, they can give the document on disk or send it to someone with WP10. It’s an option on File, “publish as PDF.”

**Paul Reed** < preed@cdarc.org >

To make it work, the Acrobat PDFwriter must be installed as a printer option for WPerfect. Then, you print to a file; the program will prompt for a name, and assign a PDF extension to it. Then, you have to open the file in Adobe and it should appear exactly as it did in WPerfect. WPerfect reformats documents for different printers, so the PDFWriter has to be selected prior to final formatting in order to see how the document will look, how pages will break, etc. That is the most direct route.

One can also to print to a \*.ps file, then use Adobe Distiller to a produce a PDF file. This option gives you more control over the output resolution.

**June-el Piper** < mjpiper@unm.edu >

I use a postscript printer driver and generate a .prn file and I change the file name from .prn to .ps and it works. I use the driver provided by the printer (Kinkos, Alphagraphics, UNM Digital Graphics) but you could probably use whatever Xerox/Docutech type driver is standard in Windows.

This is how I’ve done the NMAC books.

**Dave Phillips** < dphillips@swca.com >

I spent a couple of weeks chasing the notion that one can convert directly from WordPerfect or Word to a .pdf file, and end up with a facsimile of the original file. In my experience conversions are possible but at best, the resulting document only looks “somewhat like” the original word processing document. For someone trying to create a formal publication such as a book, that’s not good enough. And for long, complex documents replete with illustrations, the conversion often doesn’t work at all. I’ve concluded that it is necessary to import the word processor file into a page description language, format there, and then convert to a .pdf file from there. We are using Adobe Framemaker for the intermediate step but I would be interested to hear what has worked (or not worked) for other people.

**Diane Kimbrell Howell** < zcrelab@nm.net >

Your friend probably has a text OCR (optical character recognition) function “turned on” in their software (this will try and convert any unknown

## Internet Notes

characters into its best guess). We have been able to switch our software to "image" vs. text, giving you an exact image of your document for your .pdf.

We are a WORD office here, but I am pretty sure that you cannot save a file as a .pdf directly from WordPerfect; hence, not knowing what kind of conversion software is being used this is the best answer I can give; so, just:

1. Print out your WordPerfect Document.
2. Scan it and save it as an image file.
3. Open it up in your conversion software and save the image as .pdf (making sure it does not go through the text OCR process\*).

\*remember, if you do not put it through a text OCR, your .pdf won't be searchable.

OR,

If you can directly open up your WordPerfect document in the conversion software, you could double check that your font settings are the same as the document's original size and typeface. This keeps conversion software from changing quite as much.

Hope this helps, if not, feel free to contact me. We have recently started up an Office of Information Technology division of ZCRE, Inc. and are happy to help with anyone's document conversion needs.

Diane Kimbrell Howell, Technical Director  
Zuni Cultural Resource Enterprise, Inc.  
Office of Information Technology  
(505) 782-4354 or (505) 782-4814  
fax: (505) 782-2393  
< zcrelab@nm.net > or < zcreoit@yahoo.com >

**Gary Hein** < ghein2a@EARTHLINK.NET >

The most straight forward way to make PDF Files is to use the paid version of ACROBAT Reader that allows for the creation of PDF files. You can do Word, AutoCAD, etc. The document you create as a PDF is identical to the original form. You can signup at < www.adobe.com > and do five documents for free.

**Tim Maxwell** < tmaxwell@oas.state.nm.us >

I successfully converted my dissertation, figures and all, to a PDF file. It took only seconds and

worked well, but I now know a couple of ways to do it.

With WordPerfect 9.0 or above: Simply choose the "Publish to PDF..." option. It is a couple of lines below the "Print" choice on the "File" menu.

Some caveats: Early versions of WordPerfect 9.0 had fonts that weren't licensed for use outside of WordPerfect. These fonts cause the PDF conversion to abort or crash. If this happens, you have to go to the Corel site and download the licensed fonts. There is a download package that contains all of the offending fonts.

Because of differences in metrics between Windows' TrueType fonts and PDF fonts, your document pagination might change. There's not a whole lot you can do about it except fuss around with page breaks.

A superior method is to buy the full Adobe Acrobat application and, once installed, choose "Acrobat Distiller" as your printer from the Print screen. It seems to do a much better job of maintaining your original formatting. This may be your only option for WordPerfect 8 and below. If you have student or educational institution status, the full version can usually be bought at a low price at a university bookstore or from on-line retailers that offer academic pricing. I think we paid \$60 and it is usually \$250.

For graphics I found that, oddly, the best format for saving graphics to be imported into a WordPerfect file that will later be converted to PDF is the .PCX format. These graphic files had the cleanest look after conversion to PDF; even better than Windows bitmap, Windows metafile, or Corel's own graphics format.

I located additional help through a Google.com search on "convert wordperfect acrobat." Two pages that seem useful are:

- Getting the Most out of the "Publish to PDF" Option:

< kb.corel.com/kbdocs/WP90WIN/  
WP90WIN/WP90WIN\_206255.htm >

and

- How to Convert Word Perfect Files to PDF:  
< www.etd.uc.edu/content/pdf/WP2PDF.pdf >.

### **Mission Accomplished**

Thanks to the advice of these nmac-l respondents, my friend's firm was able to solve its problem following Tim Maxwell's distiller solution - within a few hours of the time I sent out my inquiry. They've also decided to upgrade to WP version 10.

## NewsNotes

(Continued from page 25)

Data Recovery at LA 115252, Otero County, New Mexico, by Human Systems Research Inc., NMSHTD Cultural Resource Technical Series 2001-1.

- Data Recovery Report on Sites LA 86735, LA 86736, and LA 120979 along U.S Highway 54 between Tularosa and Carrizozo, Otero County, New Mexico, by Human Systems Research Inc., NMSHTD Cultural Resource Technical Series 2001-2.

- Households and Farms in Early Zuni Prehistory: Settlement, Subsistence, and the Archaeology of Y Unit Draw, Archaeological Investigations at 18 Sites Along New Mexico State Highway 602 (Parts 1 & 2), by Zuni Cultural Resource Enterprise, NMSHTD Cultural Resource Technical Series 2001-3.

If you would like to request a report, please contact Samantha Ruscavage-Barz at (505) 827-5231 or < samantha.ruscavage-barz@nmshtd.state.nm.us >. To learn more about the NMSHTD Cultural Resources Program, please contact Blake Roxlau at (505) 827-5224 or < blake.roxlau@nmshtd.state.nm.us >.

### NMAC Special Publications #1 & #2 Are Back In Print

Special Publication #1, 1992 *Current Research on the Late Prehistory and Early History of New Mexico*, containing 31 chapters on Pueblo, Spanish, and Athabaskan research, edited by Bradley J. Vierra (2002 reprint of 1995); 353 pp., coil bound; \$25.00 + s/h (see form below).

Special Publication #2 *Soil, Water, Biology, Belief* volume on agriculture in the Southwest, edited by Wolky Toll (2002 reprint of 1995); \$25.00 plus \$25.00 + s/h (see form below).

If your mailing address doesn't appear on the

other side of this form, don't forget to include it with your order.

If you're not a NMAC member, please include your daytime telephone number and e-mail address.

Just write both on the other side or include them on / with a copy of this form.

Send your order to:

NMAC Publications  
P.O. Box 25691  
Albuquerque, NM 87125.

June-el Piper

### Publication Order Form

\$ \_\_\_\_\_ is enclosed for \_\_\_\_\_ copy/copies of NMAC Special Publication No. 1: *Current Research on the Late Prehistory and Early History of New Mexico* (2002 reprint); at \$25.00 per copy plus s/h.

\$ \_\_\_\_\_ is enclosed for \_\_\_\_\_ copy/copies of NMAC Special Publication No. 2: *Soil, Water, Biology, and Belief...* (2002); at \$25.00 per copy, plus s/h.

Special Pubs. No. 3 & No. 4 cost \$10.00 per copy for members; \$14.29 per copy for others; plus s/h.

\$ \_\_\_\_\_ is enclosed for \_\_\_\_\_ copies of NMAC Special Publication No. 3: *Examining the Course of SW Archaeology*, edited by David A. Phillips, Jr., and Lynne Sebastian (2001); 170+ pp.

\$ \_\_\_\_\_ is enclosed for \_\_\_\_\_ copies of NMAC Special Publication No. 4: *Chaco Society and Polity* edited by Linda S. Cordell et al. (2001); 90+ pp.

**Please note the following s/h (shipping and handling charges for Special Publications (only)).**

\$ \_\_\_\_\_ is enclosed for shipping / handling: \$4.50 for 1 or 2 copies of any Special Publication(s) plus \$2.50 for each copy in excess of two.

\$ \_\_\_\_\_ is enclosed for \_\_\_\_\_ copy/copies of *Anasazi Community Architecture in the Chuska Valley: Site Summaries and Maps* (1996), at \$10.00 per copy, including s/h; coil bound, 70 pp.,

\$ \_\_\_\_\_ is enclosed for \_\_\_\_\_ copies of NMAC's UTM Template at \$7.00 each, including shipping and handling.

\$ \_\_\_\_\_ Total Payment 

Check #

Date

Amount

\$

## New Mexico Archeological Council

NMAC is a nonprofit organization whose purpose is to maintain and promote the goals of professional archeology in the State of New Mexico, in a manner consistent with Section 501(1)(6) of the Internal Revenue Code.

Its goals are:

- Promoting archeological research within New Mexico, and disseminating knowledge arising from that research.
- Promoting awareness of New Mexico's cultural resources among public agencies, corporations, and members of the public.
- Encouraging the legal protection of cultural resources.
- Encouraging high standards for professional archeology.

***Please send membership inquiries and dues to NMAC at the address shown below.***

## NewsMAC

*NewsMAC* is a quarterly newsletter concerned with cultural resource management and archaeological research in the Southwest. It is published for NMAC members – dues are \$20.00 per year for individuals; \$35.00 for sponsors; and \$35.00 for institutions.

NMAC encourages and gives priority to publishing member contributions to *NewsMAC*. They may be submitted in four ways (descending order of preference):

- Contained within an e-mail message.
- As an unformatted text file attached to an e-mail cover message.
- As an unformatted text file contained in a PC-compatible floppy disk.
- Printed, via U.S. mail or via fax.

***Articles or letters to the editor should be sent to***

Alan Shalette, *NewsMAC* Editor  
< AlShal@aol.com >  
5294 Mesa del Oso NE  
Albuquerque, NM 87111  
(505) 291-9653

# News NMAC

NEWSLETTER OF THE NEW MEXICO ARCHEOLOGICAL COUNCIL

P.O. Box 25691

Albuquerque, NM 87125

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CORRALES NM 87048

[2002]

# News NMAC

NEWSLETTER  
OF THE  
NEW MEXICO  
ARCHEOLOGICAL COUNCIL

2002 Number 4

October 2002

## ***Next NMAC General Meeting Will Be In Socorro on Nov. 9***

See adjacent column..

## ***Chaco Synthesis Project Conference in Albuquerque Oct. 16-19***

See Current Research on pg. 8.

## ***New ARMS Fee Schedule Takes Effect 1-Jan-03***

See ARMS Report on page 19.

## ***The Case for Professional Registration***

See Issues & Viewpoints on page 16.

## ***Roster of NMAC's Founding Members***

See NMAC's 25th Year on page 28.

## ***2003 Membership Dues Will Be Due by December 31, 2002***

See membership & publication order form on page 29.

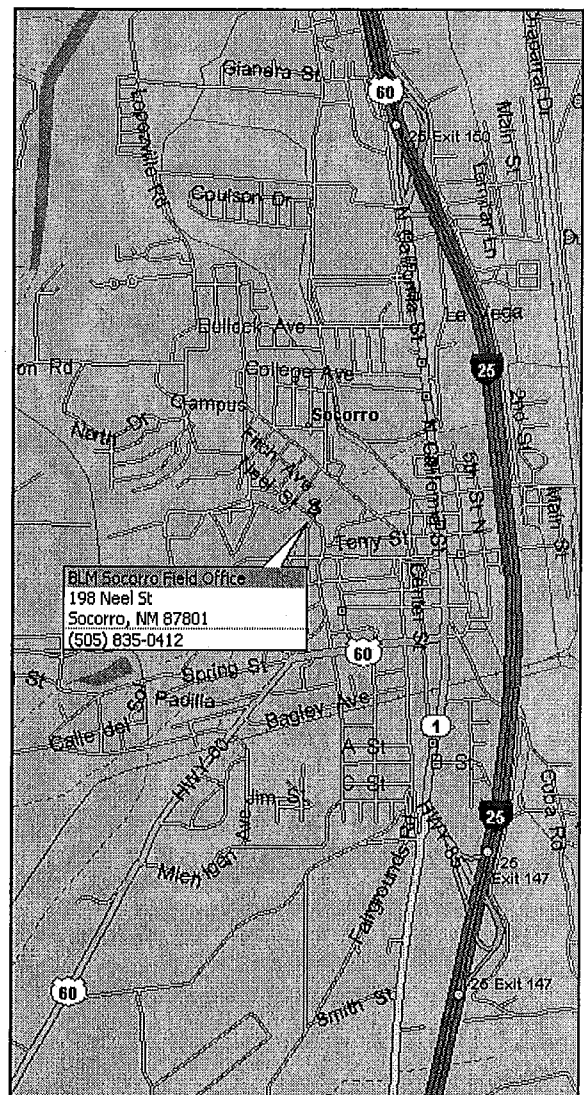
***Last date for contributions to  
NewsMAC 2003 (1) will be  
December 13, 2002.***

## ***Next NMAC Meeting Will Be In the BLM's Socorro Field Office On Nov. 9, 2002 at 10:00 am***

Brenda Wilkinson and Meade Kemrer

The next NMAC meeting will be held on Saturday November 9, 2002 at 10:00 am in the Bureau of Land Management Socorro Field Office conference

(Continued on page 3)





# Calendar

## NMAC

- Oct 10-12 **BLM/NMAC Dineta Workshop** – cancelled due to lack of interest.
- Nov 9 **NMAC General Membership Meeting** – at the BLM Socorro Field Office. Info: see page 1.
- BLM/NMAC Mimbres Workshop** – date and location t.b.a. Info: John Torres < jtorres@miacalab.org >.

