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Society for California Archaeology Newsletter

Volume 36, Number 3, September 2002

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From the President

A t long last, we can report that the transition between the former Business Office in Fresno and the new Business Office at CSI; Chico is complete. Again, many thanks to Kristina Roper for her years of service as the SCA’s Business Office Manager, and to Greg White and his staff for taking on the extra responsibilities.

If it seems like the SCA has been undergoing many changes in the last year, it’s true. About the time I joined the Board, a number of new initiatives were proposed, among them an upgrade of the Newsletter, the Business Office move, and an overhaul of the SCA website. With the first two items under control, its time to turn our attention to the Website which Kristina Roper has agreed to continue to manage and update. She and I will be working to revise the website which we hope to have complete by the end of the year.

The other activity that is picking up steam is the 2003 Annual Meeting. Scott Williams, Caltrans District 3 archaeologist, has agreed to be local arrangements chair. We are already saving my proverbial you-know-what. Thanks, Scott; I love you. We have also agreed to have the 2003 meetings be jointly held with the Professional Soil Scientists Association of California. The members of this nonprofit organization have expertise in the identification of soil properties and in the interpretation of soil behavior. Randy Milliken has agreed to coordinate a one-day joint session that will have papers from members of both organizations.

In helping to get next year’s meeting arranged, I have been taking questions and comments regarding past meetings and I thought I would share the gist of these discussions with the membership. The number one question is why do the meetings, hotels, and banquet cost so much. With a membership that is over 1000 souls and over 500 people often attending the meetings, we are limited to cities and hotels that can support this number of attendees. We also must select hotels that have adequate conference space to accommodate a large number of concurrent sessions. As a result, we are restricted to more expensive cities and conference facilities.

I also wanted to address the commonly held belief that no harm results from staying at a hotel other the conference hotel, since some members might not know how the economics of the annual meetings relates to the SCA’s overall budget. In arranging for the annual meetings, the conference committee enters into a contract with the hotel, and in exchange for our promise of a certain number of reservations (called a room block), we get the conference facilities for free. If we do not make our room block, we must pay for the conference facilities on a sliding scale based on the difference between how many rooms we promised to book compared with how many rooms we actually booked. For example, if we do not make our room block for the 2003 meetings in Sacramento the SCA would have to pay from between $6,000 to $18,000. Such an expense would wipe out a major portion of the SCA’s operating income for the year. This would mean the programs that we sponsor might not be funded. Although we have not had this happen before, the risk gets higher every year and I wanted the membership to be aware of the problem.

On a more positive note, the program is shaping up nicely and both the program chair and the local arrangements chair are making sure that there will be lots of great papers and events. Now go out there and make some hotel reservations!

- Dana McGowan

SCA Executive Board 2002-2003

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Committee Reports

OHP Liaison Report

Michael D. McGurr, RPA
Associate State Archaeologist
Project Review Unit
State Office of Historic Preservation

As it has been awhile since the last State Office of Historic Preservation (OHP) Liaison Report, I thought that I would start out with an update on the organization of the OHP. The OHP has undergone a number of staff changes and reorganizations over the course of the last year or so.

Lucinda Woodward supervises the Local Government and Information Unit, which administers the National Park Service’s Certified Local Government Program, provides Section 106 review to local agencies for HUD-assisted projects and technical advice on the preparation of historic resource surveys and historic preservation ordinances, and operates key components of the California Historical Resources Information System (CHRIS).

Timothy Brandt supervises the Architectural Review Unit, which administers the National Park Service’s Federal Historic Preservation Tax Incentives program and provides architectural review support for the grants, registration, and project review programs in the OHP’s other units.

Eugene Ingavala supervises the Registration and Fiscal Unit, which administers federal and state registration programs (National Register of Historic Places, California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest), serves as staff to the State Historical Resources Commission, administers California Heritage Fund grant programs, administers and provides technical advice on the state Mills Act Property Tax Incentive program, and conducts the fiscal administration of the OHP.

Hans Kreutzberg, Supervisor of Cultural Resources Programs, supervises the above units and directly manages the Project Review Unit, which conducts consultation with federal agencies under Sections 106 and 110 of the National Historic Preservation Act, and with state agencies under Sections 5024 and 5024.5 of the Public Resources Code and Executive Order W-26-92.

And Finally, Dr. Knox Mellon, the State Historic Preservation Officer (SHPO), and Stephen Mikessell, the Deputy SHPO, oversee the operation of the entire OHP, develop OHP policy, and facilitate the operation of the State Historical Resources Commission.

Check the OHP’s website at http://www.ohp.parks.ca.gov/ for breaking news on historic preservation in California, announcements on OHP programs, online access to state and federal technical literature, and information on CHRIS. If you can help find information that is not on the website, please do not hesitate to contact me at either 916.653.9520 or mcgurr@ohp.parks.ca.gov.

Future OHP Liaison Reports will provide SCA membership with news from the OHP that relates both to California archaeology and to broader issues of historic preservation around the state. I would also like the reports to provide a forum where information about OHP operations can be shared and where archaeological and historic preservation topics as they relate to OHP policy, procedure, and guidance can be discussed. Please feel free to email me topics that you think would be useful to the membership.

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42. Cultural Diversity and Culture Change in Prehistoric Clear Lake Basin: Final Report of the Anderson Flat Project
Legislative Liaison Report

Stephen Bryue

Current Federal Legislation

Note: The following are summarized from the July 2002 Monthly Washington D.C. Update of the Society for American Archaeology Government Affairs Program.

PL. 107-171
Farm Security and Rural Investment Act of 2002

On May 13, 2002, President Bush signed the $300 Billion Farm Security and Rural Investment Act of 2002 (PL 107-171). Included in this legislation is a bill originally introduced by Senator James Jeffords (I-VT) as the “National Historic Barn Preservation Act of 2001.” The Jeffords bill is designed to enable the Secretary of Agriculture to make grants and to enter into contracts or cooperative agreements with eligible applicants, e.g., a state department of agriculture, a national or state nonprofit organization, or a state historic preservation office to preserve, rehabilitate, or repair historic barns. The law also calls on the Secretary to identify, document, and conduct research on historic barns to develop and evaluate appropriate techniques or best practices for protecting historic barns.

H.R. 2114
National Monument Fairness Act

Sponsor: Mike Simpson, R-ID

Current status: Currently pending before the full House

Summary: This bill would amend the Antiquities Act of 1906. Under the bill, the creation of monuments of over 50,000 acres, or additions of more than 50,000 acres to an existing monument, would require Presidential notification of the Governor of the concerned state more than 30 days prior to the issuance of the proclamation, and would make any proclamation null and void unless ratified by Congress within two years. The move to abrogate the President’s power under the Antiquities Act has been a favorite cause of some House Republicans since 1995.

H.R. 5355
Native American Sacred Lands Act

Sponsor: Nick Rahall, D-WV

Current status: Introduced July 18, 2002; referred to House Resources Committee

Summary: This bill codifies Executive Order 13007, which required federal agencies to grant Native Americans access to sacred lands for religious purposes. It also increases protection for Native American sacred sites by establishing a petition process by which Native American or Native Hawaiian organizations can request that lands under jurisdiction of federal agencies be declared “unsuitable” for “any or certain types of undertakings.” Undertaking in the bill has the same meaning as it does in NHPA. House Resources Committee Democrats have grown increasingly concerned about the vulnerability of Native American sacred sites to commercial development, especially exploration. Specifically, the cases of the Valley of the Chiefs in Montana and the “Dream Trails” land in Indian Pass, California, have attracted considerable attention.

S. 2508
Enhanced Protection of Our Cultural Heritage Act

Sponsor: Sen. Patrick Leahy, D-VT

Current status: Introduced June 6, 2002; pending before Senate Committee on Energy and Natural Resources

Summary: This bill would increase the maximum prison and monetary penalties for violations of ARPA and NAGPRA, and also for embezzlement and theft from Indian tribal organizations. Maximum penalties for violations of ARPA would increase to $100,000 and/or 10 years in prison; and maximum jail terms for trafficking in Native American human and cultural remains would be increased to 10 years. This bill would complement the new, tougher sentencing guidelines that are to go into effect later this year.

Hearings: Sacred Sites

On July 17, the Senate Indian Affairs Committee (Chairman, Daniel Inouye, D-HI) continued its series of hearings into federal agencies’ activities and how they impact Native American sacred sites. Barbara Boxer’s (D-CA) testimony was a strong statement against the planned Glamis Gold, Inc. mine at Quechan Indian Pass in Imperial Valley, California. In 2000, the Department of the Interior turned down Glamis’ application, which would place a large surface mine on lands the Quechan consider sacred. Secretary Norton had the Department’s new solicitor reevaluate that action, and then reversed the Department of the Interior’s previous ruling.

Current State Legislation

SB 1247
California Trust for Historic Preservation

Co-introduced by State Senators John Burton (Democrat, San Francisco, District 03), Wesley Chaheen (Democrat, Arcata, District 02) and Tom Torlakson (Democrat, Antioch, District 07).


Summary: SB 1247 would create a California Trust for Cultural and Historic Preservation and will place it and the Office of Historic Preservation (OHP), now located in the Department of Parks and Recreation, under the auspices of the State Library.

Comments: This bill passed out of the Senate on May 30 and was substantially rewritten. Changes included a name change from the...
E V O L U T I O N

For a quarter of the century the Obsidian Laboratory at Sonoma State University conducted research into the phenomenon of obsidian hydration. But the time as come for a change. The Obsidian Laboratory at Sonoma State University has shut its doors.

However, Tom Origer continues to engage in obsidian hydration research and commercial hydration band measurement as Origer’s Obsidian Laboratory (OOL). The staff includes technicians who prepare and measure bands on thin sections, manage data, and engage in induced hydration and other experiments. Currently, we have four microscopes dedicated to obsidian research and two pressure reactors inducing hydration. Research is guided in part by a focus group consisting of Dave Fredrickson, Tom Origer, Janine Loyd, Ted Jones, SueAnn Schrader, and others who meet on an occasional basis.

The purpose of this notification is to inform all who are interested in obsidian that we are alive, well, and actively pursuing obsidian related research. Commercial rates are as follows for thin section preparation and hydration band measurement:

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We do negotiate rates for very large projects and for those related strictly to limited or non-funded research. Finally, we will continue to support the Society for California Archaeology’s James A. Bennyhoff Memorial Fund Award through donation of hydration services, and we will continue to offer hydration services as a Silent Auction item at future Annual Meetings of the Society for California Archaeology.

To contact Origer’s Obsidian Laboratory, please write to us at P.O. Box 1531, Rohnert Park, CA 94927, call (707) 792-2797, fax (707) 792-2798, or visit our website at origer.com.

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To address these issues the Forest will be continuing to collect basalt source information at all sites being evaluated within the Forest and at all newly located sources within inventories. Since several of the source groups, Dogwood, Emigrant Ridge, Incline, North Dry Lake, Siegfried Ridge Canyon, Steamboat Springs, and Warner Creek, are situated outside the Forest boundaries, we encourage others working across the Northern Sierra to collect geochemical source sample for basalt outcrops and source basalt during inventory and excavation so that the spatial patterning of prehistoric use source for specific basaltic sources can be better defined.

References


The measure would change the environmental review process that is required for all building projects. If the bill becomes law, the tribes would probably win a growing number of disputes regarding the location of projects on or near tribes and builders of major projects.

The bill was purportedly designed to kill the Glanis Imperial Project gold mine in Imperial County. Glanis Gold, Ltd. has spent $14.7 million to try to build an open pit gold mine on federal land 20 miles south of the Quechan tribe’s reservation in the Imperial Valley. Indian Pass, near where the Quechan claim the gold deposit, contains prayer circles, petroglyphs and ceremonial places and is part of a “Trail of Dreams.” This bill could also affect a $21 million geothermal plant near the Oregon border being built by Calpine. The Pit River tribe has gone to court to block the project. The Pechanga are fighting a power line that Sempra Energy wants to build from Temecula to Riverside.

Opponents of the bill include a long list of mine operators, utilities, oil companies, real estate agents, builders, and other business groups. The state’s construction industry argues that “sacred site” is defined too broadly while the California Chamber of Commerce argues that the bill would inhibit economic growth and is a “job killer” because of its broad impact, including the delays and costs it will add to public works such as highways, schools, and utility lines.