## Other

- Oct 4-5 **2002 New Mexico Archeology Fair** – info: see page 21.  
Silver City
- Oct 4-5 **Gender and Archaeology Conference** – at Sonoma State University (50 mi. north of San Francisco). Info: < www.geocities.com/gender\_conference/home.html >.  
Rohnert Park CA
- Oct 15-17 **Archaeological Law Enforcement (ARPA) Training Class** – presented by Archaeological Resource Investigations and hosted by the NM State Historic Preservation Division. Training on all aspects of the investigation and prosecution of archaeological crimes. Instructors are recognized national experts in ARPA law enforcement. Fee: \$250.00. Info: Mr. Martin McAllister, 4815 Larch Lane, Missoula, MT 59802; (406) 728-7195; < ari@bigsky.net >.  
Albuquerque
- Oct 16-19 **Chaco Synthesis Project Conference** – UNM campus. Invited attendance through the 18th; open to all interested parties on the 19th. Info: see page 8; < www.srifoundation.org >.  
Albuquerque
- Oct 18-19 **12th Mogollon Archaeology Conference, Biennial Meeting** – contact Terry Moody or William Walker at Department of Sociology and Anthropology, Box 3BV, New Mexico State University, Las Cruces, NM 88003; (505) 646-2148, (505) 646.7006; < temoody@nmsu.edu >, < wi-walker@nmsu.edu >.  
Las Cruces
- Oct 24-27 **ACRA 2002 Annual Conference** – info: < www.acra-crm.org/conference.html >. Register online for the conference and for the hotel at < www.acra-crm.org/conference.html#anchor1539845 >.  
Savannah GA
- Nov 1-2 **Arizona Archaeological Council Fall 2002 Meeting and 25th Anniversary Conference** – at the Pueblo Grande Museum. "Focus on the current state of Arizona archaeology, and a look back at our discipline over the last quarter-century. This will include a retrospective with presentations by some of the original founding members of the AAC, who are in a unique position to comment on our evolution as an organization and a profession." Info: John Jacobbe < jacobbe@stantec.com >; < www.arizonaarchcouncil.org/ >.  
Phoenix AZ
- Nov 2 **Get to Know Salmon Ruins** – free, one-hour orientation tours at Salmon Museum open to the public. Starting at 2 pm. To reserve a slot on the first tour, to contribute money toward the Salmon matching fund, or to volunteer for the curation effort, please call Pam Grosnell at 505-632-2013 or Paul Reed at 505-632-0657. Info: see page 21.  
Bloomfield

Calendar continued on page 18.

## NEW MEXICO ARCHEOLOGICAL COUNCIL

P.O. Box 25691  
Albuquerque NM 87125

### Web Site

< WWW.NMACWEB.ORG/ >  
[COMING SOON]

### NewsGroup

< NMAC-L@LINUX08.UNM.EDU >

## 2002 OFFICERS

**President – MIKE BREMER**  
(505) 438-7846

< MBREMER@FS.FED.US >

**President-elect – LARRY BAKER**  
(505) 632-2013

< SALMONRUIN@OUTERBOUNDS.NET >

**Vice President – JOHN TORRES**  
(505) 476-1261

< JTORRES@MIACLAB.ORG >

**Treasurer – BILL DOLEMAN**  
(505) 277-5853

< WDOLEMAN@UNM.EDU >

**Secretary – KATHY ROXLAU**  
(505) 247-4933

< ROXLAUK@TTNUS.COM >

**Editor – ALAN SHALETTE**  
(505) 291-9653

< ALSHAL@AOL.COM >

## COMMITTEES

**Education – CHUCK HANNAFORD**  
(505) 827-6343

< CHANNAFORD@LVR.STATE.NM.US >

**Grants – TIM SEAMAN**  
(505) 827-6347 x7505

< SEAMAN@ARMS.STATE.NM.US >

**Legislative – OPEN**

**Publications – OPEN**

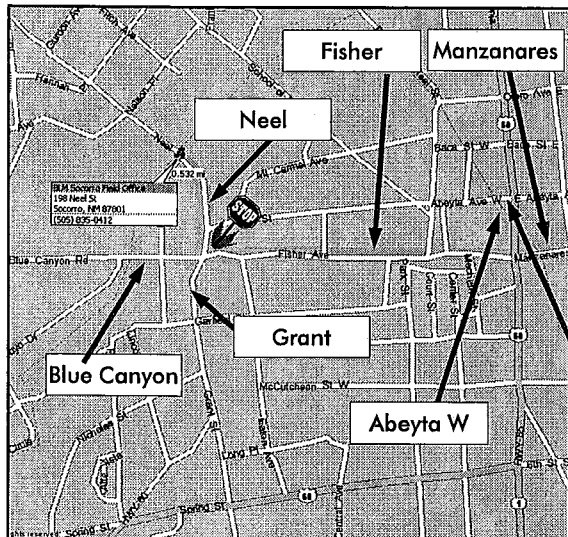


room.

Afternoon trips include two interesting nearby sites. Both are only a few minutes from town. One is a rock art locale. The other is an entrada-aged Piro pueblo currently undergoing excavation.

The Socorro Springs Brewing Company is prepared to take our group for lunch. They offer a selection of high quality meals for around \$6 including calzones, pizzas (wood oven baked) sandwiches and salads in the beautifully restored Baca Mercantile building.

Route 60 (California Avenue) is the Main Street that you will be driving on when you exit from I-25 (Exit 150 from the north or Exit 147 from the south).



Turn west on Manzanaras Street, which will turn into Fisher Street as you pass through the plaza.

Proceed to the 4-way stop sign, turn right on Neel Street and proceed a few hundred feet. The BLM office is on your right.

Socorro is equidistant from Santa Fe and Las Cruces. We hope that the meeting will include more of our colleagues from the state. Non-members are welcome.

For additional information about the meeting, contact Brenda at (505)838-1276, <brenda\_wilkinson@nm.blm.gov> or Meade at (505) 522-7614, <mkemrer@zianet.com>.

For more information on the Socorro Springs Brewing Company menu and location (115 Abeyta Avenue W), (505) 838-0650, check out <www.nmt.edu/~bengland/>.



## Secretary's Report

Kathy Roxlau

### Minutes of NMAC Executive Committee Meeting Aug. 25, 2002

UNM, Office of Contract Archaeology

In attendance: Mike Bremer, John Torres, Alan Shalette, Bill Doleman, Kathy Roxlau, Tim Seaman, and Dave Eck

The meeting was called to order at 1 pm and the agenda was accepted. The minutes from the 7/28/02 executive committee meeting were accepted.

### Grants Committee Report

Tim is still working with Jun-el to get all the records together for the past couple of years and figure out answers to many questions (see Attachment 1). He has developed a schedule for next years grants and will be assembling a selection committee at the end of this year. A motion was made by Mike to authorize \$1,000 for next years grants – Alan seconded. Motion was passed unanimously. Tim will develop before the end of the year the conditions under which someone will be awarded a grant, such as commitments to provide a write-up of the research for *NewsMAC* and giving a presentation to a general membership meeting. Tim reported that for this years grants, they will be paying University of Arizona directly for Ron Field's AMS date.



## Secretary's Report

### Education Committee Report

The education committee is very inactive. Mike and Chuck will meet to discuss ways of advertising the speaker's bureau. Alan suggested a couple of ideas, including applying for HPD grants and soliciting money from federal agencies to support the bureau and advertising. Mike or Chuck will contact Carol Ellick for advice.

### Legislative Committee Report

Dave Phillips is unable to chair this committee. Dave Eck has a conflict of interest due to his position with the State. Mike will speak with Jeremy Kulischek about chairing this committee. We still want to send a questionnaire to the major candidates (governor, land commissioner, attorney general) to find out their positions regarding historic preservation. The results would be provided to the Journal and the Santa Fe New Mexican, and published in *NewsMAC*. NMAC sent a letter supporting the Galisteo Basin initiative – the next step is a hearing in Washington. Santa Fe County decided to buy the Miller property – they need \$750,000. They are working out the money situation now – private donations total \$8,000, the Archaeological Conservancy is matching with \$8,000, county has to come up with the rest.

### Publications Committee Report

No sales were made at Pecos because there was no one to "man" the sales table. There is still the question regarding advertising the publications in other journals. Other possibilities include letters to Anthropology Departments, notices in *NewsMAC*, flyers (one has been drafted, it needs revising). Alan has a publicity list and June-el is going through the AAA guide to get more addresses. The question of whether we should keep printing hardcopies of the publications or switch to CDs only was discussed. No decision was made.

### Treasurer's Report

He and Alan are working on switching the books over to new Quiken accounts.

### NewsMAC

Alan is continuing to contact people about those issues still missing from the archive. He has made electronic scans of those he has and they are saved at TIF files for now. It was discussed how best to make the issues available on the website. John is authorized to get server provider quotes to move our server off of unm.edu. He will work with Todd Van Pool to bring the site over once we

have a new provided in place. The next *NewsMAC* comes out the end of September.

### Membership

Membership is pitiful. No other discussion was made.



Just to prove that I really did read Mike's presidential message in the latest [2002(3)] *NewsMAC*...

It's not necessary for lots of members to contact SAA about an issue (in this case, the need for guidance on how to establish the monetary values in ARPA damage cases) in order to get us to deal with it. We're not like Congress where they keep score sheets on the numbers of constituent contacts about particular issues in order to decide if the issue is important. Any single member of SAA (and you ARE all members of SAA, AREN'T you??) can bring an issue to the Board and get it considered and responded to.

As it happens, this particular issue has already been raised in the Government Affairs Committee and is on the agenda for discussion at the Fall Board meeting. But please, everyone, feel free to bring any issue that concerns you to me or to anyone else on the Board. You don't need a critical mass of contacts or a big grassroots effort. Just call or write.



Lynne Sebastian

President

Society for American Archaeology

## Secretary's Report

### **Workshop/Conference Committee**

The Dinetah conference is set for October 10-12. Everything is all set up for the instructors. John is still working on a Mimbres workshop. The lithic conference is slated for Spring 2003.

### **NMAF**

Things are on hold until the accounting is all in order, because we need a three year budget that is based on past expenses. We can start considering what portions of NMAC will go where. Bill made a motion that he and Alan develop an initial proposal for what will go under NMAC and NMAF. Mike seconded. The motion unanimously passed.

### **HPD Fund Raising**

Jan Biella and Glenna Dean have asked NMAC to take on fund raising for Historic Preservation Week and the Archaeology Fair. Discussion centered around issues of taxes, responsibility, being fiscal agents. After much discussion, Bill made a motion: NMAC believes that, at this time, it would not be feasible for NMAC to take on fundraising responsibilities for Historic Preservation Week or Archaeology Fair. This is due to lack of personnel and unresolved issues, including tax implications and the lack of a formalized agreement delineating the responsibilities of all involved parties. Alan seconded the motion. The motion passed unanimously, with Tim abstaining. It was decided that more discussion is needed regarding our ability to continue to handle money for the division.

### **Elections 2003**

We need to have someone commit to being the committee chair.

### **Next Meeting**

The next meeting, which is a general membership meeting, is slated for November 9 in Socorro. Mike will work with Meade Kemrer on the location. The meeting was adjourned at 3 pm.

Respectfully submitted, Kathy Roxlau

### **Minutes of NMAC Executive Committee Meeting Jul. 28, 2002**

Santa Fe National Forest Supervisor's Office

In attendance: Mike Bremer, Kathy Roxlau, and Alan Shalette

The meeting was called to order at 10 am and

the agenda was accepted. The minutes from the 4/20/02 general membership meeting were accepted.

### **Grants Committee Report**

Mike will work with Tim Seaman and June-el to figure out exactly where we are on the Grants for past years and this year; specifically, which grantees owe NMAC an article for *NewsMAC* or a presentation at a general membership meeting, where the money stands for each grant awarded, and when to get announcements out for the next round of grants.

### **Education Committee Report**

Mike will speak with Chuck and Glenna regarding advertising the speakers bureau so it will get used more.

### **Legislative Committee Report**

Mike made a motion that NMAC send a letter of support for the Galisteo Basin initiative (Senate Bill 1093). Alan seconded. Alan did voice concerns about the federal government sticking their nose into resources that are located on private lands. Mike agreed that this was an issue to be watched as the bill goes through various reiterations. Motion passed unanimously. Mike also motioned to send a letter to Santa Fe County supporting their idea to purchase a large Coalition site for open space. Motion was seconded by Alan. Motion passed unanimously. Mike will remind Dave Phillips and Dave Eck that they need to revise the candidate questionnaires and send them out to those running for election in November. Mike will also check with Brad Vierra about the State Lands Advisory Committee situation regarding archaeological site protection on Trust lands. Alan mentioned that this position should be a part of our by-laws, and that the appointment should be made officially just as committee members are officially appointed.

### **Publications Committee Report**

A numbers of issues were discussed regarding publications. One was to officially recognize who the chairman of this committee is. Also, a while back, Alan and June-el started advertisements for the publications, but then it fell through. This needs to be started again to get the word out that the publications are available. Alan noted that our listing in Books in Print needs to be revised - Mike will ask June-el if she can do this.

## Secretary's Report

### **Treasurer's Report**

Alan noted that Bill is busy converting the old accounts to the new Quicken 2001 version. This will make financial reports much easier. A year end financial report is needed to publish in *NewsMAC* once a year – either at the end of the year or the beginning of the next year. Also, in order to set up NMAF, we have to be able to make projections, and projections are based on past budgets and expenditures. It was also noted that it will soon be time to come up with the next year's budgets, and the financial reports will help with that.

**Donations:** It was decided that Mike would contact Judy Reed to determine if there was something in particular that NMAC could pay for at the Pecos Conference, instead of just sending them a check for \$500. This is necessary, especially when it comes to setting up NMAF – we want to make sure the money is going toward something concrete, not just used for miscellaneous expenditures. Mike will also circulate a vote-by-email to all executive committee members regarding the motion to send a donation of \$500 to SWA, Inc. (Brian Kenny's information resource).

### **NewsMAC**

Alan reported that the address list for *NewsMAC* has been cleaned – doubles removed and delinquent members removed. In the effort to build a complete set of *NewsMACs*, there are still some missing, particularly 1983 and 1986. Alan is continuing to send out inquiries. Alan is making hardcopies for Lou to keep in the archives, and he is scanning everything onto CD-ROMs as TIF files.

### **Membership**

Distribution of NMAC materials (mailing list and handbook) to members was discussed. Alan will send out an email to executive committee members to see what everyone prefers. It was suggested that all new members receive both the mailing list and handbook, and that continuing members only receive occasional mailing lists and only receive the handbook when the by-laws or code of ethics change.

### **Workshop/Conference Committee**

No information.

### **Next Meeting**

There will be an executive committee meeting on

August 25 at 1 pm at UNM's Office of Contract Archaeology in Albuquerque. Also, Mike would like to have a general membership meeting in Socorro in September – this will be discussed at the executive committee meeting at the end of August. The meeting was adjourned at 12 noon.

Respectfully submitted, Kathy Roxlau

## **Minutes of NMAC General Membership Meeting Apr. 20, 2002**

BLM Albuquerque Field Office

In attendance: Mike Bremer, June-el Piper, John Torres, Bill Doleman, Kathy Roxlau, and multiple general members. Alan Shalette arrived after the business meeting.

The meeting was called to order at 10 am and the agenda was accepted. The minutes from the 3/09/02 executive committee meeting were accepted.

### **Grants Committee Report**

June-el distributed a summary of the 2002 grant proposals – the summary indicates which proposals were granted (see Attachment #1). Three proposals were awarded: \$450 to Kristen Langenfeld and Paul Nugent for ICP analysis of Gobernador Polychrome; \$500 to Todd Howell for obsidian sourcing; and \$595 to Ron Fields for AMS dating of two atlatls. Usually, approximately \$1000 total is awarded each year. This year, because Jim Quaranta's project was not completed, we had an extra \$400 available. June-el has prepared a first draft of guidelines for operating the grants program (Attachment #1), which was distributed. Sadly, June-el has decided to resign from chairmanship of the grants program. Volunteers were called for, and **Tim Seaman volunteered to take June-el's position.** June-el reported that Jan.1 to April 15 is the busy time for the program, and that her efforts lately have been to contact previous awardees about doing articles for *NewsMAC* and giving presentations at general membership meetings.

### **Education Committee Report**

Chuck reported that three education activities have been done this year, all by him. The education bureau has 15 people in it. Discussion turned to how to increase the number of requests for speakers. Chuck has sent the list to Carol Ellick of Project Archaeology. Most of the requests come from schools. Glenna Dean has developed a brochure mock-up, but hasn't printed any for review yet. Brad Vierra suggested developing official

## Secretary's Report

NMAC posters to be placed around the state. Lynne Sebastian suggested concentrating on existing opportunities that are already going on. There is also a need for more speakers. Mike stated that he would put out a general request for new speakers to beef up the speakers list. It was decided to keep the list internal and not put it on the NMAC website.

### Legislative Committee Report

Lynne Sebastian reported that SAA Governmental Affairs committee is striving for a legislative agenda that is more proactive than reactive. One example is trying to get an archaeologist appointed to the slot opening up this summer on the ACHP. Also, SAA has inserted language into the current farm bill to promote archaeological site preservation by paying farmers to not farm over important sites. On the NAGPRA side of things, the feds are repatriating Spirit Cave Man, and no decision has been made on the Kennewick remains. There is an important site in Texas that is going to be impacted by the ACOE – 79 early Archaic burials have been found so far. ACOE apparently didn't follow the rules and now it's a public relations nightmare. SAA is now a consulting party on the project. Feds are also considering selling a National Historic Landmark (Martin's Cove site) to the LDS Church because it is a TCP for them. SAA holds that this is a bad idea because it opens the door for tribes to demand the right to buy their own TCPs. Lynne has resigned from the NMAC Legislative committee; Dave Phillips and Dave Eck agreed to work on the committee. Discussions went to whether NMAC has a role in the election of state officials. Dave Phillips remembers sending out questionnaires to candidates in the past. Dave and Dave Eck volunteered to recruit a new chairperson for the committee and to revise the questionnaires for the next election. They will then roll up the results and send them to the newspapers. They will work with Alan Shalette on the questionnaire packages.

### Publications Committee Report

Publication #1 has been reprinted – it is available for \$25 + \$4.50 for shipping and handling. The other volumes are also available. Per previous Executive Committee decisions, the ceramics volume is dead. Carol Ellick requested that NMAC pay for 200 educational magnets (cost = \$75-100) for her to distribute to kids at the Albuquerque Archaeology Days. Dave Phillips moved to fund it; Bill Doleman seconded. Motion passed unanimously. It was noted that new contact info needs to be put on the magnets. Mike said he would work with June-el on getting the infor-

mation updated and the magnets made.

### Treasurer's Report

Bill reported that Alan has acquired all the forms and instructions to split NMAF from NMAC. The process requires that the books be completely in order and projections made; Bill and Alan are working on this. Right now NMAC is \$332.15 on the positive side for the year.

### NewsMAC

Mike asked that if anyone is getting double copies of the newsletter to let NMAC know.

### Membership

Mike discussed the downtrend in membership and the need to get more people to join, especially students. The problem seems to be that they don't see an advantage to joining. Benefits currently include publications, grants, NMAC-L, and workshops. Ideas that were tossed around included (1) offering networking opportunities; (2) offering scholarships or research paper prizes; and (3) adding NMAC membership as a requirement for those wanting grants, scholarships, and prizes, and for those wanting to attend workshops or other field opportunities. Tim Seaman noted that everything is very Alb/Santa Fe oriented – we need to do outreach to other parts of the state. Lynne and Glenna agreed to be a part of a membership committee, but would not chair it.

### Workshop/Conference Committee

Mimbres and Dinetah workshops will again be offered in the early to late Fall. Discussions have been started to organize a lithics workshop.

### ARMS Amendments

Tim Seaman passed around copies of the proposed amendments to the legislation covering ARMS and a schedule of the public hearings that will be held to discuss the changes (see Attachment #2). Increases in the fees are due to uncollectable dues; a monthly billing system which means more administrative costs; and maintenance of the new GIS system, which the NMSH'TD, ACOE, and BLM helped fund development of. The new rates would be effective in September. The rates would double, though there would be discounts for those who use automated tools for registering their work. They are also trying to increase the cost of cooperative agreements with agencies. Invoices would be sent monthly and would have a 45-day payment term. It was suggested that NMAC attend the hearings in support of the changes.

The meeting was adjourned at 4 p.m.

Respectfully submitted, Kathy Roxlau



## Current Research

### ***The Chaco Synthesis Project***

Lynne Sebastian

< lsebastian@srifoundation.org >

12-Sep-2002

The SRI Foundation, the National Park Service, and the University of Colorado invite you to participate in the Chaco Synthesis Project Conference. For more than a century, archaeologists have carried out excavations, surveys, and environmental and collections research involving sites and materials from Chaco Canyon and related sites across a broad area of the American Southwest. Large-scale investigations were carried out in the canyon between 1971 and 1979 by a joint National Park Service (NPS) and University of New Mexico (UNM) project, and since 1979 extensive analyses and numerous publications have been completed.

In the late 1990s, NPS approached Steve Lekson of the University of Colorado Museum and asked him to organize an effort to summarize and synthesize the NPS/UNM Chaco Project results. Lekson organized a series of five topical working conferences on architecture, the organization of production, social and political organization, economy and ecology, and the Chaco regional system. The results of these conferences have been and are being published in various venues, including (ref for Judge and Cordell volume), published by the NMAC.

The final event in the Chaco Synthesis Project will be a working conference to be held on the UNM campus in Albuquerque on October 16-19, 2002. The organizers of the five topical conferences and a small number of other scholars will meet to examine change and stability over time in a wide variety of material, environmental, and organizational aspects of the Chaco world.

The last day of the conference, Saturday, October 19, will be an open forum; Southwestern archaeologists, Chaco specialists, Native Americans, students, and anyone else interested in Chaco are encouraged to attend. The conferees will discuss their work and present the ideas developed during the previous three days. Then the floor will be opened for forum participants to present their own views, offer information, ask questions, comment on the work of the conferees, etc. The dis-

cussions and debate during the forum will be recorded and used to broaden and enrich the results of the Synthesis Project. The forum will be held from 10:00 AM to 4:00 PM in Woodward Hall, Room 101 on the UNM campus (see map link on the website noted below).

Anyone interested in participating in the forum should go to the conference website at < [www.srifoundation.org](http://www.srifoundation.org) > then click on "Chaco Synthesis Project." The site has additional information about the October conference as well as links to the following materials that will serve as the basis of the discussions at the working conference.

- A bibliography of publications from the topical conferences
- A Giant Timeline arraying a great variety of data along a single time scale; this timeline will serve as the organizing principle for the working conference
- Draft papers by the organizers of the five previous topical conferences, describing and analyzing the temporal trends in their data.
- Additional materials and web links to provide more background for our discussions and to serve as a resource for those interested in things Chacoan.

Folks planning to attend the forum are encouraged to review as much of this material as possible. Anyone who wishes to submit other material and web links for consideration for posting on this page, please send the information to Lynne Sebastian at < [lsebastian@srifoundation.org](mailto:lsebastian@srifoundation.org) >

Bill Lipe and Ben Nelson will serve as the "Great Synthesizers" for this project. They will use the Giant Timeline and the five draft papers to prepare synthetic comments that will help to guide the conferees' discussions in October. Those discussions will focus on identifying the Big Events and Big Trends for Chaco as a whole. What are they? When were they? And most important, What do these temporal patterns mean?

The conference is expected to yield a wide variety of products – a two-volume scholarly publication and a popular book by Brian Fagan are already in the planning stages as are a video and web-based educational materials

In an effort to provide a richer, more complete

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understanding of Chaco, we have been in contact with the tribal consultation committee that advises Chaco Culture National Historical Park about Native American issues. We have asked the committee if they would be interested in working with us on a parallel perspectives component of the Chaco Synthesis Project that would more fully convey the multiple perspectives of Native Americans on Chaco. Information about this effort will be posted on the website as it develops

### *Talking About the Sacred Ground*

Marlene Arviso-Kakos, Elaine Cleveland, Douglas D. Dykeman,  
and Antoinette Kurley-Begay

What if present day Navajos have firsthand knowledge about their homeland in Diné'tah and can share this information with anthropologists and future generations of Navajos? A few years ago that very question was posed at the Farmington office of the Navajo Nation Archaeology Department. And though the question may seem far-fetched, Navajo use of the area is well documented into the 20th century and Navajo families still reside in the vicinity of Gobernador, Blanco, and Largo washes – the heart of Diné'tah. What stories of Diné'tah do these Navajos have to tell? Three Navajo women; Marlene Arviso-Kakos, Elaine Cleveland, and Antoinette Kurley-Begay; decided to find out what the people know, directly or indirectly, of Diné'tah.

We began the research by discussing the issue with relatives and acquaintances for the purpose of getting leads on who may have knowledge of the region. Ultimately, the contacts narrowed to several individuals who could recall stories passed down by family members. To get a broader perspective on the subject we interviewed chanters (Hataa'ii) about references to Diné'tah in oral history and ceremony.

After initial interviews with informants we recognized certain problems engaging the informants in productive conversation. For example, Navajo tradition permits story telling only in the winter months of the year. Consequently, the interviews and fieldwork regarding Diné'tah had to be scheduled in the proper season for traditional story telling. Another solution was to visit Diné'tah with the informants and physically locate features on the

landscape that may have had significance for the traditional stories. Providing this spatial context proved to be an important factor for adding details and richness to the accounts of the past. Ultimately, we were able to compile a kind of gazetteer that cross-references the Diné'tah landscape with aspects of the oral tradition.

Of the information collected thus far, the story of "The Shattered Hoof" and references to corn and Navajo culture are good examples where tradition has relevance for multidisciplinary research. The story of the shattered hooves is told as part of family oral history. It relates the adventures of a Navajo girl held captive by Utes in the early 1700s. The girl is in the charge of a Ute woman, who befriends her and eventually arranges for her escape. She provides two horses, one black and one white, for the escape; and the young Navajo astride the black horse flees to the south. Upon discovery of her disappearance the Utes give chase. While riding through mountains and wilderness she encounters a Spanish or Mexican (Naakaii) camp, and these people also take up the chase. The girl rides the black horse until it collapses, or it is shot out from under her. Her journey continues south on the white horse, but its hooves crack on the rocky terrain and the mount comes up lame in the vicinity of Gobernador Knob (Ch'ool'í'i). To protect the saddle she hides it in a canyon and covers it with cedar branches before completing the journey on foot.