SB 2084 California Indian Mission Preservation Fund
Introduced by State Senator Bruce McPherson (Republican, Santa Cruz, District 15).
Current status: Last amended in the Senate May 14, 2002
Summary: This bill would create the California Indian Mission Preservation Fund in the State Treasury and would require that the moneys in the fund, upon appropriation by the Legislature, be used by the Department of Parks and Recreation, in consultation with the California Mission Foundation, for specified purposes relating to the preservation, restoration, and protection of California’s historical missions.
Comments: State Parks owns and manages some of the missions, but many are still owned by religious institutions. Although maintenance and restoration of the missions is a worthwhile project, the appropriateness (and constitutionality) of using public money to fund improvement of property owned by religious institutions remains a question.

AB 1247 Official State Gold Rush Ghost Town: Bodie
Introduced by Tim Leslie (R-4th)
Current status: Bill passed out of the Assembly and was read for the second time in the Senate on August 14, 2002.
Comments: Under existing law, there is no official state ghost town. This bill would designate the town of Bodie as the official state Gold Rush ghost town.

AB 2115 Athletic Team Names and Mascots
Introduced by Assemblywoman Jackie Goldberg (Democrat, Los Angeles, District 45) on February 19, 2002.
Current status: Passage of this bill was refused in the Assembly (Ayes 29, Noes 35).
Comments: This bill would have prohibited public schools, community colleges, the California State University, and the University of California from using any school or athletic team name, mascot, or nickname that is derogatory or discriminatory against any race, ethnicity, nationality, or tribal group. Any American Indian tribal name would have been prohibited.

References
The Sacramento Bee, August 5, 2002
San Francisco Chronicle, July 29 & August 5, 2002
http://www.leginfo.ca.gov
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If members would like to contact their representatives regarding any of the
SCA Business and Activities

above legislation, e-mail contacts for the legislators are listed below:
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Assembly Member Jackie Goldberg, D-14*, Assembly.Member.Goldberg@assemby.ca.gov
Assembly Member Virginia Strom-Martin, D-1*, Assembly.Member.Strom-Martin@assembly.ca.gov
IFCA members have comments or issues regarding the above legislation or have information regarding other current legislation, please feel free to contact SCA Volunteer Coordinator Jacki Deutsch: Jacki.Deutsch@ca.gov

CASSP: Training Workshops for Archaeology Site Stewards

Chris and Beth Padov

The California Archaeological Site Stewardship Program (CASSP) recently offered two training workshops for volunteers. In June, eight new volunteers attended a two-day workshop for the BLM Hollister Field Office. BLM archaeologist Erik Zabosky participated in the training, and will serve as the group’s coordinator. The workshop was held at Clear Creek Management Area, Call Mountain-Hernandez Valley, Fort Ord National Park, and Panoche Hills Management Area. Participants were provided with training materials, and general references, so they can participate in CASSP training sessions at various sites.

The next training workshop will be held in El Centro on September 21-22. BLM archaeologist Margaret Hangan will serve as the coordinator. The workshop will be held at the Ridgecrest Field Office. Additional training workshops for 2003 will be announced as soon as arrangements are finalized. The initial training workshops last two days over the weekend and are sponsored by the BLM.

In July, CASSP held a special training workshop in Bishop. Thirteen CASSP volunteers attended, along with SCA northern vice president Richard Fitzgerald. This one-day class taught map-making skills. Steve Horne and Janine McFarland developed the curriculum, which was well organized and clearly presented. Steve did a great job teaching the class and the class was well attended. It was an excellent introduction to basic map skills.

CASSP plans to offer more of these special one-day classes for the future.

Future Research

The research has suggested that ubiquity of basalt in the northern Sierra Nevada does not necessarily correspond with a randomized collecting behavior. Initial sourcing studies concentrated on chemically characterizing known outcrops and basalt quarries as a starting point for defining primary sources of tool stone. The results of this study suggest that future studies need to address the following issues:

1. Secondary and Tertiary Deposit Identification. Geoaarchaeological survey and mapping of new basalt sources and previously identified quarry sites to identify primary source outcrops and define the boundaries of secondary deposits (deposits of materials transported by glacial, fluvial and other natural processes). Given the importance of the Alder Hill and Gold Lake Source Groups, primary consideration should be given to these geoarchaeological sources. At each source location 20 ft sized cobbles will be collected for geoarchaeological source identification.

2. Focus Research. Artifacts selected for study should be guided by explicit research questions, such as:
   a) Is there spatial patterning of prehistoric source use for specific basalt sources?
   b) Is the material for source groups geographically confined?
   c) Investigation of source use and distance to source relationships and temporal variability in source use.
   d) Investigation of source use and distance to source relationships of different classes of artifacts.
   e) Is the frequency distribution of the various basalt sources? Is it evenly spread suggesting that the material is transported as the population moves?
   f) Is the distribution of the isolated occurrences of the basalt sources?

USFS California

Figure 2: Stromatolium incrustatum ratios differentiate the Tahoe Region basalt sources

g) What and where are the source groups where no basalt procurement takes place? What is their relationship to the source groups where basalt is being mined?

3. Alder Hill Problem. More geologic material is needed from Alder Hill area including the Watson Creek, Boca Ridge, and Carnelian Canyon areas to further refine the source locations within the Alder Hill group.

4. Emigrant Ridge Problem. This geoarchaeological source group has the most extensive geographic distribution, the source locations (Emigrant Ridge, Foraker Lake, Little Grass Valley, Walker Pass) are spread across the southern part of the Plumas National Forest. Samples originally collected at the source locations was minimal. Additional source sample collections should be made at these locations.

5. Martis “Type Site.” Since the CA-PLA-A-5, the Martis “type site” located at the Martis geoarchaeological source, this geoarchaeological source needs to be mapped and additional geoarchaeological samples and basalt artifacts should be analyzed. A better understanding of this site, how the landscape surrounding it was used, and the intra-site activity will provide researchers a better understanding of how the Sierra Nevada landscape was affected.

6. Unknown Source Locations. Given the high number of unknowns it is recommended that locations in and adjacent to the Sierra Valley and within the Nevada City and Foresthill Ranger Districts areas where Tertiary and Paleozoic metavolcanic rocks are located will be given survey priority.
USFS California

from Sawtooth Ridge location over 40 miles north.

Some source locations have a very limited distribution of artifacts. Artifacts that have been sourced to the Davies Creek, Boca Spring, Independence Lake, and the Matis source locations have only been found in sites no further than five miles from the source. Dogwood and Emissary Ridge (located on the Plumas National Forest), both have archaeological components, but material from these sources have not been identified on the Tahoe National Forest. The source locations Boca Ridge, Fillmore Hill, show no signs of being used prehistorically and no artifacts have been sourced to either of these locations.

Sites along the edge of the Sierra Nevada have formed tools from one source (Gold Lake and deblitis from another (Alder Hill). Research on the Forest has now been expanded to include other formed tools, large flake thinning flakes and utilized flakes.

Table 1: List of Tahoe Region geochemical sources.

<table>
<thead>
<tr>
<th>Source Group</th>
<th>Source Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alder Hill</td>
<td>Alder Hill</td>
</tr>
<tr>
<td>Boca Ridge</td>
<td>Boca Ridge</td>
</tr>
<tr>
<td>Boca Spring</td>
<td>Boca Spring</td>
</tr>
<tr>
<td>Davies Creek</td>
<td>Davies Creek</td>
</tr>
<tr>
<td>Dogwood</td>
<td>Dogwood</td>
</tr>
<tr>
<td>Filbone Hill</td>
<td>Filbone Hill</td>
</tr>
<tr>
<td>Gold Lake</td>
<td>Gold Lake</td>
</tr>
<tr>
<td>Incline Ridge</td>
<td>Incline Ridge</td>
</tr>
<tr>
<td>Independence Lake</td>
<td>Goosenack Flat, Lake's Quary, Wayne Lo.</td>
</tr>
<tr>
<td>Matis Creek</td>
<td>Matis Creek</td>
</tr>
<tr>
<td>North-Dry Valley</td>
<td>North-Dry Valley</td>
</tr>
<tr>
<td>Sawtooth</td>
<td>Carrelian Bay, Sawtooth Ridge, Truckee River Quabi</td>
</tr>
<tr>
<td>Secret Mound</td>
<td>Secret Mound</td>
</tr>
<tr>
<td>Shiefled Canyon Ridge</td>
<td>Shiefled Canyon Ridge, Spivey Valley Drainage</td>
</tr>
<tr>
<td>Shiefled Summit</td>
<td>Lagomar, Shiefled Hills</td>
</tr>
<tr>
<td>Water Creek</td>
<td>Carrelian Bay, Carrelian Canyon, Water Creek</td>
</tr>
</tbody>
</table>

The early work suggested that there were a large number of unknowns found within the Nevada City and Foresthill Rangers Districts. These were single artifacts, each from a different source. These findings suggest that there are sources of limited use, possibly expedient finds, but surveys for source locations should be conducted to map and collect raw material for geochemical sourcing.

Recent work at Mount Ida Coolith, in the Sierra Nevada, by Sean Lenihan and Perry Fox, resulted in the collection of 12 basin samples. This small sample yielded three samples sourced to the Siegfried Source Group, one to the Gold Lake Source Group, and eight new unknowns.

Studies have been able to separate the Alder Hill Source Group and Watson Creek source based on the strontium/ zirconium ratios, but sometimes these sources are indistinguishable (Figure D). Additional non-artifactual material needs to be collected at these locations to address the problem.

Current Session’s Research and Data Collection

The basin sourcing data from the 12 geochemical sourcing projects done by BioSystems Analysis and Northwestern Research Obsidian Studies Laboratory has been entered into an Excel spreadsheet and linked to the Forest’s site location coverage to create a new sourcing function.

volunteers do a better job—by teaching new skills and by providing an event where volunteers can gather and share experiences with each other.

For more information about the CASSP initial training workshops, or about the CASSP advanced workshops, visit www.cassp.org on the Internet, or call Beth Padon at (562) 492-6770. Also, use these contacts to apply for a one-year subscription to the free CASSP newsletter, available quarterly.

Native American Programs Committee Update

Janet P. Enos, Chairperson

My sincere apologies to those who may have been offended by the “Guidelines for Archaeologists Who Work With Native American Monitors” printed in the June 2002 SCA Newsletter 36:2.13. These Guidelines are not the product of the Native American Programs Committee, nor are they officially sanctioned by the SCA. Rather, I developed these “suggestions” in consultation with several Native Americans and archaeologists for a recent workshop where Native Americans were being invited to participate in archaeological surveys and test excavations for a Section 106 compliance project in their ancestral territory. When developing the course curriculum and training manual, I learned that the Native American attendees had little or no prior experience working as monitors or with archaeologists, and the archaeologists were to include recent college graduates who had little or no previous working with Native Americans. The question had come up in a recent field context, “just what is our role or job and relationship to each other?” The suggestions I drafted for the novice archaeologists and Native American Monitors were in response to this question, in this contextual setting. In addition, I felt it was important to offer suggestions for archaeologists, as a counterpoint to the Native American Heritage Commission’s Guidelines for Monitors/ Consultants of Native American Cultural, Religious, and Burial Sites adopted in 1989, among other useful guidance.

The new CASSP team at Hollister during their field trip.

Avocational Committee

Jerry Dudley

We hope everyone had a great summer and were able to participate in some activity involving avocational archaeology. Our societies were busy with field trips, presentations and other projects that have benefited both the community and the profession.

We are looking ahead to the SCA meeting in Sacramento in March and our annual round table luncheon, time and date to be announced. This year the avocational societies will be sponsoring a poster session and will likely have many societies and avocational organizations to join in the fun. The posters will be involved with some aspects of the early days and history of our societies, so look for those old photos etc. to make up a great poster. More information will follow at a future date on the content for the posters.

Want to remind everyone that the Data Sharing meetings in Santa Cruz (October) and Santa Barbara (November) will be a great opportunity for educational presentations and camaraderie.

Developed by other California Indian Tribes, organizations and individuals. Taken out of context, I can understand why some readers felt that the language was condescending and overly simplistic. What I find truly marvelous is that as time goes by, more and more Native Americans and archaeologists work together on heritage resources management projects in California—and there are many who have been doing so for decades, enriching us all by helping us understand and respect the different perspectives.

Figure 1: Location of Tahoe Region geochemical sources (adapted from N.M.OL 2002).

SCA Business and Activities

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SCA Newsletter 36:2

9

SCA Newsletter 36:3

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Candidate Position Statements

Biographical Information and Position Statements

Candidates for the Executive Board
Society for California Archaeology, 2002 Election

For President
For Southern Vice-President
For Secretary

Tim Gross
Margaret Hangan
Terry Jones

For President

Tim Gross

Education: I have been involved in California Archaeology since I was a high school student. My BS is from San Diego State University (1976), and my MA (1980) and PhD (1987) are from Washington State University. I have worked in most of the western states, but the majority of my archaeological experience is in California, Colorado, and Washington State. My Masters research was conducted in the Siwa Oasis Region of Northwestern Egypt.