We suggest that there are many aspects of the story that may prove interesting for archaeologists. The woman flees to the south, which suggests that Ute territory is to the north of Diné'tah. This correlates well with archaeological and historical distributions of Utes and Navajos. The story hints at unstable relations between Navajos, Utes, and Spanish. Embodied by the chase, the story seems to on the one hand emphasize conflicts between the cultural groups, but on the other hand the Ute woman performed the gracious act of giving the young Navajo freedom. The story may also reflect cultural values for preserving valuable items; in this case the saddle is hidden and protected from the elements. Some saddles are never retrieved as demonstrated by rare but well publicized archaeological discoveries of old saddles in rock shelters of Diné'tah.

Interviews with Hataa'ii indicated that a spiral cornfield once occupied the broad valley below the sacred place of Gobernador knob. Hataa'ii



## Current Research

sometimes identify spiral designs on the pottery and rock art of Dinétah as representative of the spiral cornfield. Navajo tradition associated with the planting of spiral fields is well documented by Hill (1938) and the association of a more or less specific place (in Dinétah) used for growing corn correlates well with Spanish records of Navajo cornfields in the early 1700s. In particular Roque Madrid's 1705 punitive expedition destroyed a number of cornfields in the region and likely passed by Gobernador Knob on the way to battle the Navajo at Magdalena Butte (Hendricks and Wilson 1996).

Another Hataa'ii describes the entirety of Gobernador wash as a cornstalk, which demonstrates the association of Dinétah and corn in dramatic fashion (Figure 1). Gobernador knob, the place of the spiral cornfield, represents the tassels of the stalk. The main stalk is Gobernador wash

itself and the many small tributaries are the leaves of the corn plant. The cornstalk is firmly rooted at the confluence of the wash with the San Juan River. This information obtained from Hataa'ii emphasizes the close association between Navajo corn and Dinétah, which is physically evident on the landscape.

We suggest that the association of places on the landscape with Navajo tradition represents potentially important links between traditional history and the archaeology of Dinétah. As a consequence, Lenora Tsosie was recently added to the group, to design a GIS suitable for linking the content of oral tradition to the landscape. The GIS work is intended to provide a clearer picture of how traditional stories map on the landscape of Dinétah. GIS appears to be the ideal tool to organize the data and thereby make such correlations obvious for multidisciplinary research.

Research into stories of Dinétah continues and has been partly supported by the Navajo Nation

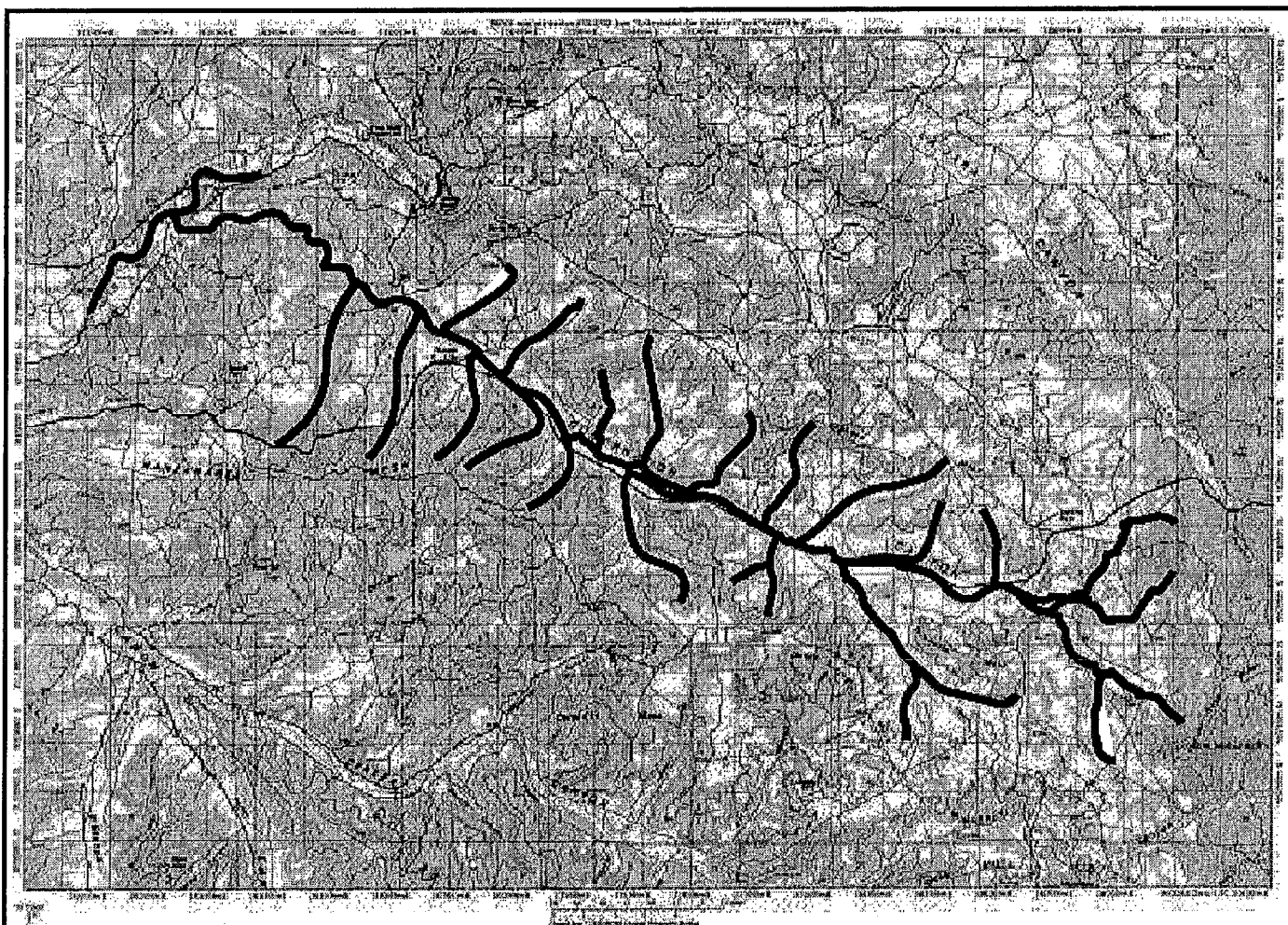


Figure 1. According to a Navajo chanter the drainage pattern of Gobernador Wash represents a cornstalk.

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Archaeology Department. The contribution of countless hours of volunteer time on the part of the research staff, informants, family, and friends has enabled reporting of preliminary results of the work. To date this has provided a glimpse of a potentially vast pool of traditional resources relating to Dinétah.

Marlene Arviso-Kakos, Elaine Cleveland, Douglas D. Dykeman, and Antoinette Kurley-Begay can be reached at the Navajo Nation Archaeology Department Farmington Office, 717 W. Animas St., Farmington, NM 87401. (505) 327-6115, <fmtnnad@cptnet.com >.

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### **GPS with WAAS: Affordable DGPS Is Here**

Dave Phillips, SWCA Environmental Consultants

In previous issues of *NewsMAC*, I looked at the accuracy of handheld Global Positioning System (GPS) units before and after Selective Availability (deliberately introduced error) was turned off. Today, many archaeologists use handheld GPS units costing less than \$200 to obtain readings that are usually within 10 m of true horizontal position. Occasionally, however, the error is greater. Even with improving technology, uncorrected readings from handheld units will probably never be more accurate than they are now, due to atmospheric distortion and other factors that limit the accuracy of signals from orbiting satellites.

More accurate readings require a "base station" GPS receiver whose exact position is known. The base station compares its GPS-derived position with its known position, calculates the error in the GPS signals, and provide a correction for simultaneous GPS readings taken nearby. This approach is known as differential correction, and a GPS unit

that can take advantage of base station data is a "differential GPS" or DGPS unit.

DGPS has not come cheap, however. Until recently the most affordable DGPS strategy has been post-processing, where the GPS unit stores raw data that is later uploaded to a computer. Software on the computer captures base station data (from a private source or the Internet) and uses those data to provide corrected readings. DGPS units and software needed for post-processing start more than \$3,000 but the resulting readings are probably consistently within 5 meters of true horizontal position. In a future issue I hope to report on an actual test of the accuracy gain from post-processing.

Greater accuracy can also be obtained by using DGPS units that receive "real-time" correction data from base stations, via radio signals. Backpack-type GPS units providing real-time differential correction can yield accuracy in the 1 meter range but currently cost more than \$10,000 and, in New Mexico, require a separate base station GPS unit or subscription to a correction service. Even more accurate systems are available, but are so expensive only professional surveyors use them.

For most archaeologists, DGPS has been beyond personal reach. Until now, that is. The Federal Aviation Administration is developing GPS navigation for aircraft, so pilots can fly precise routes (including during take-off and landing) in the absence of traditional navigation aids. The error from uncorrected GPS signals is a problem, however – imagine being more than 10 meters off as you try to land on an unlighted dirt airstrip at dusk. Moreover, the vertical error of uncorrected GPS readings has always been worse than the horizontal error – not a problem on an archaeological survey, but an obvious concern if you're flying an airplane. The FAA's solution, still being put into place, is the "Wide Area Augmentation System" or WAAS – a series of GPS base stations across the country, which broadcast corrections to satellites, which re-broadcast the corrections to GPS units. WAAS promises to reduce the error in most GPS readings to about 3 meters. To date, only two WAAS satellites are in orbit near the United States, one over the Atlantic coast and the other over the Pacific coast, so parts of the country are not yet able to take advantage of WAAS. Eventually, WAAS or similar systems will cover the globe.

For archaeologists, WAAS is news only if it's portable and affordable. On both counts, the news

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is good.

My favorite manufacturer, Garmin, has WAAS-enabled GPS units on the market starting at six ounces and \$170 (the eTrex Venture). I conducted the following test with the eTrex Legend, but GPS accuracy appears to be identical for the several WAAS-enabled eTrex models.

Despite the limited coverage at present, a WAAS satellite signal can be obtained in Albuquerque and I have also picked one up as far north as Chama (albeit with spotty reception, probably due to mountains) and west to St. Johns, Arizona. The two current satellites are in an equatorial orbit so parts of New Mexico south of I-40 should be able to receive the signal if the lower part of the southern sky isn't obscured. For most if not all of New Mexico, buying a WAAS-enabled GPS unit already makes sense. If you do purchase an eTrex, it's important to enable the WAAS function. Also, the first time you use the unit in a given region, it may take 10 to 20 minutes for WAAS to take effect. After that, however, the unit is able to obtain and apply the satellite differential correction data in a couple of minutes.

I tested the accuracy of WAAS-corrected readings by taking 25 readings from the same point in Albuquerque. The readings were taken over a number of days, during daytime hours, at least an hour apart from each other. Each time, the GPS was left in place long enough (about 2 minutes) to obtain differential corrections for all of the GPS satellite signals. The test assumes that the mean easting and northing derived from the sample is the true position. For the 25 readings the mean error in position was 2.2 m, the sample standard deviation was 2.6 m, and the maximum error was 4.8 m. Clearly, WAAS is superior to uncorrected GPS readings. When only point readings are needed, WAAS may be as good as, or better than, post-processing, despite costing one-tenth as much.

For more information on WAAS, visit the FAA's web site (< <http://gps.faa.gov/Programs/WAAS/waas.htm> >) or commercial GPS sites (e.g., < [www.garmin.com](http://www.garmin.com) > or < [www.trimble.com](http://www.trimble.com) >).

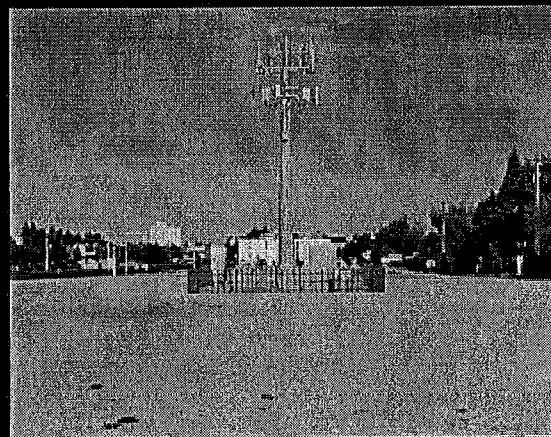
### ***It's Better Than Hiring a Hot-air Balloon***

Carol J. Condie < [cjcondie@gbonline.com](mailto:cjcondie@gbonline.com) >

## CELL-PHONE TOWER PHOTO-SIMULATIONS



BEFORE PHOTO-SIMULATION



AFTER PHOTO-SIMULATION

There is a less expensive way to indicate the visual impact a cell tower will have on the view shed of a historic property than tethering a hot-air balloon at the future cell tower site.

Nathan Carlisle, a graphic designer and 3d modeler/ animator, can take pictures of the cell tower site and impose a simulated 3d scaled model cell tower viewed from all four cardinal directions (or, presumably, non-cardinal directions if you want).

His prices start at \$1000 per site in the Albuquerque/Santa Fe area. If you want him to travel farther afield, he will probably need to work up a cost estimate for the specific location.

You can reach him at (505) 255-5809 or by e-mail at < [yfiles18@hotmail.com](mailto:yfiles18@hotmail.com) >.