Professional Background: I am currently a consultant, though I also make part of my living through grant-funded research, and I teach from time to time. I have worked for Affins for 14 years, and prior to that I worked for other firms part-time. I have worked as an independent contractor, performing lithic and shell analyses. Notable past employment includes the Dolores Archaeological Program in southwestern Colorado, where I served as a field supervisor and as Excavation Coordinator and Publication Manager. I am a founding board member for the San Diego Archaeological Center.

Positive Statement: I am generally pleased with the directions the SCA has taken in recent years, particularly with regard to public education, Native American outreach, and interaction with avocational societies. The issues about which I am currently passionate include increased interaction with Native Americans and the development of mutual understanding and respect between archaeologists and Native Americans; the curation crisis and its solutions; coping with the vast gray literature; and encouraging dialog between the consulting community and the academic community. Ties from across the areas I would like to help the SCA address if I am elected. It is also important for the Society to remain vigilant. We must continue to monitor proposed legislation and make sure protection of our past is not sacrificed in the name of affordable housing, national defense, or dwindling budgets. I appreciate having been nominated and would be proud to serve the diverse SCA membership.

Amy Gileareth, Vice President, Far Western Anthropological Research Group, Inc., Davis, CA

Education: M.A. 1983 Washington State University

Positive Statement: In contrast to some previous intervals of upheaval and change, this is a time of healthy stability for the SCA. The Newsletter is as good as it has ever been. Each issue reports on the status of different formal and informal committees within the organization and emerging issues of particular concern to us. It presents diverse perspectives from within our membership, ranging from our elders to students, from avocational, to contractual to collegial, and from Native Americans to ethnographers and historians. Our Annual Meetings, now approaching their 56th year, run like clockwork and participation has never been higher. And, the organization operates (nearly) in the black – a certain sign of a mature, nonprofit organization.

It is sound advice to appreciate a good thing when we have it. If chosen to serve as president, my abiding objective is to maintain this stability. The best way to achieve this is by implementing decisions that reflect membership's positions, while promoting membership growth so that we gain new personalities and fresh perspectives. I intend to work hard at expanding our membership, while at the same time doing what I can — within reason — to see that those

Basal Distribution Findings on the Tahoe National Forest
Donna Day
Tahoe National Forest

The spatial distribution of artifacts is influenced by a variety of cultural and environmental factors. Any interpretations of patterns that can be identified provide valuable information about both cultural preferences and environmental opportunities for procurement. Since basalt is the dominant toolstone found in sites across the Northern Sierra and even though basalt outcrops appear to be more geographically widespread than obsidian, the ability to source tools manufactured from basalt is still considered to be a key to help in the understanding of land use patterns.

Additionally, the geological maps for the Tahoe National Forest indicate that the outcrops of basalt are actually limited in extent, suggesting high potential for geochemical characterization studies. Basalt XRF analysis, though still in its infancy, is developing as another tool for researchers in the Northern Sierra as well as the Eastern Sierra Front, Nevada, Oregon, and the Pacific Islands (NWROSL 2002).

Characterization of Basalt

In the early 1990s researchers conducted the first basalt sourcing study for this region in the Truckee area, by Latham, Sutton and Veroski (1992). This pioneering study was able to demonstrate that basalt from various volcanic series could be differentiated. About the same time, under a Forest Service contract, Tom Jackson and Kathy Davis, then of BioSystems Analysis, began working with archaeologists from the Tahoe, Eldorado, and Stanislaus National Forests and Lake Tahoe Basin Management Unit to identify sources of basalt and geochemical characterize basalt artifacts.

In the early years, the sampling began by collecting at least ten first-sized chunks of non-artificial basalt from known basalt outcrops and quarries and the geochemical fingerprints for each outcrop could be identified. Samples were then taken from existing collections. This latter sample consisted primarily of temporally diagnostic basalt artifacts and bifaces. These early efforts were aimed at determining if all sources of basalt were exploited and if there was any spatial patterning of artifacts by source in an effort to identify prehistoric use of specific basalt sources.

Methods of Analysis

Basalt artifacts are prepared and analyzed in the same manner as obsidian artifacts are prepared for energy-dispersive x-ray fluorescence analysis. Studies have shown that geochemical foot-printing of powdered basalt samples and intact flakes indicate that non-destructive analyses of basalt yield similar results to those generated by destructive techniques (Jackson et al. 1994; Latham et al. 1992; Weisler 1993), therefore, nondestructive methods are being used in these studies.

A number of basalt samples have been submitted for analysis of a suite of trace- and minor element concentrations, including elements from the rubidium family, aluminum and manganese. When barium concentrations are measured, specimens can be analyzed with an Americus 241 source, rather than irradiating the sample with a k-XRF. Adequate segregation of chemical groups that has been defined thus far is achieved using strontium to zirconium ratios. Initial concerns that sample surface effects could skew XRF concentration measurements, seems to be less of an issue than originally believed, and appears to be no more of a concern than in obsidian studies. However, weathering of basalt samples does appear to be a potential problem, the effects of weathering and windblown chemical erosion is an area that bears further investigation (Day et al. 1996).

Results

Since it became apparent that chemical identification of basalt sources was a viable analytical tool, an additional 11 geochemical studies have been conducted within the Tahoe National Forest. For these studies, the Forest has been sourcing basalt artifacts collected from both surface deposits and excavated archaeological sites to further refine our understanding of the spatial patterning of prehistoric base use for specific basalt sources. These geochemical studies have demonstrated even though basalt source locations have a relatively homogeneous trace element composition, that there is sufficient inter-source variability to allow for the identification of a variety of raw material sources.

The first major assessment of basalt distribution (Day et al. 1996) suggested that the Gold Lake Source Group and Alder Hill Source Group are the most significant sources for basalt toolstone for the Northern Sierra. Additionally the study concluded that there is a nonrandom distribution of material from these sources.

Over 90% of artifacts manufactured from Gold Lake basalt is found northwest of the Middle Yuba River and Alder Hill is found east and south of the Middle Yuba River. The Gold Lake basalt shows a predominately east-west movement from the quarry locations downslope. The Alder and Sawtooth basalt mounds in nearby a southerly direction following the eastern side of the Sierra Crust.

The subsequent eight years of research have resulted in the identification of 17 geochemical source groups and 28 source locations within the Northern Sierra Region (Figure 1, Table 1).

Distribution of sources such as Watson Creek and Sawtooth Ridge appear to be confined to the Lake Tahoe Basin and south of the North Fork of the American River. Over one third of the basalt on one site is the vicinity of the Hell Hole Reservoir, Eldorado National Forest, originated.
population stress indicators in the faunal assemblage at CA-
Teh-1722, increasing conflicts between the Nomlaki and
neighboring Yuki near the crest of the North Coast Ranges
(Goldsmith 1951); and, resource intensification strategies,
increasing sociocultural complexity, and attendant population
aggregation centered at lowland residential sites. Thus, the
upland expansion by the Nomlaki may have been short-lived
c(a 1090 – 350 years B.P.), and then followed by a retraction
to lower elevation settlements and less intensive occupation
and use of the uplands. Only additional research will help
clarify these issues.

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of California, Berkeley.

Candidate Position Statements

For Southern Vice-President
• Terry L. Jones, Assistant Professor of Anthropology, Department of Social Sciences, California Polytechnic State
University, San Luis Obispo
Education: Ph.D. Anthropology, University of California, Davis, 1995; M.A. Anthropology, University of California Davis,
1989; M.A. Cultural Resources Management, Sonoma State University, 1982; B.A. Anthropology (with honors) and
Environmental Studies, University of California, Santa Cruz, 1978.
Professional Background: Assistant Professor of Anthropology at Cal Poly since 1998; Associate Environmental Planner
Cultural Resources Specialist, California Department of Transportation 1986-1998; Member, Registry of Professional
Archaeologists, certified in field research since 1986. Over 20 years experience in cultural resources management and
California archaeology.
Research Interests: California prehistory, hunter-gatherer ecology, maritime adaptations.

Position Statement: Over the last several decades, the SCA has grown into a large, diverse, and fabulously successful
organization devoted to the study and conservation of California’s unique archaeological record. The multitude of
activities coordinated by the society including publication of a professional-quality Newsletter, and organization of
well-attended, informative annual meetings is nothing less than remarkable for an all-volunteer enterprise. The
primary role of vice presidents is to organize the northern and southern data sharing meetings. These annual get-
togethers play a crucial role in advancing archaeological research at the local and regional level and in maintaining
continuity within our discipline. I would like to assure that these meetings continue to provide a forum for
presentation of key research findings in relaxed, informal and interesting settings.

• Margaret Hangar, Bureau of Land Management, El Centro
Education: I received my BA in 1989 from Pitzer College in my home town of Claremont, California. Currently enrolled
in the Masters program at CSU, Bakersfield and am very close to completing my master’s degree.
Professional Background: I worked for seven years as a seasonal in CRM starting out in the Great Basin then returning to
California. I am presently working for the Bureau of Land Management in El Centro, California.

Position Statement: Over the last year or so, I have made a conscious effort to get involved with the SCA. I have come to
realize that if I am going to be an effective manager of cultural resources, then I must look beyond my own borders. I
believe that the SCA will help me to achieve that goal. I am honored to be asked to run for Southern Vice Chair for the
SCA. Should I be elected, I will do my best to benefit the SCA and the archaeology of California.

For Treasurer
• Stacy Schnyder Case. Staff Historical Archaeologist, Jones & Stokes, Sacramento
Education: M.A. Cultural Resources Management, Sonoma State University, Rohnert Park 2001; B.S. Anthropology,
Oregon State University, Corvallis, 1998.
Professional Background: Staff Historical Archaeologist and cultural resources specialist for Jones & Stokes, Sacramento
(2006-present); Historical Archaeology Field Director and Instructor for the Washington College Archaeological
Field School, Maryland (Summer 2002); Archaeological Technician for the Anthropological Studies Center, Rohnert
Park (1998-2000); Archaeologist for the Willamette National Forest, Oregon (1997-1998); Anthropologist and
Laboratory Manager for Oregon State University (1994-1998); Society for Historical Archaeology Membership
Committee Member (2001-present); SCA Membership Committee Chair (2002). Register of Professional
Archaeologists (2001-present). Over 7 years experience in historical archaeology and cultural resources management
in the western United States.
Annual Meeting

Research Interests: Ethnic communities and labor camps in the West, Western migration, urban archaeology, African American Archaeology, and public education.

Position Statement: Continued financial responsibility and funding is vital to the continued growth and success of the SCA. It is my goal to assist the SCA with managing their finances and to become further involved in our organization. My experience working within CRM over the past several years has involved managing multiple project budgets (large and small), invoicing and collecting, and working with other archaeologists as well as planners, Native Americans, and students often on complicated projects. The result of this varied experience is that I am excellent at managing budgets and tackling difficult accounting issues, working well with people and enjoying working as a team, and I am exceptionally well organized. The office of SCA Treasurer is very important and I am highly motivated and am eager to tackle the responsibility of the position and I feel like I could bring a great deal of enthusiasm, perseverance, and skills to the SCA Board.

Society for California Archaeology
37th Annual Meeting,
27-30 March, 2003, Sacramento

First Call for Papers

Proposals for the 37th Annual Society for California Archaeology Meeting symposia, workshops, papers and posters are being requested. The meetings will be held in Sacramento on March 27 through 30, 2003. The symposia and workshop proposal deadline is November 29, 2002. Proposed symposia should be submitted as a package with abstracts and forms for all papers. Contributed papers and poster deadline is December 23, 2002. This year’s theme is “Discovering our Roots” and the Program Chair would like to encourage academic institutions, avocational societies or agencies to submit poster abstracts regarding the history of their respective archaeology programs. We would like to encourage potted plant posters around this theme. The maximum length for organized symposia and contributed papers is 15 minutes. Please contact the Program Chair if you have any questions about proposed sessions or other presentations.

Participants are limited to being senior authors on only one presentation, but they may be junior authors on additional papers. Please note that participants must supply their own equipment for audiovisual needs other than slide or overhead projectors. Please use the proposal form found on the facing page, or proposals can be submitted electronically via www.SCA.net. Direct mail or e-mail attachments to the Program Chair are also welcome. Proposals may include the hard copy form included in this issue of the Newsletter, but submitters are required to submit an electronic copy of their abstract (PC format). Abstracts should be no longer than 100 words.