### ***Kids, Kivas, and Smiling Faces: A Telling Story***

Forrest Fenn < [ffenn@EARTHLINK.NET](mailto:ffenn@EARTHLINK.NET) >  
[via nmac-l] 23-Jul-02

Tents and blowing laundry now punctuate the

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countryside around San Lazaro Pueblo where only yesterday the cholla and kosha weeds were king. Twenty-one under-appraised teens, under the tutelage of a professional archaeologist, picked up tools that were especially designed for manual labor and started excavating at the top of a large trash mound on the east side of the historic buildings (after 1540 and before 1680.) Each student is paid \$5.75 an hour thanks in a large part to Mike Kammerer and his Code of the West Foundation.

The "archaeologists" soon uncovered the walls of three hitherto unknown prehistoric rooms that were hiding beneath the rubble. Each bucket of dirt was carefully screened and many artifacts were discovered. They include a red fibrolite axe, three decorated pottery pipes, about twenty-five arrowheads, some iron and copper fragments, pieces of Ming Dynasty porcelain, majolica sherds, eight human effigies shaped from pottery pieces, a beautiful mother of pearl ear ring that is double drilled, endless gaming pieces, some glass trade beads, two wonderful scrapers made from alibates jasper from north Texas, some bone awls, shell pendants, and a host of other objects that made history and archaeology spring alive. It was obvious in the dancing faces of these young men and women. One fourteen year old said, "Well I'll be darned, the Spanish really were here." Field work in archaeology brings rewards from many directions and has far reaching effects on young minds.

Meanwhile, some of the other students were in a newly excavated kiva, which abuts the north building in the historic plaza. It measures eight feet deep and nineteen feet-six inches across, and the cedar posts that once held the roof are still standing straight and strong. A large stone altar, perfectly preserved, holds court near the east wall, adjacent to the air vent. Eagle-eyed PJ spotted green paint near the bottom of the wall so we began to very carefully trowel away at the eighth-inch layers of smoke smudged adobe that were falling from the wall, but were trying to hold on. Soon the workers had uncovered red and white geometric stair-stepped designs that circled around, and a beautiful white, six inch morning star that we had to remove to save. The hero of the day was pretty Perry who very painstakingly removed a couple of layers to discover what looks like a ten inch high painted shield with bright yellow horns (?) and

containing red and white colors in the decoration. Meanwhile Patrick was uncovering a black human face with sinister and foreboding eyes; the lower part of it's face still lurks under the layers. Colors of green, yellow, red, white, and black, can be seen peeking through around most of the wall. And we are paying the kids to do this?

While dark clouds gathered in the north, we quickly erected a shelter in the kiva to protect the paintings.

It was decided that Dr. Richard Blake, eleven year old dynamo Logan, and the intellectual Patrick, should remove a fourteen inch, flat rock, that was standing on edge. It was adobe plastered flush with the circular wall, and resting on the floor. We were alerted by a nearby three inch hole in the wall that seemed to open up inside and go on forever. When the rock was carefully removed a large secret chamber could be seen through the opening. The entire field school was now down the ladder and in audience, including eight adults. It got very quiet and you could feel the tension and excitement mounting.

The rectangular "vault," with black stuccoed walls is about four by five feet or so. We cannot yet see one side. The chamber is no less than a repository for what appears to be numerous wooden ceremonial dance wands, prayer sticks, and other objects of ritual. They must have been placed there after the last ceremony ended, and the stone door was set in place and disguised. Since seven peach seeds were found just inside the door we think the last usage occurred about four hundred years ago. Are any of the objects painted? Do they have feathers attached? We can see one whose head is shaped in a stair-step design, and the end of a hunting bow angles from the debris on the floor. Our flash light could not reveal the extent of the cavity.

After many photographs were made we decided it was time to notify state archaeologists and seek their advice and assistance.

On each of three walls (south, west, and north) of the kiva, and obvious for all to see, were round adobe "plugs," five inches or so in diameter. They were placed about three feet above the floor. Three students were selected to surgically remove these doors, and in each instance storage spaces more than a cubic foot in size, were revealed. Each contained exciting and mysterious artifacts that were at last exposed to the light of day after many

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years of suffering the solitude of total darkness. That thought was profoundly on our minds as thunder and lightning danced around. We don't yet know the full extent of our discovery, as we retreated to safer grounds. Some thought the lightning was an omen.

We can only imagine what wonderful stories still dwell there in silent repose. One thing for sure, we know they are meant to be told. I don't think any of us will sleep tonight.

It is three days later now, most of the artifacts have been removed, and the kids have gone. But our work is not finished. As long as there are young people at risk and in need of a gentle nudge, we will throw our lot in with them. They will not soon forget the thrill of discovery, the camaraderie, the daily lectures presented by great scholars, including the head of the chemistry department at Princeton, and important physicists? from Los Alamos. It was our thrill to watch them exchange email addresses and phone numbers as they departed. They will work together again on the final site report.

And we know there are those who will paint our efforts a villainous black and that we will suffer from the gossip around the water fountain. We think it is a small price to pay.

If anyone would like to see digital photographs of selected artifacts from the kiva chambers let me know at < ffenn@earthlink.net >. I also welcome your comments no matter what

### **Response to San Lazaro Postings**

David Zimmermann, Navajo Nation HPD

< davidz@FLAGSTAFF.AZ.US >

[via nmac-l] 24-Jul-02

I'm concerned about the recent postings on the excavations at San Lazaro. As I understand it, this is a protohistoric Kiva, but nowhere in the article on the site is there any mention of involvement in this project by members of the contemporary Pueblos who may feel affiliation with it. Were they consulted? If not why not?

Is it appropriate to post pictures of the Kiva contents on the web? I'm guessing many contemporary Puebloan people might be upset about not only the description of the excavation, but more so the posting of photographs. It seems to me that the attitude is 100% that because it's an

"abandoned" site it's not significant to living peoples, and is instead a kind of curiosity where we can uncover pictures of "human faces with sinister and foreboding eyes."

I'd like it if the popular accounts being produced here indicated if it was determined whether or not contemporary peoples had concerns regarding this project or not, if they were at all consulted.

The opinion here is my own, and does not necessarily reflect the views of the Navajo Nation.

### **Agreement With David Zimmerman**

Steve Townsend, NM SHPO-ARMS

< sgtown@ARMS.STATE.NM.US >

[via nmac-l] 24-Jul-02

David:

That was my take on the pictures too. It just about made me want to cry looking at the complete invasion of the private aspects of lives of the inhabitants of San Lazaro. I do know that the Hopi-Tewa have been to Santa Fe to see masks Mr. Fenn has previously excavated. But I think it is fairly obvious this is an operation geared toward collecting artifacts. And given the nature of the materials Mr. Fenn is in way over his head, with no apparent intention of stopping.

As with yourself, these are my opinions only and do not necessarily reflect the views of the NM State Historic preservation Division.

### **Forrest Fenn Replies**

[via nmac-l] 24-Jul-02

>>> "That was my take on the pictures too. It just about made me want to cry looking at the complete invasion of the private aspects of lives of the inhabitants of San Lazaro." <<<

In that context all excavations are an invasion into the lives of the people who lived there. It was certainly not our intention to make anyone cry. Our motive was to learn and distribute information so that the public might be better educated. That is what archaeology is all about. We are deep in the throes of a book on San Lazaro that will contain 300 color plates.

When we were excavating the kiva we thought it was prehistoric and related to some of the nearby rooms. There were historic artifacts in the fill but not on the floor. The murals were discovered days later as the walls dried and some of the



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adobe layers began to fall from the wall. It was later still that we discovered peach seeds in the storage chamber that revealed a historic connection. Native peoples were not consulted and maybe they should have been. To be candid, the thought didn't occur to us, a fact that I sincerely regret.. We have since taken steps to bring the Tewa Elders from Hano over to view the site again and consult on the kiva artifacts. If they are unhappy with us we will make appropriate remedies. Those who are offended by what I am responsible for doing should know that you may justly blame my mind, but not my heart. I am not seeking attention as Glenna and Michael suggest. If throwing me off of the list is the proper thing to do then I will be the big loser and you won't have to know about what we are doing anymore.

>>> "I do know that the Hopi-Tewa have been to Santa Fe to see masks Mr. Fenn has previously excavated. But I think it is fairly obvious this is an operation geared toward collecting artifacts. And given the nature of the materials Mr. Fenn is in way over his head, with no apparent intention of stopping." <<<

It is my belief that all excavations are geared toward collecting artifacts and that's why we screen. People would not go in museums if there were no artifacts. I offer no apologies for that. I have been in way over my head for most of my life and I offer no apologies for that either. I am sorry I offended you Mr. David Zimmerman and Mr. Steve Townsend. I will send no more kiva photographs over the over your link despite the fact that forty-six people in your chain have asked for them, most of which applauded our efforts. I accept your criticism and will try to do better in the future. I will also consult with the Tewas to see if it is proper for us to use kiva pictures in our book. We will accept their suggestions as we did with the prehistoric masks that were found several years ago.

Forrest Fenn

[via nmac-1] 26-Jul-02

Over sixty emails relating to events of recent days have come to my personal inbox. It is good that we can throw an issue on the table and let everyone beat up on it. Free exchange of ideas is what has made this country strong. Fortunately there are guys like me that can back into a spinning pro-

pellor once in a while and can still pick themselves up and be wiser for the experience. A letter is being drafted that will invite the Tewas to view the kiva murals. I have been warned that they will probably want the religious objects returned to the storage chamber and the kiva backfilled. Of course we will do as they wish. I would like to thank Dave Phillips for his wisdom and strength of character, Lynne Sebastian for being who she is and for doing what she does best, and Steve Townsend for being such a gentleman. This will be my last posting in this forum.

## **Wood Tells Nw Story Of Aztec Ruins**

*Farmington Daily Times* 05-Jul-02

AZTEC Archeologists have long known the builders of Aztec Ruins, like those in Chaco Canyon, went a considerable distance to obtain the ponderosa pine and Douglas fir used for the large ceiling beams, called vigas.

These trees are found at least 25 miles away in the forests of Colorado. The smaller beams placed above the vigas are Populus species, however, and it was always thought that they were cottonwood trees found locally. A new study changed this assumption.

Robert Blanchette, a plant pathologist at the University of Minnesota, recently completed a study of smaller beams found in the West Ruin of Aztec Ruins National Monument, built around A.D. 1100.

His microscopic examination of the cell density of the samples reveals that the vast majority of smaller timbers are aspens rather than cottonwood. Aspen, a close relative of cottonwood, does not grow locally but rather in the mountains of Colorado where the vigas were obtained.

Several qualities may have determined the selection of aspen. These might have included the strength and straightness of the trunk, the attractive color of aspen after aging, and the symbolism of mountains (and their trees) as sources of water to the arid lands near Aztec.

Whatever the reason, the choice of aspen over cottonwood is another aspect of the Chacoan peoples' willingness to invest large amounts of energy in following a prescribed format in constructing the large multistory buildings known as great houses.

EDITOR'S NOTE: Aztec Ruins National Monument provided this article.



## Issues & Viewpoints

*This will appear in RPA Notes and hopefully in the newsletters of the SAA, SHIA, and AIA, but I think the local archaeologists could benefit from a second application! McGimsey is one of the Founding Fathers of CRM as well as a former president of SAA. Lynne Sebastian, President, SAA; 05-Aug-02.*

### **To Be or Not To Be — Registered**

Charles R. McGimsey III, RPA  
Director Emeritus, Arkansas Archeological Survey  
in Fayetteville AR

The tide seems to be turning but archaeologists have been slow off the mark to make a commitment to the Register of Professional Archeologists and thereby publicly identify themselves as Registered Professional Archeologists.

Just over twenty five years ago in my Presidential Address to the SAA I asked whether we were to become a true profession or remain simply a band of brethren? It was a serious question, not a rhetorical one. At that time (1974) a true archaeological profession did not exist in this country. There was an abundance of professional archaeologists who together constituted a band of brethren, but there was not an archaeological profession. A profession, by definition, consists of a body of individuals demonstrably qualified in a particular subject or skill, who remain qualified over time, and who agree to be held accountable to their colleagues and to the public in all of their professional actions (paraphrase of Webster, 1969, p. 1811).

Today we have an archaeological profession but it is still a small one. It consists of the 1500 or so individuals who have committed themselves to the public and to their discipline by becoming registered. But there is still an abundance of archaeological brethren out there who are unquestionably professionals but until they make that personal commitment they do not form a part of the archaeological profession. And until such time as those persons qualified to be registered routinely choose to make such a commitment to archaeology by becoming registered the discipline will continue to have major problems.

Robert Jeske in a recent article argues cogently

that what the Register must do to increase its numbers is convince those who employ archaeologists "that registration is truly the mark of a person who is a professional and who is likely to be a better archaeologist than someone who is not registered" (Jeske, 2002, pp. 29). I certainly agree it would be a great help (being better able to get a job is an important incentive) but that is helpful advice only if we determine how to go about convincing employers that RPAs are "better." Presumably the most convincing argument would be a study assessing the performance of a set of RPAs against a set of archaeological practitioners who don't qualify for registration. But the mechanics of that seem prohibitive. How would such a selection be made, by whom? Who would conduct and fund such a survey? How large a difference between the two sets would convince employers, and how would the results be effectively promulgated to a very diverse audience?

A second major problem with depending on convincing employers as the primary means of encouraging registration is that success in that area is not going to do anything about bringing aboard the Register the greatest body of practicing professionals - those already happily and securely employed. The profession, if it is to be fully effective, must attract that element to the Register now as well. But why should we have to depend on employers to force us to act in the best interests of our discipline? If all qualified participants would become registered, the profession would be in the position of presenting employers with only the best to choose from to begin with.