For further information or assistance, please contact the Program Chair:

John Hobson
Pacific Legacy, Inc.
1027 San Pablo Avenue
Albany, CA 94706
hobson@pacificlegacy.com

Conclusions

This research has clearly identified substantial Late Period occupation at the two mid-elevation sites in the Thomas Creek watershed. Settlement was probably of a seasonal nature, but the duration of site use is unknown. These sites may have been used for prolonged periods of time by a single group, or repeatedly visited between spring and fall by one or more groups. The variety of artifact types and representative activities, hidden depths, and the presence of various features and interiors may favor extended residential periods.

Returning to the timing of Nomlaki settlement in the uplands of the North Coast Ranges, initial proto–Nomlaki or Nomlaki occupation at the Thomas Creek sites appears to be marked by two radiocarbon dates, 1070 ± 80 B.P. at CA-Teh-984 and 1990 ± 40 B.P. at CA-Teh-1722. Absent from Late Period contexts at CA-Teh-1712 and CA-Teh-984 are Phase 2 Late Period markers more commonly found in the north-central Sacramento Valley between A.D. 1500 – 1800, including Desert Side-notched projectile points, clamshell disk beads, Halcinite ornaments, flanged pipes, magentic beads, Glycine pendant, and other temporally sensitive artifacts (Johnson 1990; John and Dondero 1990; King 1989; Muratore 1984; Sundahl 1982).

The absence of these artifact types, together with another radiocarbon date of 440 ± 60 B.P. from the 20-30 cm level at CA-Teh-984, suggest that both of these sites were likely abandoned by A.D. 1600. Whether these data reflect a broader pattern, such as a change in mid-elevation settlement and use, or perhaps abandonment of the uplands, cannot be addressed yet. Some of the possible explanations for site abandonment include: a change in the economic productivity of the area, suggested by possible USFS California

Figure 4: Shaped pestle from Teh-1722.
USFS California

interment burning practices have been reported for the Nomlaki (Goldschmidt 1951), and both practices have been identified archaeologically at Nomlaki cemeteries (Johnson 1990:77-79; Johnson and Dondero 1990:51-52).

CA-Teh-984 is a dark midden approximately 30 x 40 meters in size located on a bench adjacent to a spring at approximately 3100 feet in elevation. About ten cubic meters of deposit were excavated in 1999 and 2000. The deep midden (130 cm) contains numerous artifacts, good bone preservation, and several features, such as fire hearths, possible house floors, and human interments. Late Period artifacts include hopper mortars, flat-ended pestles, bone awls, spire-topped Officella shell beads, Gunther Barred projectile points, Rattlesnake Series projectile points (few), obsidian and chert winged drills and bifaces, and chert scrapers. Uncorrected radiocarbon dates of 1070 ± 80 B.P. (A.D. 880) (Beta 135940 (charcoal) from a depth of 80-90 cm and 440 ± 60 B.P. (A.D. 1510) (Beta 19541) (charcoal) from a 20-30 cm level confirm Late Period deposits. Temporal comparisons were also provided by obsidian hydration readings. Obsidian hydration readings (GF/LW) (n=63), from alternating levels from two units and scattered tools, exhibit relative consistency throughout the deposit, ranging from ~2.81 microns for the 10-20 cm level to ~3.78 microns for the 10-120 cm level. These results coupled with radiocarbon dates clearly suggest that the principal occupation of the site occurred during the Late Period.

X-ray fluorescence analysis of 89 specimens including tools and debitage provided the following distribution of sources: GF/LW (55%), Borax Lake (45%), and Tuscan (2%). The predominance of GF/LW obsidian, whose source is nearly twice the distance as that of Borax Lake (ca. 125 versus 65 miles), suggests greater social interaction to the north than to the south, at least with respect to obsidian exchange. Of interest is the poor representation of Tuscan obsidian, a close source located in the Redding area. These results are puzzling because of its predominant use among Winu populations to the north, and its importance among neighboring lowland Nomlaki populations, particularly during Phase 2 of the Late Period (post A.D. 1500) (Dondero and Johnson 1988; Johnson 1990, Johnson and Dondero 1990). It may be that Tuscan obsidian becomes more important than GF/LW during the latter part of the Late Period, a time not well represented in the sites investigated.

Settlement and Subsistence

Likins’ (2002) analysis of the faunal assemblage from CA-Teh-1722 has provided some provocative results. Faunal remains were analyzed from about a third of the excavated deposit. Of the 4886 specimens analyzed, only 14% were identifiable to order or species, and most of these appear to be deer (Odocoileus). Likins suggests that bone fragmentation, and the percentage of burned or calcined bones (46%), not only suggests marrow extraction, but also extensive processing to extract bone grease, a good source of fat. This pattern is particularly prevalent in the upper levels of the site, and Likins (2002) suggests that this could be evidence of a period of economic stress.

Hill and O’Brien (2002) and Thomas (2002) have also completed preliminary studies of CA-Teh-984’s faunal collection. Hill and O’Brien (2002) analyzed about 3400 bones with only 5 percent identifiable to order, family or genus. Most were identified as Odocoileus (25%) skeletal elements. There is evidence for marrow extraction at the site, but not the extensive fragmentation and calcined bone evidence noted at CA-Teh-1722; only about 14% of the identifiable specimens were burned. Hill and O’Brien (2002) note that the almost exclusive location of cut marks on the ends of long bones and within limb joints suggests disarticulation rather than meat stripping was the primary processing goal. Coupled with the low incidence of burned bone, they contend that the consumption of meatier elements should be more common at CA-Teh-1722. For CA-Teh-984, Likins’ (2002) analysis of the faunal assemblage from CA-Teh-1722 has provided some provocative results. To determine the extent of burnt bone at both sites, a count of all burned elements was conducted. Hill and O’Brien (2002) noted that the almost exclusive location of cut marks on the ends of long bones and within limb joints suggests disarticulation rather than meat stripping was the primary processing goal. Coupled with the low incidence of burned bone, they contend that the consumption of meatier elements should be more common at CA-Teh-1722.
New Fire Effects Publication

A new publication is available free of charge:


Contact: Kirk Halford, Bishop Field Office archaeologist, at 760-872-5930 or e-mail khalford@bpa.blm.gov

NAHC Requests Your Support

Larry Myers, Exequistic Secretary
Nativo American Heritage Commission

Many of you are aware of the state’s current fiscal crisis. The Administration has announced plans for a 20% reduction in state services that would be devastating to the Commission. This means that approximately $65,000 would be eliminated from the budget. The Commission would be forced to cancel all travel, eliminate commission meetings, and would have to reduce staff. That means the office would then be reduced from four to three or possibly two staff. In effect, this would bring the operations of the commission to a halt.

These reductions are worse on the Commission and the Indian people we assist because this office never did recover from the Wilson cuts. The commission was never made whole nor was it allowed to grow like other state agencies.

Your help is needed to convince the administration that the Commission must be exempt from funding reductions. Send your comments to David Rosenberg, Office of the Governor, State Capitol, Sacramento, CA 95814.

Cal Poly Field School Update

Robert L. Hoover
Exca-vations at Mission Santa Inés, 2002

Over the years, the authorities at Mission Santa Inés have noted traces of a stone cobbles footing in the field immediately north of the church cemetery; an area use today for the celebration of the annual fiesta. Crews placing underground water and power lines in the past have encountered this feature. In order to define the footing and avoid future disturbance of it by construction, the Mission requested that I conduct limited excavations with a volunteer crew in the field to the northeast of the cemetery in Spring, 2002. Crew members were recruited from Mission La Purísima’s Prehistory, de los Tezontes, the Ventura County Archaeological Society, and various individuals. We began to expose the tops of the cobbles footings, trace the course of the wall, and map for future planning purposes. Excavation was by one meter squares, using hand tools and one-eighth inch mesh screens. The project was not initiated to satisfy any federal or state requirements, nor were any funds received from these sources. A Chamise monitor from the nearby Santa Ynez Reservation was present during the work and was the only paid member of the project.

The massive cobble footing was encountered immediately, at a depth of 30 cm and extended from north to south for at least 25 meters. So far, we have no evidence of building corners or internal partition walls. Thus, neither length nor width of the structure can yet be determined. However, such an enormously long continuous room is somewhat unusual. Artifact yield was sparse and consisted of objects consistent with the Mexican and American periods — English and Chinese ceramics and iron building hardware, primarily hand-forged nails. These are mixed with recent debris from parish activities.

The building is the presumed location of the 1825 soldiers’ barracks of the Mexican period, rebuilt after the clamshell disk beads (ca. post-A.D. 1500), spire-lipped Olivella and Glycymeris shell pendants, pine nut beads, Halosites ornaments, arrow shaft smoothers, and a variety of other artifacts (Dondero and Johnson 1988; Johnson and Dondero 1990; Johnson 1990; Morato 1984; Sundahl 1982). Principal sites were located along major rivers, and fishing, acorn gathering and storage, and hunting dominated the economy. Extensive exchange networks and socio-cultural complexity are also hallmark of the Late Period.

Nomlaki Research Program

Mendocino National Forest’s research interests in ethnographic Nomlaki territory have focused on Late Period settlement and subsistence patterns, chronology, exchange relations, and technology. One central research issue has centered on the timing of the Hill Nomlaki expansion into the uplands of the North Coast Ranges along the western edge of the northern Sacramento Valley, following the hypothesized initial Wintun entry into north-central California sometime after A.D. 100 (Whitster 1977). The Wintun entry has been of interest to archaeologists for some time, largely because it is often used to explain the displacement of earlier populations, technological changes noted in the archaeological record, and later influences on socicultral elaboration (Johnson and Theodoratos 1984; Morato 1984; Whitster 1977).

Alder Spring Site

CA-Gle-177 offers a good contrast to the Thames Creek assemblages described below. Ethnohistoric information identified Alder Springs as the western most limit of Nomlaki settlement and the brindle Creek watershed. Late Period occupation at this midden site, situated at 4100 feet in elevation, is located on a terrace overlooking the Brooks source (about 50 miles southwest) obsidian hydration readings and a few stylistic artifacts. Several small, side-notched projectile points (B1), an uncommonly drilled slate table and, several edge-modified, cobble spall tools appear to be associated with shallow Late Period deposits (less than 50 cm). Nomlaki affiliation, however, remains problematic. If ethnohistoric information is accurate, however, then Late Period use at this site is more ephemerial than many other sites and more ephemeral in land use patterns. Principal occupation at Alder Springs appears to be more than 1500 years old. Most projectile point styles and ground stone implements, such as metates and manos, share similarities to earlier, pre-Wintun assemblages, and are more likely affiliated with the Yuki who historically occupied the territory west of the crest.

Thomas Creek Sites

Located in a glade north of Thames Creek at 3200 feet in elevation, about 10.3 cubic meters of deposit was excavated at CA-Teh-172 in 1996 and 1997. Although it appears that primary occupation at the site occurred during the Late Period (ca. A.D. 1000 - 250 B.P.), radiocarbon dates, obsidian hydration readings, and temporally sensitive artifacts suggest that this period of occupation started during the Middle-Late Transition Period (ca. A.D. 700 – 900 [Bennhoff and Hughes 1987:149]). Limited evidence of site use during the earlier Middle Period also exists based on a few temporally sensitive projectile point styles and obsidian hydration readings, but Late Period occupation is clearly predominant. Two uncorrected AMS dates from the site: Late Period occupation: 1900 ± 40 B.P. (A.D. 780 – 940), 207 ± 51 (Beta 159558) from the 40-50 cm level near sterile; and 940 ± 40 B.P. (A.D. 930 – 1060, 207 ± 51 (Beta 159559) from another 40- 50 cm level.

The Late Period assemblage at CA-Teh-172 includes numerous Gunther Barbro projectile point, M1a rectangular Olivella seashell beads, hopi mortar and pestle, a stone pipe fragment, bone awl, and perforated and incised slate ornaments (Figure 3). X-ray fluorescence data reveal a greater occurrence of the Grasshopper flat/lost iron Wells (GF/LW) obsidian source, located about 125 miles distant, when compared to many other sites in the Mendocino National Forest where the Borax Lake source predominates. At least 70 cm of the one-meter deep midden deposit appears to equate to the Late Period based on radiocarbon dating and obsidian hydration readings. If one were to use age approximation rates developed in the Sacramento River Canyon to the north (Dansgaard and Hildebrandt 1989:298), the mean hydration value for Gunther Barbro projectile points at CA-Teh-172 (GF/LW = 2.26 microns, s.d. ± 0.44, n=12) would roughly equate to circa A.D. 890 – 900. While the equivalency of hydration rates between the two localities has not been determined, this time period corresponds with radiocarbon dates from the site.