Of course, if coercion is required to motivate individuals to become registered, the licensing of archaeologists by each state is the ultimate coercive approach, one which has always lurked in the background. Indeed, one of the major concerns of those who were instrumental in founding SOPA (now the Register) was to endeavor to insure that if or when licensing did raise its head, the archaeological profession would have already in place an operative Code of Conduct and Standards of Research Performance which could be adopted by the states rather than risking having a code and standards established independently by each state legislature. But this would be a long, time consuming process and one fraught with peril, for state legislatures cannot always be counted on to do what is intended by those who propose the legisla-



## Issues & Viewpoints

tion. There is also the danger of legislative acts being adversely affected by those not concerned with the best interests of archaeology. Of course, the best protection against the latter problem is to have a strong professional presence. In fact, if we have a strong profession, state laws, with all their difficulties, should be unnecessary.

The benefits of the Register to the individual and to archeology will not be maximized until such time as the great majority of eligible individuals become registered. Only then will the profession become a force to be reckoned with, benefiting all elements - the individual practitioner of whatever orientation, the discipline of archaeology, and archeology's various publics. An effective Register can be a major factor in helping resolve many of the discipline's current problems. It can help assure adequate field training, facilitate the movement of personnel among the four fields within the discipline (university or college teaching, research, management, and outreach) and, in concert with the SAA, SHA, AAA, AIA and other societies, it can work toward assuring adequate and appropriate funding, and encourage improved communication among all practitioners, not to mention helping assure that the resources receive the best possible care and that the public is best served.

The unique and most important function of the Register, however, aside from identifying qualified practitioners who have agreed to adhere to its Code of Conduct and Standards of Research Performance, is its ability, through its Grievance Procedures, to hold registrants publicly accountable for all future actions, however funded, thus assuring the public that professional standards will be met and maintained. While agency and SHPO archaeologists provide some measure of review and oversight for much CRM research, the Register can also provide a check and balance on the performance of the agency/SHPO review process when registered archaeologists are involved. It is the value to the discipline of this capacity for quality control that should be emphasized when considering registration rather than the apparent hurdles of registration itself. If a registered archaeologist does not perform professionally he/she can be called to account.

Obviously the ability of the Register to meet

the public's need is going to depend on the willingness and ability of each qualified archaeologist to place a concern for long term benefits to the discipline above immediate self interest and/or the (I believe false) perception of not receiving any personal benefits from registration. Every archaeologist is involved and each has a personal and professional stake in insuring that archaeology maintains a strong, publicly recognized and respected, professional presence as represented by a strong and inclusive Register. We must consider the consequences of losing that public support before deciding not to become registered.

Much thought, legal advice, and consultation with other disciplines went into the development of the Register's Code of Conduct and Standards of Research Performance, and they have withstood the test of time. The Register may not yet be perfect but it is continually evolving. It represents the best vehicle we are ever likely to have for developing and maintaining a recognized and accepted archaeological profession and, with everyone participating, the Register, and the profession, can only get better.

If we are not careful we could lose the initiative and momentum we presently have for establishing a true profession of archaeology encompassing the full body of qualified practicing archaeologists. If we should ultimately fail in this effort, which is beyond my comprehension, archaeology will be right back where it was twenty five years ago, a discipline whose practitioners, for whatever reason(s), have failed to unite in the best interests of the discipline, the resource base, the public, and, ultimately, themselves. That would truly be sinful.

I can think of a number of reasons why individuals might shy away from becoming registered: it is a hassle to have your credentials checked by anyone, the annual cost, the absence of a material reward, e.g., a journal, and the fact that from then on you are no longer quite the free spirit you once thought you were but will be held directly accountable by your peers for your future professional actions. There is probably a fifth even more powerful reason that is operative, the answer to a weighing of the negative factors against the question "What benefits accrue to me by my becoming registered?" For many people the negative factors may appear to be more weighty. To others, particularly those holding a prestigious and secure

## Issues & Viewpoints

post in academe or elsewhere, the Register may seem simply irrelevant. There is no simple satisfactory answer for everyone to the question "Should I become registered?" But the individual who tries to determine whether to become registered or not by attempting to weight the hassles against the benefits is viewing the question from too narrow a framework. It is necessary to include "What is best for the archaeological resource base and the future ability of archeology to contribute to knowledge?" into that frame. In the final analysis, the question as to whether we should become registered is actually the same for each of us, regardless of our present situation or status. "Do we wish the archaeological resources remaining to us, and upon which we all depend, to be investigated and defended by a true profession of registered archaeologists with common goals and standards and an established means for oversight, or do we truly and honestly believe that as much or more can be achieved by an unorganized aggregate of individuals (of widely diverse capability) who are not held to any consistent standards by anyone?"

I have been involved with SOPA (now the Register) from the very beginning. I don't believe I have ever received any direct benefits from being a member of SOPA or from being an RPA (outside of the fellowship) nor did I expect to. The indirect benefits have been many and profound. What follows is obviously a very personal point of view, but to me the Register, and all that it implies, provides each of us an opportunity to identify publicly with and express our pride in archaeology and in being an archaeologist; to exhibit our faith that, by working together with common goals, standards, and controls, we can contribute more and more effectively to society; to demonstrate our desire to help insure that we and others will be able to do the best work we are capable of doing by constantly striving to improve

the ground rules under which we all operate; and to express our conviction that more can be accomplished if we act as members of a cohesive group than could possibly be accomplished by individuals, however well intentioned or well placed. If you don't agree with at least some of what is set forth above then perhaps I can understand why you would choose not to become registered, though I still would not agree with that decision.

I recently had occasion to ask a younger colleague, who is employed as a research archaeologist by state government, why he had become registered as soon as he was eligible. His immediate reply: "Because it was the professional thing to do." Precisely.

## References cited

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2002 Insights: Professionalism in Archaeology and Cultural Resource Management. *The SAA Archaeological Record* 2 (1):27-29.

Webster, Noah

1969 *Webster's Third New International Dictionary*. C. G. Merriam and Co. Springfield, Massachusetts.

## Calendar

*Calendar continued from page 2.*

Nov 14  
Albuquerque

**Experiments in State-Building: New Research in Mesopotamia & Madagascar** – Journal of Anthropological Research Distinguished Lecture by Prof. Henry Wright (Univ. of Michigan). UNM Anthropology lecture hall, 7:30 pm. Free and open to the public.

Nov 15  
Albuquerque

**Regional Archeological Survey in the Heartland of Early Chinese Civilization** – seminar by Prof. Wright (see above). UNM Anthropology room 178, 12 noon. Free and open to the public.

Nov 15-16  
Alpine TX

**Center for Big Bend Studies 9th Annual Conference** – at Sul Ross State University in Alpine, TX. Papers will relate to the diverse prehistoric, historic, and modern cultures of the borderlands regions of the U.S. and Mexico with emphasis on the area encompassed by Trans-Pecos Texas and north-central Mexico. Info: contact < cbbs@sulross.edu > or visit the CBBS website at < www.sulross.edu/~cbbs >.

Nov 20-24  
New Orleans LA

**101st Annual Meeting of the American Anthropological Association** – Info: < jmeier@aaanet.org >; (703)528-1902, extension 3025.

Apr 9-13  
Milwaukee WI

**SAA 68th Annual Mtg.** Info: < www.saa.org/Meetings/index.html >.

Aug 2003  
Casas Grandes MX

**2003 Pecos Conference** – Paquime, Casas Grandes, Chihuahua, Mexico. Info: Jose Luis Punzo Diaz, Director, Museo de Las Culturas del Norte, INAH Centro Cultural Paquime, Casas Grandes, Chihuahua, C.P. 31850. Telephone: 169-2-41-40; < punzojl@prodigy.net.mx >.



## ARMS Report

Tim Seaman

### ***New ARMS Fee Schedule Passed, Effective January 1, 2003***

On 19 September 2002, the Museum of New Mexico Board of Regents formally approved amendments to NMAC 4.51.5: ARCHAEOLOGICAL RECORDS REPOSITORY AND CULTURAL RESOURCE INFORMATION SYSTEM. Regulation Changes will go into effect on 1 January 2003 after publication in the New Mexico Register and a comprehensive mailing to active users in mid-November, 2002.

As most ARMS users are aware, this amendment increases fees for many ARMS services, extensively modifies the current billing system, and introduces opportunities for fee discounts:

- Invoicing will switch from bi-annual to a monthly schedule. Payment of monthly invoices is expected within 45 day of receipt. Accounts with balances past 45 days will result in a suspension, and/or possible termination, of ARMS privileges as detailed in the ARMS User Agreement.
- ARMS Access Fees for the year 2003 will be due by January 31, 2003 and must be accompanied by a signed ARMS User Agreement. The new annual fee schedule is as follows:

Supervisory Positions	Fee
1-3 persons	\$100
4-10 persons	\$150
11-20 persons	\$250
> 21 persons	\$400

- Requests for custom database queries and electronic data files that require more than one hour of staff time will increase from \$25/hour to \$100/hour. Alternatively, qualified users and institutions may negotiate annual service contracts with ARMS for access to GIS data file applications and related technical support.

Survey Size in Acres	Registration Fee
< 6	\$20
6 - 10	\$40
11 - 20	\$60
21 - 40	\$90
41 - 80	\$120
81 - 160	\$160
161 - 320	\$240
321 - 640	\$350
641 - 1280	\$500
1281 - 2560	\$800
2561 - 5120	\$1520
> 5120	\$1520 (1-42 sites) plus \$15/site for additional sites

- The new Survey Registration Fees are as follows:
- In 2003, ARMS will enact a new discount schedule for users. Survey registration fees may be reduced up to 25% for qualified users that routinely use automated registration and data entry applications supported by ARMS, and/or provide spatial data in a format compatible with NMCRIS. A letter will be sent to all active users in November further detailing the discount schedule and how users may qualify for such discounts.

Please contact us if you have questions.

### ***Museum of New Mexico Board of Regents Hearing Officer Report***

*The following is an administrative summary of the Hearing Officer Report submitted to the Museum of New Mexico Board of Regents re: amendments to NMAC 4.51.5: ARCHAEOLOGICAL RECORDS REPOSITORY AND CULTURAL RESOURCE INFORMATION SYSTEM. Copies of the complete report are available from ARMS.*

September 3, 2002

To: Museum of New Mexico Board of Regents

From: Stephen S. Post, Museum of New Mexico,  
Office of Archaeological Studies, Office of Cultural  
Affairs Hearing Officer

## ARMS Report

**Subject:** Administrative Summary of the Hearing Officer Report on the Proposed Amendment to 4.51.5 NMAC: Museum of New Mexico Archaeological Repository and Cultural Resource Information System

On 16 July 2002, the Board of Regents of the Museum of New Mexico held a public hearing to gather comment on an amendment to 4.51.5 NMAC: "Museum of New Mexico Archaeological Repository and Cultural Resource Information System" jointly proposed by the Museum of New Mexico and Historic Preservation Division and approved by the Board of Regents on 23 May 2002. The hearing was advertised one month in advance with preliminary information circulated during the previous six months. All interested persons were allowed to participate in the hearing. Written comments were accepted up to the date of the meeting, at the meeting, and until 30 July 2002.

The amendment to 4.51.5 NMAC proposes to increase certain fees to support additional Archeological Records Management Section (ARMS) services and make assessments more equitable; require participating government entities to provide equitable support to ARMS; and modify the billing system to reduce the number of delinquent accounts. Basically, the amendment enables ARMS to charge fees sufficient to recover costs associated with the increased services that are now provided to the cultural resources management private sectors and local, state, and federal agencies. It provides ARMS with greater ability to assess government agencies commensurate with their NMCRIS use, thereby minimizing high volume users that pay limited fees and low volume users that pay inordinately high fees. Finally, the amendment brings ARMS billing in line with current state regulations. Legal counsel for the Office of Cultural Affairs has reviewed and approved the amendment language.

The hearing attendance and the volume of written comments were low. In effect, no issues were raised that substantively challenged the proposed amendment. Given ARMS's notification effort, the Hearing Officer concluded that the proposed fees, cooperative agreements, and billing procedures would not place undue burden on users, consultants, or clients.

In this report, the Hearing Office finds that,

Overall, the proposed changes to 4.51.5 NMAC: *Museum of New Mexico Archaeological Repository and Cultural Resource Information System* address a range of procedural and cost issues that have arisen over that last six years. In essence, they respond to aspects of the original legislation that did not account for changes in technology, cost, and procedures that are an inevitable part of governmental bureaucracy and administration. Changes in technology have streamlined registration procedures, increased the quality and range of services that ARMS now provides to qualified users and institutions, and increased the demands that qualified users and institutions regularly place on ARMS abilities to maintain and administer the NMCRIS files. The proposed amendment also responds to changes in relationships between ARMS and government agencies and entities that result from increased capacity and needs and recognizes that the increases must be financially supported. Finally, changes in OCA policy require ARMS to alter its billing and payment procedures at a cost that cannot be absorbed and must be partly shared by the qualified users and institutions.

The Hearing Officer concludes that,

1. The proposed amendment to 4.51.5 NMAC: Museum of New Mexico Archaeological Repository and Cultural Resource Information System is within the jurisdiction and authority of the Board of Regents.
2. The proposed amendment is supported by substantial evidence in the hearing record and is not strongly opposed by cultural resources management professionals and development industry representatives.

The Hearing Officer respectfully recommends that the proposed amendment be adopted in its entirety and promulgated by the Museum of New Mexico Board of Regents.



## Lab Report

Chris Turnbow & Julia Clifton

### ***Proposed Expansion of the Laboratory of Anthropology Greatly Needed***

The Lab currently houses a vast amount of our state's precious cultural materials and documents. Yet, in about three to four years, that space will be filled. Moreover, over half of the collection is housed in substandard conditions. Duane Anderson, Associate Director of the Museum of Indian Arts and Culture (MIAC) and the Laboratory, has been working hard for the past two years to create a new state-of-the-art collections facility along with a new wing for the Lab's research library and new quarters for ARMS. At present, architectural plans have been drafted and the project is on the proposed legislative budget for next year. The new construction would more than double the Lab and restore the original building to its former beauty. Members of the Office of Cultural Affairs, Museum of New Mexico, and the Historic Preservation Division have met twice within the past month to finalize the plans and develop legislative support. Stay tuned!

### ***New Mexico BLM Collections Going Online***

Donald Montoya, a graduate student from Brigham Young University, in Provo, Utah joined the staff of the Lab as the new BLM Intern in the Archaeological Research Collections on September 16. Don received his BA in Anthropology from BYU in 1999, and is currently completing his MA degree from the Anthropology Department there. He has field experience in Utah and his thesis interest is in the BMIII to PI transition in the Four Corners area of the Southwest. Don will be with us until mid-late December.

Don's primary duties as an intern will be to gather data and create collections summaries for the new BLM Collections website. Due to go online in January 2003, the web site will feature a searchable catalog of the BLM's archaeological collections at the Museum.

### ***MIAC Exhibitions***

Our fantastic exhibit titled "Touched by Fire: The Art, Life, and Legacy of Maria Martinez," displaying some of Maria's most important pieces, will run to January 5, 2003. A temporary exhibit of John Houser's works will open in mid October and

plans are underway for a major Tewa exhibit for 2003.

### ***Curation Fee Increase Reminder***

Just a reminder that the Museum's Curation Fees will be going up on January 1, 2003 to \$400 per cubic ft. If you have existing contractual obligations based upon the current curation fee of \$225 per cubic ft., and have not contacted the Curator of Archaeological Research Collections, please do so as soon as possible. You may request an extension of the \$225 per box fee for these existing collections by contacting Julia Clifton, MIAC/LOA, Museum of New Mexico, P.O. Box 2087, Santa Fe, NM 87504-2087; [jclifton@miacclab.org](mailto:jclifton@miacclab.org); (505) 476-1268. The new fee schedule is available on the Museum's web site at [http://www.miacclab.org/collections/arc\\_fee.pdf](http://www.miacclab.org/collections/arc_fee.pdf).

### ***ARC Procedures Manual***

The latest revision of the Procedures Manual for Submission of Archaeological Collections is nearing completion, and will be mailed with the Museum's 2003 Curation Agreements in mid-late October. In the meantime, if you have any procedural questions, please call Julia.

### ***Sun Mountain Gathering: Adventure into the Past***

The Sun Mountain Gathering was a major success! Held on July 13 and 14, the event gave over 1500 people a chance to explore the cultural heritage of New Mexico and learn more about archaeology and our region's diverse cultures. Set on the Museum Hill plaza and nestled in the pine and juniper trees along our Heritage Trail, archaeologists, Native people, and many other volunteers provided rich and varied experiences for the visitors. Archaeologists did everything from demonstrating excavation techniques and ancient technologies to giving talks and helping with hands-on activities.

The archaeologists stated what a positive and fun time they had at the event. I would especially like to thank Dave Philips, Blake Roxlau, Lou Haecker, Alan Shalette, Mike Bremer, Chuck Hannaford, Ron Fields, Glenna Dean, Tim Seaman, Eric Blinman, Mollie Toll, John Torres, Anna LaBauve, Natasha Williamson, Tess Fresquez, Jessica Badner, Julia Clifton, Dick Huelster, Dennis Slifer, Judy Propper, Sid Barteau, and Steve Fosberg for working so hard on the event. Well done!

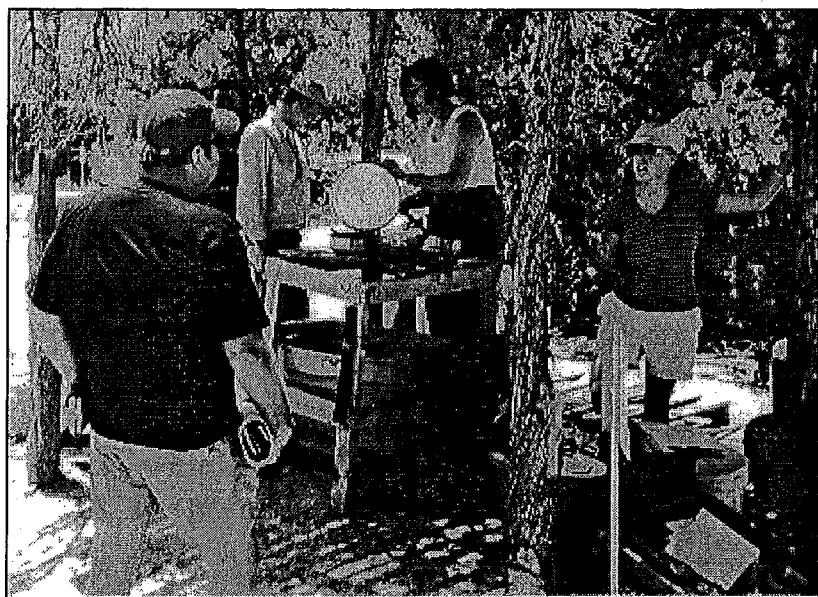
Additionally, organizations and agencies who helped at the Gathering include the Native Seed

## Lab Report

Search, NMAC, the New Mexico State Highway and Transportation Department, the New Mexico Historic Preservation Division, Office of Archaeological Studies, SWCA, the Southwest Forest Service, the Santa Fe Forest Service, the New Mexico Bureau of Land Management, the Santa Fe Archaeological Society, Archaeological Conservancy, PNM, TRC, New Mexico State Monuments, Friends of Tijeras Pueblo, the Boy Scouts of America, and the Girl Scouts of America. Forgive me if I left anyone out. Just remember, next year the Second Annual Sun Mountain Gathering will be held on July 12 and 13, 2003.

## Atlatl Competition

The atlatl competition held at the Sun Mountain Gathering in July was intense. The five excellent shooters on the line threw for accuracy at about 20 m and for distance. Blake Roxlau of the NMSHTD's Environmental Department won a close contest for distance. Chuck Hannaford of the Office of Archaeological Studies nailed the targets for best in accuracy. Ron Fields of Public Service Company of New Mexico won for the most authentic replica with both Great Basin and Southwest atlatls. In actuality, we were so overwhelmed by the crowd wanting to talk to us and to shoot the weapons themselves that we shortened the competition. Nevertheless, everyone had fun and many people learned about a largely unknown part of our past.



Mollie Toll and Jessica Badner demonstrating water flotation techniques. *Photo by Ed.*



Chris Turnbow in quest of fire. *Photo by Ed.*



David Phillips explaining archaeological excavation techniques. *Photo by Ed.*



## Lab Report

As a side note, representatives of the World Atlatl Association heard about the event and offered to help us with next year's competition. They even promised to bring a moving target. Start carving your atlatls and darts.

### ***New Mexico BLM Research Fellow Program at the Museum of Indian Arts and Culture/Laboratory of Anthropology***

The New Mexico Bureau of Land Management, in cooperation with the Museum of Indian Arts and Culture and Laboratory of Anthropology, has established a Fellowship program with a research stipend to encourage research and analysis of BLM collections curated by the Museum.

In addition to the Bureau's collections, the Museum maintains collections from other federally managed public lands in New Mexico, and is the designated repository for archaeological materials from lands owned by the state of New Mexico. The Museum's object collections contain materials from more than 18,000 archaeological sites, consisting of roughly 15,000 cubic feet of bulk archaeological materials as well as approximately 52,000 individually cataloged artifacts. Together with the Archaeological Records Management Section of the New Mexico Historic Preservation Division, the Museum houses more than 400 linear ft. of archaeological records and photos associated with the object collections. In addition, the Museum has a 25,000 volume research library, specializing in the study of Southwestern Native American cultures across prehistory to the present.

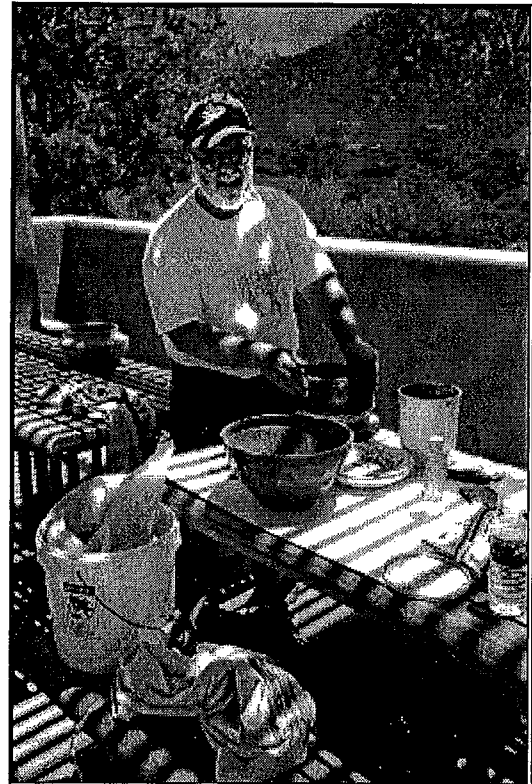
The fellowship will provide an award of \$7,500

and use of the research facilities and access to existing archaeological collections at the Museum. Candidates for this fellowship should hold a B.A. in anthropology or a related field, be familiar with the archaeology of the Southwestern United States, and be enrolled in good standing in a graduate degree program in anthropology, archaeology, or a related field. Applicants will be asked to provide a proposal for a research project involving collections from public lands curated by the Museum, in addition to demonstrating previous accomplishment in independent research. As a requirement of their research appointment, the Bureau of Land Management Fellow will be required to present at least 2 public programs on their research: a program introducing and describing their research topic when research is initiated, and a program describing the results of their research at the conclusion. In addition, a written report for the Bureau and the Museum will be required at the conclusion of the fellowship.

For application information, contact Julia Clifton, MIAC/LOA, Museum of New Mexico, P.O. Box 2087, Santa Fe, NM 87504-2087; < jclifton@miacloa.org >; (505) 476-1268. Applications for the fellowship beginning January 2003 are due by October 1, 2002.



Fieldhouse under construction. Photo by Ed.



Tim Seaman creating a Spanish style micaeous pot. Photo by Ed.





## NewsNotes

### **Salmon Ruins Museum Announces Save America's Treasures Grant**

Paul Reed < preed@CDARC.ORG >  
[via nmac-l] 25-Sep-02

Salmon Ruins Museum has been awarded a \$175,000 grant from the prestigious Save America's Treasures program of the National Park Service and National Endowment for the Arts.

The funds will be used to: 1) upgrade the Salmon storage facility to properly house artifacts; 2) provide the conservation supplies necessary to clean, curate, and store the 1.5 million artifacts in the Salmon collection; and 3) fund a conservation assistant position for 2 years to carry out the curation work and help supervise volunteers.

The Save America's Treasures program is a national effort to protect and preserve America's threatened cultural treasures. This grant to Salmon Ruins is recognition of the national significance of the Salmon site, its research collections, and educational efforts. "We are very excited to have been chosen as a Save America's Treasures recipient," said Larry Baker, Executive Director of the Salmon Ruins Museum. "Salmon Ruins has long been valued by the local San Juan community, and this award is national endorsement of many years of local effort and investment."

Salmon Ruins is a 250-room Chacoan outlier built on the north bank of the San Juan River around AD 1090. Occupation of the Pueblo by Chacoan groups continued into the mid 12th century. After that time, local San Juan people took over the Pueblo, and made extensive changes as they resided at Salmon into the late 1200s. Salmon Ruins today is protected and preserved as part of the San Juan County Museum Association's 22-acre preserve, just west of Bloomfield, New Mexico.

The Save America's Treasures award is part of a program of hard work and reinvestment in Salmon that started just over a year ago with the partnership be-

tween Salmon and the Tucson-based Center for Desert Archaeology. "In many ways, this grant is just a beginning," explained Paul Reed. Paul is the Center for Desert Archaeology's Chaco Scholar/Preservation Archaeologist at Salmon Ruins. "As part of the matching requirements for funding the grant, Salmon will need to raise \$16,000 in additional contributions." Another aspect of the match will be donated volunteer time. Salmon volunteers work on Saturdays undertaking curation and conservation activities. With the grant funding coming in, Salmon needs a larger pool of volunteers. Anyone interested is encouraged to call the Salmon Ruins Museum.

Things are happening at Salmon Ruins!

To learn more about this national treasure in your backyard, the public is invited to attend a free, one-hour "Get to Know Salmon Ruins" orientation tour at Salmon Museum, scheduled for Saturday, November 2, at 2 pm. To reserve a slot on the first tour, to contribute money toward the Salmon matching fund, or to volunteer for the curation effort, please call Pam Grosnell at 505-632-2013 or Paul Reed at 505-632-0657.

### **The 2002 NM Archaeology Fair "Había Una Vez...Once Upon a Time...in Southwest New Mexico"**

Glenna Dean, NM State Archaeologist  
< gdean@oca.state.nm.us >

The New Mexico State Archaeologist, the Historic Preservation Division/Office of Cultural Affairs, and the Grant County Archaeological Society are pleased to announce the Ninth Annual New Mexico Archaeology Fair to be held in Gough Park in Silver City as a 2-day outdoor event on Friday, 4 October 2002 from Noon to 5 PM, and on Saturday, 5 October 2002 from 9 AM to 5 PM. Gough Park is located between 12<sup>th</sup> and 13<sup>th</sup> (N/S) and Pope and Main streets (E/W) and we will be under the trees just shy of downtown Silver City. The move to October will take the Fair back outside during a season less famous for gusty winds than May. As always, the Fair provides an opportunity for archaeologists



## NewsNotes

to showcase projects and activities in NM in general, or the greater SW NM area in particular, as well as to have fun interacting with a diverse public and catching up on each other's activities since the last Fair.