Although few in number, a variety of Olivella shell beads were recovered, including spire lopped, rectangular M1a, and F/a square saddle type beads. Several spire-lopped Olivella A beads were recovered from CA-Teh-172 and this type is so broad as to be an effective temporal marker in central California (Bennhoff and Hughes 1987:119). Rectangular M1a seain beads are considered a good temporal marker for Phase 1 of the Late Period (ca. A.D. 900 – 1300), but they also occur a little earlier during the Middle-Late Period Transition (ca. A.D. 700 – 900) (Bennhoff and Hughes 1987:140, 149). Type F/a square saddle beads, considered good indicators of the Late Period (ca. 1000 B.C. – A.D. 700), also occur during the Middle-Late Period Transition (Bennhoff and Hughes 1987:131, 149). Chertace from a post-depositional grave pit bearing event (40-50 cm) associated with an unexcavated infant interment whose burial pit extended through sterile soil at 90 cm, was AMS dated at 1090 ± 40 B.P. (A.D. 780 – 940, 207 ± 51 (Beta 159558). More than seven F/a square saddle beads were directly associated with this interment. Post-interment grave and/or post- interment grave pit burning are a Late Period funerary practice among some groups (Morato 1984; Johnson 1990; Johnson and Dondero 1990). Pre-interment and post-
throughout the Thomas Creek watershed suggest periods of prolonged settlement and use, particularly late in time. Most sites were likely used during the late spring to early fall by Nomlaki populations who dispersed from large, winter residential sites in the lowlands and moved into the mountains to gather food and other resources (Goldschmidt 1951).

Meighan’s (1955) was the first to propose a broad cultural-temporal sequence for the North Coast Ranges. Meighan’s “Shasta Complex” (ca. A.D. 1400) was the taxonomic unit for the Late Period in the northern part of the North Coast Ranges. Edwards (1969) later incorporated the “Shasta Complex”, assigning it a date of ca. 1200 B.P. to historic, into his chronological sequence for the “Shasta Complex” locality in western Tehama County. Frederickson’s (1973, 1974) more integrative framework replaced Meighan’s, but it still incorporated the “Shasta Complex” as its Late Period construct in the North Coast Ranges. Since these early studies, the “Shasta Complex” has been widely used to categorize Late Period assemblages in the northern Sacramento Valley and adjacent regions, although many researchers now limit its use to assemblages found in ethnographic Wintu territory (Sundahl 1982; Dondero and Johnson 1988). Recent debate about the “Shasta Complexes” taxonomic value (Sundahl 1982; Dondero and Johnson 1988; King 1989), however, has led some to argue that its use be either abandoned entirely (King 1989), or incorporated into other integrative frameworks (e.g., Redding Aspect of the Augustine Pattern [Bennyhoff 1994:73]). The Thomas Creek assemblages described here will simply reference their Late Period affinity, with taxonomic refinements to follow later after all analysis is completed.

In the northern end of the Sacramento Valley and adjacent uplands, the Late Period is predominantly after A.D. 500/900. The Late Period in northern California may have begun as early as A.D. 300-500 in some areas, or possibly as late as A.D. 900-1800 (Bennyhoff and Hughes 1987:147, 149). The Late Period in the northern Sacramento Valley is generally marked by: the use of the bow and arrow, Gunther Barbed projectile points, Desert Side-notched projectile points (post-A.D. 1600), hopper mortars, shaped pestles, bone awls, flanged tubular pipes, pre-interment burning, buried bodies, through the relationship between archaeological and historical records. The study was designed to provide a more complete understanding of the archaeological and historical records of the area. The project was conducted in collaboration with local and federal agencies, including the Bureau of Land Management, the National Park Service, and the California Department of Parks and Recreation. The project was funded by the National Park Service, the California Department of Parks and Recreation, and the State of California. The project was directed by Dr. Robert Edwards, a renowned archaeologist, who oversaw the project from start to finish. The project was conducted in collaboration with local and federal agencies, including the Bureau of Land Management, the National Park Service, and the California Department of Parks and Recreation. The project was funded by the National Park Service, the California Department of Parks and Recreation, and the State of California. The project was directed by Dr. Robert Edwards, a renowned archaeologist, who oversaw the project from start to finish. The project was conducted in collaboration with local and federal agencies, including the Bureau of Land Management, the National Park Service, and the California Department of Parks and Recreation. The project was funded by the National Park Service, the California Department of Parks and Recreation, and the State of California. The project was directed by Dr. Robert Edwards, a renowned archaeologist, who oversaw the project from start to finish.

Excavations at Mission San Antonio, 2002

For the third year, California Polytechnic State University continued excavations of the married neophyte dormitory east of the church. We have moved progressively each year since 2000 toward the east from the end of the building, systematically investigating this wing room-by-room. This year we had some surprises in store. Unlike last year’s room, our two new rooms do not appear to have had ladders floors or, if they did, they have been since removed. The two newly-exposed rooms were also somewhat smaller than those of the 2000-2001 seasons. The back (north) wall of the rooms serves to enclose the mission orchard and seems to be a simple extension of the wall encountered in earlier years. It has the same massive cobble footing topped with shale slabs. However, the front (south) wall is set back from the line of its counterpart in the rooms of the earlier years, indicating shallower rooms this year. This clearly represents a separate stage of construction when compared with the earlier rooms. We have always had difficulty interpreting the ambiguous annual building reports to determine exactly which rooms were added to the wing in particular years. Now, archaeology may provide the answer! Even the partition wall between our two new rooms abuts but does not bond with the exterior wall.

As in past years, most artifacts from our rooms occur on or just above Spanish floor level under the collapsed tejas. This year, there was a high frequency of beads – both tiny glass beads of several colors and Otilla shell disks or spike-ground beads. Square hand-forged nails were also abundant. Two iron hoist blades were recovered near the corner of, one room. Ceramics were largely Hispanic in origin – majolicas, Galera-Ware, and locally-made Mission Ware. English and Chinese sherds were much less frequent than in the 1976-78 excavations. This fact would suggest an earlier date of occupation for the 2002 rooms, certainly before 1805, when trade patterns began to change.

Our wonderful class represented students from Berkeley, Vassar, Pennsylvania, Texas (Austin), Alabama, Colorado State, Wichita, Arizona, Fullerton, Cuesta College, and Sun Luis Obispo. Sarah Finn (’98) served with distinction as Laboratory Director, while completing her Masters thesis on the relationship between conversions and ecology at the site. Veterans of past years at Mission San Antonio may be surprised to learn that I am getting “soft” in later years. This year the class worked under the shade of two large canopies which I was constantly moving with the shifting sun to protect tender shoulders from blisters. This caused the suggestion that our field school motto be “Sust ambra Fervorum” (in the shade we flourish). We even had an ice chest with bottled water and Gatorade next to the excavations! Two able EMs in the class tended nodels, spanned ankles, and sprained muscles. A far cry from our early days. “It’s tappors, it’s moar!” (Oh, the times, oh, the consternation). Next year, we will complete the other half of our rooms for a complete picture of room dimensions and content.

A Northern Invitation
Rob Edwards

This is an early “Welcome to Cabrillo College” for the Fall 2002 Data Sharing Meetings. In addition to the interesting presentations and discussion, I wanted you to know about some other attractions in our wonderful vacationland, and I hope we will entice you to bring family and friends.

On Saturday mornings we have an exceptional Farmer’s Market at Cabrillo. It starts at 7:15 and runs until noon. The Market offers an abundance of fresh (and mostly organic) produce, smoked sausage and nitrate free bacon, fresh fish, flowers and potting plants and herbs, and live music. Many stands offer tastes and samples. The weekend of the Data Sharing the Santa Cruz Beach Boardwalk goes to a winter schedule, open 12-5:00. There’s a new roller coaster and a carousel that is on the National Register. Lots of good, greasy, trash food, yum yum. Niente Marks State Park is about one mile from Cabrillo. Beautiful trails through the redwoods. You can even bike up to the epicenter of the Loma Prieta earthquake and see trees that were tossed about like toothpicks. Roaring Camp Redwoods is up in Felton, and you can ride a steam train from downtown to the camp. Great picnic place and row of the redwood country. The best buys on motels are along Ocean Street in Santa Cruz (about seven miles from Cabrillo), or in Watsonville, about the same distance south on Highway 1.

Don’t forget our beach picnic planned for Saturday evening. While October can be the best time of year along the Monterey Bay, the evenings can be very cool. Bring layers to put on.

I can be reached at Redwards@cabrillo.edu or at 831 479 6294 if you have questions.

I’m looking forward to seeing you all.
Data-Sharing Meetings

NCDSM Information
The Northern Data Sharing Meeting will be held at Cabrillo College in Aptos on Saturday October 26, in the Forum Room (Bidg. 450). Our hosts will be Bob Edwards of the Archaeological Technology Program and Ahtion Environmental Inc. In a slight departure from the past, this year’s meeting will be divided between a roaming session of general papers from Northern California, followed by a more focused session on current research of Northern California coastal archaelogical. This afternoon session will have fewer papers and allow for an open-ended discussion on issues raised during the session. Please send a brief abstract, title, and author and author’s affiliation to Richard Fitzgerald, Cabrillo, Dr. 641, 111 Office of Environmental Planning, 111 Grand Ave. Mail Station 6 D Oakland CA 94625-0600. FAX 510-286-6374, E-mail richard_fitzgerald@dot.ca.gov. Papers should be no longer than 15 minutes. Time allowances on papers presented will be strictly enforced.

Directions to Cabrillo College
http://www.cabrillo.cc.ca.us/instruct/ttlc/map/cabarmap.html

From the North, take Highway 7 to Highway 9. Continue south on Highway 1 to Capitola/Park Avenue exit. Turn left on Park Avenue (heading towards the mountains). Turn right on Soquel Drive. Proceed approximately 1 mile and Cabrillo will be on left.

From the South, take Highway 1 North to Capitola/Park Avenue exit. Turn right on Park Avenue (heading towards the mountains). Turn right on Soquel Drive. Proceed approximately 1 mile and Cabrillo will be on left.

Northern Data-Sharing
2002 Northern California Data-Sharing Meeting
October 26, 2002
Cabrillo College, Bidg. 450
Aptos, California

8:00-8:30 Coffee and Greetings to Attendees
8:30-10:45 General Papers
10:45-11:00 Lunch
11:00-1:00 Coastal Papers
1:00-2:30 Open Discussion
3:00-3:30 Beach Barley Pop Festival and Cookout

Labatory and Data Practices
Important Features. Some types of materials from important features are discarded after being analyzed, catalogued, counted, and weighed. Identification of these materials is based on the lack of long-term research values, excessive quantity, poor condition, and/or health and safety risks. The discarded types can include the following:

- Window glass
- Glass lamp chimney body fragments, undiagnostic bottle fragments, undiagnostic glass fragments
- Nails (after being identified by type and given MNN totals)
- All leather and textiles (after being analyzed by a specialist) (Leather requires treatment with potentially hazardous and flammable material in order to be preserved. Only leather artifacts with clear interpretative value are treated in this way; other leather items are catalogued, analyzed, described, and discarded.)
- Metal scrap, sheets, strips, and wire
- Corroded, non-temporally diagnostic ferrous items including wire, pipes and tubes, bolts, bolts, pans, and straps
- Slag and amorphous metal and glass
- Large items for which curation was a problem (for example, the two porcelain toilets from Feature 433)

Other Features and Stratigraphy. During laboratory analysis, specific soil layers, and occasionally entire features, are frequently reevaluated as failing to meet research design criteria. Artifacts associated with these strata or features may be discarded. Prior to discard, individual items or classes or artifacts were retrieved if they exhibited educational potential.

References Cited
1993 Guidelines for the Curation of Archaeological Collections. State Historical Resources Commission, Office of Historic Preservation, Sacramento, California.

Nomlaki Archaeological Research Project
Greg Growey
Mendocino National Forest

The Nomlaki Archaeological Research Project began in 1996 in response to a request from members of the Parkaska Band of Nomlaki Indians who approached the Mendocino National Forest about opportunities to learn about their past. A similar program was also developed for the Yuki of Round Valley in 1998. All research was conducted under the Forest Service’s Passport in Time program (PIT), which affords the public an opportunity to participate in cultural resources studies. All work was done in partnership with Tribes and the Bureau of Land Management, and more recent work included CSLU-Chico as a partner.

Between 1995-2001, PIT-sponsord archaeological excavations were conducted at five mid-elevation sites within the Thomas Creek and Gridstone Creek watersheds on the eastern slope of the North Coast Ranges west of Corning: Alder Springs (CA-Gle-177), Thames Creek (CA- Teh-172), Peterson Place (CA-Teh-926), Leroy’s Camp (CA-Teh-984), and Poison Glade (CA-Teh-1952). These sites range in elevation between 3100 – 4300 feet, and are located within chaparral/oak woodland or mixed conifer/oak woodland plant communities. All are in proximity to open glades and springs. These sites were selected to expand our knowledge of Late Period prehistory, and presumably that of the Nomlaki, whose ancestral way of life is poorly known, largely due to their forced relocation in the late 1850-1866 and the lateness of ethnographic research (Goldschmidt, 1951). This article focuses on preliminary results from archaeological excavations conducted CA-Teh-1722 and CA-Teh-984, with comparative data from CA-Gle- 77.

All sites are within the ethnographic territory of the Hill Wintun, also known as the Nomlaki (Goldschmidt, 1951). The Yuki bordered the Nomlaki to the west, beginning at the crest of the North Coast Range. The Central Wintun Indians, composed of both River Wintun and Hill Wintun subgroups, may have first settled in the northern Sacramento Valley perhaps as early as 1200 to 1400 B.P. based on linguistic reconstructions (Whistler, 1977). Early Wintun populations may have first settled along the northern Sacramento Valley riverine environments and adjacent foothills, and then expanded into the uplands of the North Coast Ranges, an area thought to be previously occupied by non-Wintun populations (e.g., proto-Yukiand proto-Pomoan groups). Numerous mid-elevation prehistoric miden sites
refined during laboratory analysis, and historical documentation is correlated with archaeological findings. Frequently specific soil layers, and occasionally entire features, are reevaluated as failing to meet research design criteria. Artifacts associated with these strata or features may be discarded.

Practicality
This category recognizes that curation space and resources are limited and costly, and that curation decisions may be made for reasons other than research or educational potential.

3. Excessive quantity of materials. Where the quantity of a class of artifacts is such that its values can be represented in a sample, the entire collection does not have to be curated.

4. Manageability problems. The volume, weight, redundant character, or quality of material is so great as to be excessively costly to curate.

5. Poor condition. The physical condition of the material is such that it is not feasible to conserve it.

6. Health and safety risks. The retention of the material poses a health and safety risk, either because of the nature of the material itself or as a result of conservation treatment.

Education Potential
This consideration encompasses the potential of the artifacts to contribute toward public education and/or interpretive programs such as museum displays and hands-on teaching aids. Also included are heritage values, such the symbolic importance of artifacts or archeological features to existing cultural groups.

7. Lack of Public Educational or Interpretive Value. The material’s potential for interpreting California’s past to a lay audience is small because of the mundane, fragmentary, and/or unrepresentative nature of the artifacts.

8. Lack of Heritage values. The archaeological materials do not have symbolic or cultural importance to any recognized group.

Curation and Discard Practices
Guided by the above policies, the following discard practices are applied to all features evaluated as being legally significant and therefore subjected to data recovery. These practices are specifically designed to apply to historic-period urban sites of the industrial era; different types of sites with different research objectives will undoubtedly require different practices. For those features and strata determined not to be important, both in the field or during laboratory analysis, their artifact contents are assessed for educational potential.

Field Discard Practices

Important Features. Certain types of materials are recorded in feature notes, but not retained for cataloguing or laboratory analysis. Materials lacking research value or manageability include:

- construction materials such as brick, lumber, and concrete. While construction materials are useful in determining the nature of historic buildings and structures, the focus of most urban projects is recovery of primary deposits related to domestic and commercial use by the buildings’ occupants.
- non-cultural items such as rocks, stones, and tree parts.
- amorphous lumps of metal not potentially identifiable.
- non-diagnostic tin-cans parts (seams, openings, and other identifying portions were collected, portions sufficient to analyze types and quantities)
- artifact fragments smaller than a dime.

Other Artifacts. Some types of artifacts, not from features that were evaluated as important, may be collected in the field based on their educational potential:

- Whole bottles
- distinctive examples of ceramic types (European, English, Asian, and low-fire earthenwares)
- easily identifiable items that demonstrate historic lifeways (such as table wares, children’s toys, hardware, jewelry, health items, and horse tack).

These items may be cleaned in the field, but are generally not subjected to laboratory identification or cataloging.

Table 1: Summary of federal and state curation policy guidelines.

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Federal</th>
<th>Maryland</th>
<th>California</th>
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<tbody>
<tr>
<td>Research Values</td>
<td>Information important to history and preliminary</td>
<td>Research Value</td>
<td>Importance to scientific research, Meets project’s research goals/Taxonomic, Archaeological content</td>
</tr>
<tr>
<td>Practicality</td>
<td>Trouble and expense</td>
<td>Quantity</td>
<td>Heritage importance, Education and interpretation</td>
</tr>
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</table>

Data-Sharing Meetings

Directions to SBMNH

http://www.sbmnh.org/vision/index.htm

From the North: Take U.S. Hwy 101 south to the Mission Street exit. Turn left (towards the hills) at the offramp stop light.

From the South: Take U.S. Hwy 101 north to the Mission Street exit. Turn right (towards the hills) at the offramp stop light.

Pleased as a Mission to Santa Barbara Street: Turn left on Santa Barbara Street, proceed two blocks to the first stop sign at Los Olivos. Turn right on Los Olivos, stay to the left at the “Y”—you will cross a stone bridge. Turn left at the second street after the bridge; this is Las Encinas. Turn left at the stop sign (Puesta del Sol Road) and proceed to the first parking lot driveway and turn right. Cuesta College may be reached by taking Highway 101 North or South to San Luis Obispo. Take the Highway 1 North off ramp onto Highway 1 (AKA Santa Rosa Blvd.). The College lies 3.5 miles north of San Luis Obispo on the west side of Highway 1.

SCDSM Information

The Southern California Data Sharing meetings will be held between 9:00 a.m. and 5:00 p.m. on November 2, Santa Barbara Museum of Natural History, Fleischmann Hall No. 18, 2559 Puesta del Sol Road, Santa Barbara. The Museum is situated on 31 acres shaded by coast live oak woodland and bisected by Mission Creek. Creek side paths, a nature trail, picnic tables and an outdoor amphitheatre make this one of the most beautiful museum settings anywhere.

Informal presentations of fieldwork, incipient theories, or interpretation are requested. Please send a title and brief description of your presentation to Thomas Wheeler, 2563 Lawson, San Luis Obispo, CA 93401 (twheelernm@comcast.com). The emphasis of these meetings will be on an informal exchange of information regarding current research, fieldwork, or ongoing programs in archaeology. The informativity of this get-together is stressed to provide a relaxed and interactive exchange among participants and to encourage the participation of students. Recent trends in Data Sharing meetings have tended to greater formality with stand presentations of papers. This form of presentation is best rejected for the Annual Meetings. Data sharing meetings here have been presented in a relaxed atmosphere, amenable to the informal sharing of recent work by students and professionals.

An informal get together will take place after the meetings in the museum gardens.

For information call: Thomas Wheeler, Wk. (805) 547-3777, Hm. (805) 547-0963, e-mail: twheelernm@comcast.com.

2002 Southern California Data-Sharing Meeting

November 2, 2002

Santa Barbara Museum of Natural History
Fleischmann Hall, No. 18
Santa Barbara

9:00-5:00

Papers Presented

10:00/3:30

Breaks

2002 Southern California

Data-Sharing Meeting

Southern Data-Sharing
This series offers an annotated bibliography of recent published and some unpublished literature pertinent to current debates and methods in Californian archaeology. Prehistoric and historical archaeology will appear in alternate issues. If you have any news or ideas about how this section can better fit the needs of its audience feel free to email the author. Denise. L.Thomas@sdcc.ca.gov. Please limit contributions to those that can be easily accessed by all members of the SCA and have appeared within the last five years.

Hull, Kathleen

Hull responds to emerging critiques concerning the practical use of obsidian hydration as an absolute dating method in archaeological samples. The author addresses these concerns by formulating and testing temperature-dependent rate formulas for Casa Diablo obsidian collected from archaeological sites within Yosemite National Park. This study incorporates subsurface field temperature rather than laboratory-based data to develop hydration rates. Hull begins her discussion by reviewing the history of obsidian hydration research as it relates to calibration and modeling. While methods for converting hydration rings to absolute dates appear satisfactory, the author noted that when formulae (California, Nevada, and Utah) were transposed to correspond to the diffusion equation developed by Friedman & Smith in 1968, the formulae vary only slightly around an ideal model. Hull looks at the possible reasons why some induced hydration rates do not comply with the diffusion model when the model itself is theoretically sound.

The study used calibrated radiocarbon dates from features, associated obsidian hydration rim measurements, and provenience-specific temperature estimates from archaeological sites in Yosemite to determine the relationship between temperature, time, and hydration. Two hundred and sixteen obsidian hydration measurements that matched the above criteria were analyzed. Based on this study, Hull suggests that the most secure application of this calibration equation for future hydration studies would be to samples located in the mid-to-upper elevation ranges in Yosemite where effective hydration temperature (EHT) values that were used to construct the hydration rates could be used to establish specific EHT’s for chromatic normative. In conclusion, Hull emphasizes three main observations: 1) provenience-specific sampling should be taken into consideration for accurate hydration rate estimation; 2) surface and subsurface EHT information should be collected and compiled on a regional scale; and 3) geomorphological observations regarding paleosol development could be important for discerning context specific hydration rates.

Holliman, Sandra E.

Holliman explores the probability that the guild of undertakers in Chumash society, known as the ‘/ap, represented one of the first forms of labor organization in the Santa Barbara Channel area. The author argues that this professional association may have served as a model for craft guilds that were observed and documented at the time of Euro-American contact.

archaeological project or program. Archeological specimens and records that should be curated are those that embody a significant importance to history and prehistory ($4 FR 4734-37).

In short, the federal government’s position on curating seems to be that the same criterion used to determine the importance of archaeological sites, their information potential, should be used to identify artifacts and records for curation. Furthermore, the Advisory Council on Historic Preservation’s “Treatment of Archeological Properties: A Handbook” emphasizes that

not all archaeological values.... are equally important.... Something can be learned from every archaeological project, but what can be learned may not be worth the trouble and expense it takes to learn it (ACHP 1990:3).

Although this statement relates to the significance of archeological sites, the same argument can be made regarding the research potential of some archeological artifacts. The Federal government acknowledges that there are practical limitations to the recovery (or curation) of data.

State of Maryland Disposed Policy
The State of Maryland’s Office of Historic Preservation has adopted a specific policy on the selective discard of archaeological artifacts. Maryland’s “Standards and Guidelines for Archeological Investigations” give an important rationale for discard:

Certain types of material may have questionable long term research value and thus may not warrant permanent curation with the collection. These materials may include: brick, mortar, slag, coal, shell, and recent environmental debris (i.e., less than 50 years old). Factors to consider in reaching the decision to selectively discard materials include: the archaeologist’s estimate of discovery, the items’ research potential, and the amount and manageability of the materials (Maryland Historical Trust 1994).

In this statement, Maryland defines three principles by which the archaeologist determines if material may be discarded. The first two of these reinforce the Secretary of the Interior’s concern that important data be preserved, as well as the ACHP’s position that we must make critical decisions regarding what constitutes “important” data. The Maryland guidelines indicate that there are practical limits to data recovery and curation.

State of California Guidelines on Curation
The State of California’s “Guidelines for the Curation of Archaeological Collections” (State Historical Resources Commission (SHRC) 1993) were issued to guide the treatment of archaeological remains recovered under the authority of State laws and regulations. The Guidelines provide a general statement concerning the retention of materials for permanent curation:

Decisions to eliminate material may have to consider hazards to health and safety, deterioration of material beyond its ability to be preserved, importance for scientific research, heritage appreciation or educational value, or its age being too recent to qualify as historical (SHRC 1993:4).

In summary, the document describes that the application of these guidelines “should be based principally upon the value of cultural materials for future research, heritage appreciation, [and] education and interpretation,” and governed by the project’s research goals (SHRC 1993:4).

California reiterates the Federal government’s and the State of Maryland’s considerations of research value and practicality, and additionally adds another variable for consideration: educational value, including both interpretive potential and heritage importance.

Summary of Considerations
The above topics, specified in Federal and State curation policy guidelines are summarized in Table 1. These provide the structure of the Curation Management Policy presented below.

Project Curation and Discard Principles
Following a project’s research design, all archaeological sites and collections described to the Federal authorities and only those meeting appropriate criteria are recovered for laboratory analysis. These principles, therefore, apply to artifact collections that are already identified as potentially significant. They also address artifacts that, while not belonging to a class that are particularly important for their research potential, are curated for educational reasons.