The focus of the Fair is "Había Una Vez...Once

Upon a Time...in Southwest New Mexico" with an emphasis on what's been learned – and what remains to be learned – in SW NM and adjacent AZ, TX, and Mexico. All archaeologists are invited to join the fun at the Fair, even if you don't have an exhibit directly relating to the Southwest quadrant of the state. All you really need is one or two people willing to talk to the public about archaeology for a few hours, but some kind of exhibit (no matter how modest) will help break the ice. Mount photos on poster board, compile a three-ring notebook with photos of a project in the field or in the lab, hand out handouts, or think of a giveaway with an archaeological or preservation message. This is a chance to convey the most information about your profession as well as your organization's archaeological activities through one-on-one conversations with the public. You can sell memberships, books, videos, t-shirts, or other archaeologically related items as appropriate, and there will be a raffle to benefit the Fair (donations anyone?). Electricity is available for formal exhibits, computers, and audio-visual equipment in the

Park's gazebo as well as in a covered area. The Fair on Friday afternoon is aimed at attracting schoolkids; the whole town will turn out on Saturday.

Demonstrators are especially welcome! Set-up time on Friday starts at 9:00 AM. Because of security issues, all exhibits, including the tables and chairs the City will provide us, must be taken down at the end of the day on Friday and set up again on Saturday starting at 7:30 AM (they can be stored in the Recreation Center about a mile from the Park) so you'll want to keep portability of exhibits and demonstrations in mind. Street parking is available and a parking lot is across the street. There's lots of local lodging.

Mark your calendars and join friends, colleagues, and the HPD archaeology staff for a return to the days of Archaeology au Natural (natural setting, that is)! Fill out the exhibitor form so we'll know what you need. Send your form to Glenna Dean at an address below. See you there!

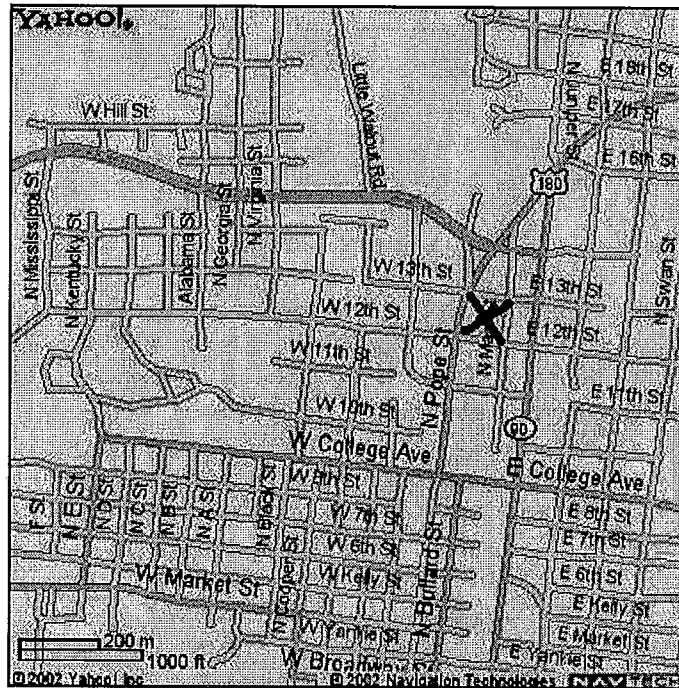
### ***Zunis Seek Help in Mine Fight***

Leslie Linthicum  
*Albuquerque Journal*  
July 17, 2002

Opponents who have been fighting a proposed New Mexico coal mine for the past decade have two more legal options in their arsenal: lawsuits in federal and state court.

On Tuesday, though, they sought redress in the court of public opinion.

Members of Zuni Pueblo, the Sierra Club and other Indian representatives and environmental-



### **2002 New Mexico Archaeology Fair**

Friday, October 4<sup>th</sup> (12-5pm)

Saturday, October 5<sup>th</sup> (9-5pm)

**X** = Gough Park, Silver City, NM

Located on the block between:

12<sup>th</sup> & 13<sup>th</sup> Streets (N-S)

N. Pope & Main Streets (E-W)

Setup as early as:

9am (Friday) 7:30am (Saturday)

Secure overnight exhibit/display storage  
has been arranged

ists banded together to ask New Mexicans to join them in opposition to the proposed Fence Lake coal mine that they say will tap water from the sacred Zuni Salt Lake.

Zuni tribal member Carlton Albert, who ran with a group from Phoenix to Zuni last week to show support for the struggle, said at a news conference in Albuquerque on Tuesday that the lake is more than a body of water.

"It is a sacred monument to us," Albert said.

Zuni Salt Lake has been maintained by Zuni people for hundreds of years but is used by members of other pueblos and tribes for salt gathering for religious uses.

The salt lake is south of the Zuni reservation and about 12 miles from the proposed Fence Lake mine that would ship coal to a Salt River Project generating station to provide electricity to Phoenix. The mine would cover 18,000 acres in northwestern Catron County and southwestern Cibola County.

Zuni Pueblo and others maintain the water drilling during the mine's 40-year lifespan will reduce aquifers that feed the lake.

"This is no place for a coal mine," said Sierra Club representative Andrew Bessler, who spoke at the news conference.

Bob Barnard, Fence Lake project manager, said the utility's mining activity, as approved by the Department of Interior, will not harm the lake.

"We're going to approach this project in an environmentally sound manner," Barnard said. "There's nothing that we have in our plans that would have any effect on the Zuni Salt Lake."

The Interior Department approved the mine in May with provisions designed to protect sacred sites and water supplies.

The provisions prohibit taking water from three aquifers – the Dakota, San Andreas and Glorieta – and require monitoring of the Dakota aquifer at three wells.

The Dakota aquifer is connected to Zuni Salt Lake; hydrological studies commissioned by the mining company have concluded that the deeper San Andreas and Glorieta aquifers are not.

The federal permit allows water to be withdrawn from the Atarque aquifer with monitoring of at least one well.

A hydrological study commissioned by Zuni Pueblo concluded the Atarque aquifer is con-

nected to the salt lake.

"It is our opinion," Barnard said, "that it is not."

Regarding cultural resources in the area, the permit requires a "traditional cultural properties" plan and requires the Salt River Project to consult with Indian tribes to develop cultural awareness programs for mine employees and contractors.

Zuni Gov. Malcolm Bowekaty was to testify today before the Senate Indian Affairs Committee in Washington, D.C., that the mine would violate federal law that protects Indian religious sites.

### ***Santa Fe County to Buy Site in Lamy***

Wendy Brown

Santa Fe New Mexican 24-Aug-02

People cheered when the Santa Fe County Commission decided Tuesday to buy a 91-acre archaeological site threatened by development in Lamy.

"I'm so happy," said Lamy resident Kathy Pilnock as she walked out of the meeting with tears in her eyes. About 25 Lamy residents at the meeting had asked Pilnock to speak on their behalf so all of them didn't have to talk.

"Our community has tried to keep its rural character for the past 20 years," Pilnock said, "and this shows the commission obviously understands our position."

The site contains ruins of an Indian pueblo built around 1200, and archaeologists say the site is one of the earliest in the Galisteo Basin, which stretches roughly from Lamy to Cochiti Pueblo. The basin contains at least 24 major archaeological sites. Archaeologists say the Lamy site could help them learn about other sites.

Developer Joe Miller, owner of the property, had said he would destroy the archaeological site and build houses in its place if the county did not buy the land. The land has been appraised at \$850,000, but Miller has offered it to the county for \$750,000, said Patrick Kraich, county open-space and trails-project manager.

County Attorney Steven Kopelman said state law says developers can't be stopped from building on a site unless human remains are found there.

Kopelman also said the county can't compel the developer to portion off the Lamy archaeological site and build on the rest of the land because the archaeological site takes up a majority of the site.

Commissioners Paul Duran, Marcos Trujillo,

Javier Gonzales and Jack Sullivan voted in favor of the measure. Commissioner Paul Campos voted against it, saying he thinks many such sites exist and that some members of the County Open Land and Trails Planning and Advisory Committee have serious concerns about buying the site.

Mary Louise Williams, a COLTPAC member for about two years, said most members are in favor of the purchase.

Williams said the purchase did not receive a high ranking by COLTPAC at first because members had concerns about long-range management and the support of the community, but those concerns disappeared after Lamy residents raised money to buy the site and members of The Archaeological Conservancy in Albuquerque pledged their support.

Jim Walker, southwest regional director for The Archaeological Conservancy, said Lamy residents have raised about \$4,000 to help the county buy the property. The conservancy has promised up to \$5,000 in matching money.

### ***Judge Rules Scientists May Study Kennewick Man Skeleton***

*The Associated Press* 30-Aug-02

PORTLAND, Ore., — A federal magistrate judge has ordered the government to let scientists study the bones of Kennewick Man, an ancient skeleton discovered on the banks of the Columbia River. Scientists say the bones could offer clues about the earliest Americans.

The ruling by the judge, John Jelderks, on Friday rejected a decision by Bruce Babbitt, the interior secretary then, to give the remains to Indian tribes for reburial.

Magistrate Jelderks criticized the way the Interior Department and the Army Corps of Engineers had handled the case.

The government had "failed to consider all the relevant factors, had acted before it had all of the evidence, had failed to fully consider legal questions, had assumed facts that proved to be erroneous, had failed to articulate a satisfactory explanation for its action, had followed a 'flawed' procedure, and had prematurely decided the issue," Magistrate Jelderks wrote.

After reviewing 20,000 pages of documents filed in the case in six years, Magistrate Jelderks

wrote, "nothing I have found in a careful examination of the administrative record" supported the government.

"Allowing study is fully consistent with applicable statutes," he wrote.

Dana Perino, a spokeswoman for the Justice Department, said government lawyers would review the ruling before commenting.

The scientists said they were happy with the ruling but emphasized it was a legal battle against the government interpretation of the law, not tribal tradition.

"I'm sure Native Americans see it differently, but this suit was against the government, not the Indian tribes," said one, Richard L. Jantz, an anthropologist at the University of Tennessee in Knoxville.

Alan Schneider, a Portland lawyer who represented the scientists, said Magistrate Jelderks sided with the scientists "on nearly all major issues."

The ruling should set a national precedent for archaeological discoveries, and the scientists will take the case "all the way to the Supreme Court" if the government appeals, Mr. Schneider said.

Allowing scientific study of the skeleton will benefit everyone, including Indians, by offering clues to early migration and culture, said Robson Bonnicksen, former director of the Center for the Study of the First Americans at Oregon State University in Corvallis.

Shortly after the skeleton was found in July 1996 near Kennewick, Wash., Dr. Bonnicksen, Dr. Jantz and six other scientists went to federal court to prevent the Corps of Engineers from giving the bones to the tribes. The scientists said that a nearly intact ancient skeleton was extremely rare and that initial analysis indicated the bones differed from those of modern Indians.

But Mr. Babbitt backed the Corps of Engineers, which manages Columbia River navigation, saying the remains were "culturally affiliated" with Northwest tribes.

Mr. Babbitt acted under the Native American Graves Protection and Repatriation Act of 1990, a law intended to prevent the theft and sale of Indian artifacts, to protect tribal burial sites and to restore the remains of ancestors to the tribes.

The law requires federal agencies or museums to return remains and relics to tribes that can "show cultural affiliation" based on "geographical, kinship, biological, archaeological, anthropological, linguistic, folkloric, oral traditional, historical, or other relevant information or expert opinion."

The scientists, however, argued that no group can establish a direct link that extends back 9,000 years. "Babbitt said oral tradition trumped everything else," Dr. Jantz said.



## NMAC's 25<sup>th</sup> Year

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NMAC's officers, committees, and members from  
*NMAC Newsletter* v.1 n.1, November 1978.

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- Frank Broilo - President
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# NEW MEXICO ARCHEOLOGICAL COUNCIL

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Rev 03-2

Send a copy of this form with your payment to:

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**P.O. Box 25691**  
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
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NMAC is a nonprofit organization whose purpose is to maintain and promote the goals of professional archeology in the State of New Mexico, in a manner consistent with Section 501(1)(6) of the Internal Revenue Code.

Its goals are:

- Promoting archeological research within New Mexico, and disseminating knowledge arising from that research.
- Promoting awareness of New Mexico's cultural resources among public agencies, corporations, and members of the public.
- Encouraging the legal protection of cultural resources.
- Encouraging high standards for professional archeology.

*Please send membership inquiries and dues to NMAC at the address shown below. You may use the form on the other side of this page.*

## NewsMAC

*NewsMAC* is a quarterly newsletter concerned with cultural resource management and archaeological research in the Southwest. It is published for NMAC members – dues are \$20.00 per year for individuals; \$35.00 for sponsors; and \$35.00 for institutions.

NMAC encourages and gives priority to publishing member contributions to *NewsMAC*. They may be submitted in four ways (descending order of preference):

- Contained within an e-mail message.
- As an unformatted text file attached to an e-mail cover message.
- As an unformatted text file contained in a PC-compatible floppy disk.
- Printed, via U.S. mail or via fax.

**Articles or letters to the editor should be sent to**

Alan Shalette, *NewsMAC* Editor  
< AlShal@aol.com >  
5294 Mesa del Oso NE  
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## News NMAC

NEWSLETTER OF THE NEW MEXICO ARCHEOLOGICAL COUNCIL

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