Artifact curation and discard principles are organized under three considerations: Research Values, Practicality, and Educational Potential. If one or more of the criteria listed under these headings are met, the Principal Investigator may choose to discard the material in question. Clearly, certain criteria will carry more weight than others in various circumstances.

Research Values
These values relate to the potential of a class, or collection, of artifacts to provide information important for understanding the past as defined in the project’s research design. Artifacts may be discarded if they meet any of the following criteria:

1. Lack of long-term research value. The research potential of a class of artifacts has been exhausted through cataloguing and analysis (i.e., as far as can reasonably foreseen, there is no additional important information that might be retrieved from the artifacts in the future).

2. Poor archaeological or historical context. Stratigraphic evaluations and feature associations made in the field are
Holliman surveys the connection between sexual identity, gender roles, labor organization, and social structure in association with Chumash undertakers. The ‘ap’ not only represented an individual who performed ritual and functional duties associated with the dead, but it also linked gender identification with non-potential sexual activity and spiritual and cosmological recognition within the Chumash culture and other cultural groups in the region (Yokuts, Mono, and Tubatulabal).

The ‘ap’ society, the economic, political, and religious elites, and the ‘ap’ guild is thought to have been fully formed and recognized by the Early Period. Artifacts such as turtle shell rattles, wands, and quartz crystals have been documented in Early, Middle, Transitional, and Later Period cemeteries on Santa Cruz Island suggesting that mortuary practices were fully established. The archaeological evidence for male ‘ap’ practices is based on the discovery of a relatively young male with a pathological condition located in the spine only previously seen in females. It has been proposed that this condition could have developed from the repeated stress from excavating graves. The challenge in identifying items associated with the ‘ap’ is that the tool kit of undertakers, digging stick and baskets, would look identical to domestic items archaeologically. However, Holliman maintains that it is possible to consider sexuality in archaeological contexts if research objectives are in accordance with larger social systems such as kinship, marriage, and division of labor.


Dental increment analysis has been used by archaeologists to further understand prehistoric mobility patterns and prey selection. Although the method was initially developed and used by wildlife managers to age animals, archaeologists have found the technique to be useful in determining age and season of death in archaeological assemblages. To date, most dental increment research has focused on temperate latitude mammalian species and has proved to strongly correlate with increment interpretation and life history patterns. However, the mechanism of increment formation is yet to be fully understood. O’Brien states that the appearance of double bands in tropical species has been inappropriately taken as evidence for a causal relationship between ecological factors and increment formation. Because of the inconsistency of study results, there has been skepticism about the reliability of study results from tropical mammals. If ecological variability explains this lack of correspondence between age of animal and increment representation, the application of the method in archaeological studies should be reassessed.

O’Brien performed dental increment analysis on two zebra populations (56 individuals) from Northern Tanzania and Southern Kenya using the petrographic thin-sectioning technique. Results of this study produced expected ages for the majority of the sample. The author states that discordance in results from East Africa mammal populations lies with problems of methodology applied by biologists and zoologists. O’Brien stresses the importance of considering methodology and understanding cememntum histology in increment analysis. This study has confirmed the value of this type of analysis and has shown that life history events for both temperate and tropical species can be confidently established.

New Publications

O’Brien performed dental increment analysis on two zebra populations (56 individuals) from Northern Tanzania and Southern Kenya using the petrographic thin-sectioning technique. Results of this study produced expected ages for the majority of the sample. The author states that discordance in results from East Africa mammal populations lies with problems of methodology applied by biologists and zoologists. O’Brien stresses the importance of considering methodology and understanding cememntum histology in increment analysis. This study has confirmed the value of this type of analysis and has shown that life history events for both temperate and tropical species can be confidently established.
Francis A. Riddell died passed away on Friday, 8 March 2002. His close friend and professional associate William "Ole" Olson agree to assemble the following tribute. The Society is indebted to Ole for his willingness to assume this solemn task.

Before he passed away, Fritz completed three installments of his memoirs published in this Newsletter under the title "As It Was." Readers are encouraged to read all three, which took up to 1851. Ole's account picks up the story in the mid-1960s. Readers are also encouraged to visit a web site with Brian Dilkon's excellent tribute containing wonderful personal reminiscences, new biographical detail, and an account of his later service with CDF.

http://www.indiana.edu/~ex272/oldtimer_reports/hit_riddell/

Francis A. Riddell, 1921 to 2002

William Olson

Following World War II, Fritz enrolled at the University of California, Berkeley in the Department of Anthropology. He completed his Bachelors degree and Masters degrees in the mid-1950's. Along the way he carried out field work in Alaska, Peru and California as well as projects in the Great Basin and Washington.

His Masters' Thesis was based on his work in Alaska and his work in Peru with Dorothy Menzel, his first wife, initiated a life long interest Persianic prehistory. It was at the University of California, Berkeley that Fritz developed friendships that he maintained throughout his life. Included in this group were Clement Meighan, William Wallace, Bert Grunow, Franciso Fenenga, Edward Lanning, Martin Baumbaeh, James Bennuff, Larry Dawson, David and Verl Mae Fredericks, Albert Eslesser, Adam Tregenza, Fredrica DeAngelo, Don Latehrup, Don McGrein, Paul Schumacher plus many others. Fritz also worked at the University of California Archaeological Survey during this period and carried out numerous excavations and surveys. One of Fritz's most notable excavations was that of the Ruiko site in El Reno County. Here as well as at several other Lassen County sites, he enlisted the services of other students providing for some their first experience in field archaeology.

Fritz's interests were not confined to prehistory. He had a lifelong interest in the Native Californians and carried out studies on the History Lake and Paicines, the Cowcosh Marsh and Clear Lake Pomo. He thoroughly enjoyed meeting and getting to know California Indians as friends, a passion that he never forsook. His experiences with Dr. Samuel Barrett and several Maidis informants were long remembered and cherished. Fritz always enjoyed attending events such as the Bear Dance in Lassen County. He had several important publications result from this facet of his professional career, including the chapter on the Cowcosh in the California Handbook.

Following Fritz's University time he took a position as Curator of the California State Indian Museum in 1956. While this position was technically that of a Curator of Collections, Fritz soon enlisted a cadre of interested local students and volunteers to carry out salvage work at threatened sites in the Lower Sacramento Valley and Upper San Joaquin Valley. Included in this group were Sam Payen, Ric Windmiller, Dave Bokoyan and many other students. At the same time Norm Wilson joined Fritz at the Museum as a first of Riddell recruited cadre of museum staff/archaeologists.

In 1960 Fritz took the first state archaeologist position working directly for a state agency (outside of academy) in California. The importance of this position cannot be over-emphasized. Fritz had lobbied hard and long for such a position. This was on the vital need for archaeological expertise to handle state highway development and the large scale water development of the 1960's it was clear that in-house positions were required. Ironically while Fritz's position was housed in the State Department of Parks and Recreation it was project work that funded the work and positions in the late 1960's. Prior archaeological work in the Park system had been carried out under contract with the University of California, Berkeley. Along the way he also married Carolyn and started a new family. To Tom Jim from his first marriage he and Carolyn added daughters Catherine, Mildred (Midge) and Lainy.

By the mid 1960's Fritz had a full or part time staff of anywhere from five to forty people in the field, laboratory or office. While Fritz handled the administrative/bureaucratic workload and lobbied for funding, from both state and federal agencies, to support field operations. Project managers at this period included Sam Payen, Eric Ritter, Jim White, Chester King, Tom King, Dave Fredericks, Rick Hanks, Joe Charkoff, Peter Schulz, Bob Orlins and others leading up field crews in all parts of California. Major excavation projects were carried out in the Orovile Reservoir, Los Banos Detention Reservoir, Lower Pinecone Reservoir, Grizzly Lake Reservoir, Cañada, and Pyramidal Reservoirs and many other locations. At the same time major accomplished using the abbreviated INAA procedure outlined by Glasscock et al. (1994). However, extended INAA and ICP-MS (using laser ablation) are also available at the same cost. This compares favorably with most XRF laboratories that charge between $25 and $50 per sample. As shown in Figure 1, the abbreviated INAA procedure is quite capable of discriminating between all major chemistries seen in our work. The figure plots parts per million (ppm) concentrations for manganese and barium for known sample sources and items from the Sherwin Summit.

Unfortunately, the obsidian database at MURR for Casa Diablo is small and does not contain data for different subsources. As a result we were unable to discriminate between the Swallowtail Ridge and Lookout Mountain obsidians that Hughes (1994) can discern using XRF.

The major drawback of INAA and ICP-MS is that like obsidian hydration, the techniques are partially destructive (though ICP-MS with laser ablation, also available at MURR, does not have this problem). This may make retrieval both hydration and sourcing data from the same small pressure flake difficult, though certainly not impossible (i.e., depending on the size of the initial flake).

In conclusion, we hope to dispel some of the common misperceptions about the techniques available to source small obsidian flakes. As well, we hope to have shown that, in the Sherwin Summit case, the systematic analysis of small pressure-sized flakes, in addition to large flakes and different artifact categories, adds important information to our understanding of prehistoric lifeways. We believe California and Great Basin sourcing studies should strive to include smaller pressure-flake and functionally-sourced artifact categories, within their sourcing studies.

Acknowledgments

We kindly thank Denise Thomas and Tom Mills of California Department of Transportation, Linda Reynolds of the USFS, and Kirk Baldridge of the BLM for comments and support for the field and lab work. Thanks also to Bill Hildredt and Richard Hughes for reading and commenting on earlier drafts, and to Tamara Norton for drafting Figure 1.

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debitage). Very little primary reduction of Trumian Queen obsidian took place within the project area. Primary reduction, instead, seems to have been limited to Casa Diablo, and to a lesser extent Mono Glax Mountain, obsidian. Although we did not recover projectile points from the Mono Craters source, the same may be true of obsidian from this source. The presence only of smaller pressure flakes from Mono Craters suggests we are capturing only the retooling activities associated with obsidian from this source. Tools from this source may have arrived to the Sherwin Summit area through trade or as part of seasonal mobility patterns that included forays into the Mono Basin. Future research will attempt to discern between these alternatives.

Thus, source diversity among the smaller flakes nearly matches that observed among the projectile points. A chi-square test comparing obsidian from Casa Diablo, Mono Glax Mountain, and Trumian Queen across projectile points and small flakes only is not significant (p = .36), suggesting that the distribution of small pressure-sized flakes and points more closely mirror one another (these three are the only sources with sample sizes large enough to warrant including in the statistical test).

Discussion

As shown above, there are significant differences in the source distribution of small pressure-sized and large percussion-sized flakes in the Sherwin Summit region. Although not unreasonably large, the extent of this difference was not known. As shown, the analysis of small flakes more closely mirrors the source distribution of projectile points, and in this case expanded the range of obsidian sources observed to include Mono Craters. Inclusion of this source significantly expanded our understanding of prehistoric mobility patterns and exchange systems for the Sherwin Summit (Eerkens and King 2002). We were also able to demonstrate that resharpening finished tools was an important part of the range of activities taking place on the landscape.

In most archaeological projects, projectile point sample sizes are extremely limited. However, the number of small flakes is usually not. Source analysis of small flakes, then, may present an opportunity to estimate the original source diversity of projectile points that were at a site, but were subsequently removed (i.e., curated) and used elsewhere (depending, of course, on the technological flintknapping system in place and how the small flakes are sampled from a site).

Selecting only larger flakes for sourcing analysis can affect not only the range of different sources represented, but their overall importance as well. Because large and small flakes represent different behaviors and activities (i.e., primary reduction vs. resharpening), and because these behaviors may have a temporal component as well (i.e., pressure flaking may be more important in late-prehistoric vs. early-prehistoric contexts), it is quite possible that limiting our analyses to larger flakes misrepresents the nature and importance of prehistoric activities through time. This is particularly relevant in situations where we depend on source-specific obsidian hydration readings to trace prehistoric activities on the landscape. If we selectively select larger pieces for analysis (due to technical limits in our methods), we may be missing certain aspects and time periods in prehistory.

Unfortunately, few studies of prehistoric sites in California and the Great Basin systematically attempt to source small flakes. Depending on how research questions are phrased, the lack of small-flake sourcing may be introducing biases into our understanding of the prehistoric record. In particular, we suggest that this bias probably results in an underestimate of the extent of prehistoric mobility and exchange and the importance of resharpening and use of obsidian tools. The bias may also have a temporal component, overemphasizing time periods where percussive flaking dominates. Correcting this potential bias should be a concern for all working in the region.

Why this bias against the analysis of small flakes is in place is unclear, but we believe it may extend from a lack of exposure to sourcing techniques outside of XRF. There may be a misperception that techniques such as INAA or Inductively Coupled Plasma Mass Spectrometry (ICP-MS), which both give reliable chemical data on small artifacts, are expensive or inaccessible. Sourcing data for small flakes is available to the public at MURR for $40 per sample, using the best method available. In most cases this can be

Figure 3: Bivariate plot of Mn and Ba showing separation of Eastern California obsidian sources. Solid dots represent Sherwin Summit small flakes. Ellipses represent 95% confidence intervals around analyzed source samples.

site excavations were carried out all over California related to the HighwaySalvageProgram. While much of the waterprogressthatultimatelywaspublished, littletreach work was followed to completion. By the late 1960’s and early 1970’s both State Parks and the DivisionofHighwaysofHighwaysgeneratedotherstateagencieshaddevelopedinternalarchaeologicalstafftohandletheirworkload. A large degree of the credit for development of these programs must go to Fritz Riddell who fought the first battles for consideration of archaeological values on a broad basis.

Outside of state service programs Fritz in the late 1950’s, supported the development of the first independentarchaeologicalfoundation, ultimately titled the CentralCaliforniaArchaeologicalFoundationorCCAFA. The members were devoted to providing expertise to both private and public agencies involved in cultural and non-academicians and historians.

Following Fritz’s retirement from state service in 1983 he continued to be active in contract archeology and worked with the California Division of Forestry in the training of in-house non-archaeological staff. He also renewed his interest in PersianicArcheologyandorganized The California Institute for Persian Studies. He developed relationships with Persianic archaeologists not only in the United States but also in Pakistan. He was not only active in organized groups but also supported the academy and students by organizing field schools in Peru. Fritz was ultimately awarded an Honorary Doctorate from the Catholic University at Antiqua.

Fritz Riddell’s career in archaeology is unique in the way he used his knowledge of human, world range of professional friends and acquaintances and broad range of interests will not be forgotten, indeed it will be hard for many of us to ever forget Fritz. He started many people on the discipline, supported all of us and made sure we stuck with it in good times and bad. We all owe him a debt for his role in the development of what we now call CRM in California.

Those of us who worked with Fritz in the 1950’s and early 1960’s found him to be a good friend as well as a mentor. He was sure that many of us prepared and presented papers for publication or at meetings and never took no for an answer. Though Fritz had a broad range of interests in archaeology, he never forgot his connections in Central California. Fritz’s range of colleagues and friends was broad. Especially he was loved to reenact his time at U.C. Berkeley and the relationships he made there. Fritz did not live in the past. Even to the end he enjoyed going to the field and was disturbed that he could no longer do so. Of course most 80 year olds don’t do a lot of field work, a thought that never entered his mind. To those of us who worked with Fritz he will never be replaced and, along with his family he will miss him.

> Publications by Francis A. Riddell

Aboriginal Use of the Owens Lake Playa
Mike Jones and Stodes, Inc.

Los Angeles Department of Water and Power (LADWP) recently completed the first phase of a project designed to mitigate dust emitted from the dry bed of Owens Lake, in Inyo County, California. This vast playa measures approximately 250 square kilometers (100 square miles). The undertaking occurred on the northeastern expanse of the lake playa, just south and east of the Owens River delta (Figure 1). Jones & Stokes implemented construction monitoring for cultural resources, and discovered 18 new prehistoric archaeological sites on the playa. Management efforts culminated in the excavation and analysis of these sites. One previously excavated site in the project area was also tested, to facilitate comparison with previous studies. The assemblages recovered from these sites revealed an underreported class of artifacts. In addition these assemblages offered fine-grained data illuminating the local nature of late period culture and climate change.

Sites discovered on the lake were striking for their large size and relative paucity of cultural debris. Sites averaged approximately 10,417 m2. The typical site contained a sparse scatter of debitage, ground stone, a few projectile points, and a scatter of large, crude bifaces manufactured from quartzite, and other silicous meta-sedimentary rock. These bifaces appeared to be relatively uniform, measuring approximately 9 cm long, 6 cm wide, 1 cm thick and slightly ovoid in shape. These tools were sharpened along the edges, with few flake scars intruding along the planar surfaces of the tools. The existing building plans of the tabular parent material likely offered an expedient means of thinning the tools. Field staff dubbed these crude tools “tabs” or “tabular bifaces” (Figure 2).

Analysis of this assemblage first tested the coherence of the “tabs” as a discrete functional class of artifacts. It was assumed that if the bifaces represented one functional class of things rather than an arbitrary category imposed during the present study then they should group tightly in size and weight. In other words, the narrow tolerances generally associated with a discrete functional class of tools should be statistically demonstrable. A sample of 70 specimens allowed calculation of average size for several attributes (Table 1). The low degree of variability revealed in the standard deviation strongly suggests that the tools were manufactured to meet specific tolerances and thus reflect one functional class. In addition, comparison of the coefficients of variation (cv) with those from established classes of artifacts revealed a similarly low degree of absolute variation in size. A sample population of Elko Corner-notched projectile points, for example produced a cv value of 0.15 for the attribute of maximum width (Thomas et al. 1983). When compared to the analogous attribute for the “tabs” (0.09 for width) the bifaces appear to be extremely uniform.

While the percentage of large and small flaked ascribed to some sources is approximately equal, such as Mono Glass Mountain (27% and 25%), others are quite different. For example, while 63% of the large flakes were assigned to the Casa Diablo source, INAA ascribed only 47% of the small flakes to this source. As well, while 3.3% of the large flakes were sourced to Trump Queen and 8.1% to Fish Springs, the percentage of small flakes was determined at 19% and 4.2% respectively.

A chi-square comparison of the frequency of Casa Diablo and Trump Queen flakes for small and large flakes is highly significant (p < 0.0003). The results of the Chi-square test suggest that Trump Queen debitage tends to be composed predominately of smaller pressure flakes while Casa Diablo flakes are usually larger and percussion- sized (i.e., large enough to be sourced by XRF). By comparison, a chi-square test on large and small flakes from Casa Diablo and Mono Glass Mountain is insignificant (p > 0.77), suggesting there is little difference in the size of flakes from these two sources.

Not surprisingly, Trump Queen obsidian also makes up a relatively high fraction of the projectile point assemblage (16.7%; see Table 1). All of this is consistent with a pattern where complete points from the Trump Queen source were brought into the project area in completed form and were either resharpened (accounting for the smaller debitage) or were discarded and replaced with newly knapped Casa Diablo points (accounting for the larger Casa Diablo finding).
However, in all cases the very nature by which data are gathered in XRF requires a relatively large minimum artifact size, particularly with regards to thickness. Large sample size ensures that the technique gives reliable measurements for all elements (Davis et al. 1998). Unfortunately, these restrictions inhibit research into the behaviors that lead to the deposition of small flakes. Such behaviors, including pressure flaking to resharpen or finish the production of a tool, and tool use resulting in the removal of microdebitage (e.g., microchipping visible along flake tool margins), represent significantly different kinds of behaviors than those resulting in the deposition of large flakes, such as biface thinning. By limiting sourcing studies to the analysis of large flakes, then, we are potentially missing an important component of the archaeological record. This bias is generally acknowledged in California and Great Basin studies (Davis et al. 1998; Skinner 2001), but few have attempted to evaluate and/or resolve the extent of this bias as it applies within an archaeological context. Concerns over the potential effects of sample size selection have also been expressed in regards to obsidian hydration analysis (i.e., Jackson 1999), but again, there has been little attempt to address these biases.

Sample Selection and Methods

To investigate the significance of the sample size restrictions in XRF sourcing studies, we compare the results of a typical XRF sample to the results of a sourcing study using Instrumental Neutron Activation Analysis (INAA) composed only of small flakes (under 10 mm in maximum diameter and 1.5 mm in thickness, and weighing approximately 200 mg). INAA does not have the same size restrictions and can be performed on samples as small as 2 mm in diameter and/or 5 mg. This small size smaller than most flakes produced during various activities, and is certainly larger than the 1/8” (3.2 mm) mesh size usually employed during excavation. Thus, INAA can handle the full range of artifacts that archaeologists in California and the Great Basin typically encounter.

Obsidian artifacts were sampled from 14 prehistoric sites in the Sherwin Summit area of southern Mono County, California (see Eerkens and Kong 2002). The region contains several nearby and chemically distinct obsidian sources that were exploited by prehistoric inhabitants. The location of the project area and major regional obsidian sources is shown in Figure 1.

In total, 321 artifacts were submitted for XRF analysis, including 30 projectile points, 82 bifaces, 25 flake tools, and 221 flakes over 10 mm in diameter. Figure 2 presents a sample of the artifacts from the project. Artifacts were selected at random from site assemblages and submitted to Geochemical Research Laboratories in Portola Valley, California. In addition, a smaller sample of 47 flakes under 10 mm diameter (though most less than 5 mm in

Table 1: Comparison of source diversity by artifact category.

<table>
<thead>
<tr>
<th>Source/Artifact (technique)</th>
<th>Small Flakes</th>
<th>Large Flakes</th>
<th>Point</th>
<th>Biface</th>
<th>Flake Tools</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Flakes (HAA)</td>
<td>22 (6%)</td>
<td>11 (15%)</td>
<td>2 (4%)</td>
<td>9 (19%)</td>
<td>-</td>
<td>47</td>
</tr>
<tr>
<td>Large Flakes (XRF)</td>
<td>135 (61%)</td>
<td>68 (27%)</td>
<td>18 (31%)</td>
<td>7 (32%)</td>
<td>-</td>
<td>221</td>
</tr>
<tr>
<td>Points (XRF)</td>
<td>17 (57%)</td>
<td>7 (33%)</td>
<td>1 (3%)</td>
<td>5 (17%)</td>
<td>-</td>
<td>32</td>
</tr>
<tr>
<td>Bifaces (XRF)</td>
<td>44 (54%)</td>
<td>6 (16%)</td>
<td>4 (9%)</td>
<td>7 (16%)</td>
<td>-</td>
<td>62</td>
</tr>
<tr>
<td>Flake Tools (XRF)</td>
<td>13 (49%)</td>
<td>3 (12%)</td>
<td>-</td>
<td>2 (6%)</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Totals</td>
<td>257</td>
<td>132</td>
<td>26</td>
<td>38</td>
<td>1</td>
<td>439</td>
</tr>
</tbody>
</table>

Table 1: Metric Data for Complete Tabular Bifaces (n=70).

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
<th>SD</th>
<th>CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (cm)</td>
<td>9.22</td>
<td>0.83</td>
<td>0.09</td>
</tr>
<tr>
<td>Width (cm)</td>
<td>6.10</td>
<td>0.56</td>
<td>0.09</td>
</tr>
<tr>
<td>Thickness (cm)</td>
<td>0.52</td>
<td>0.17</td>
<td>0.32</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>46.8</td>
<td>14.5</td>
<td>0.30</td>
</tr>
</tbody>
</table>

SD = standard deviation, CV = coefficient of variation (standard deviation/mean)
northeastern edge of the dry Owens Lake playa thus reveal an emphasis on the procurement and local processing of local vegetable resources. The relatively small collection of projectile points indicates that hunting was important, but less so. Hunting was likely geared towards targets of opportunity, rather than the main purpose of forays onto the playa.

Analysis of the sites’ chronology must thus appear an apparent overlap for the late Holocene period. Many sites contained several projectile points, spanning at least two periods. Assigning discrete dates for individual sites thus appears neither possible nor fruitful. A more useful focus is on the relative intensity of activity during different periods. Following Bettiniger (1992) and others, diagnostic projectile points are a good proxy indicator for the timing and intensity of activity within a discrete landscape. Staff field recovered 24 diagnostic projectile points. These points reveal one striking fact: aboriginal peoples frequented this landscape throughout almost all periods, with the exception of the early Holocene. Accepting the frequencies of point types as an indicator of activity, intensity apparently peaked in the Hwaipe period (1350-650 B.P.).

The ratio of recovered Rose Spring/Eastgate points to the total is exactly 1:3 (Table 2). If all arrow points (late period) are compared to the total, the ratio jumps to 7:12, almost half of all points. This late period “peak” in use of the northeastern playa likely considers in terms of late period culture and climate change.

The predominant usage of the playa during the Hwaipe period corresponds to a putative episode of drought (Stine 1994; 1998) that may have lowered the lake level. Stine’s data indicates an exceptional low-stand around 2000 B.P. (Stine 1994). Owens Lake then remained at a moderately low elevation until approximately 600 B.P. (Stine 1994, 1998). This episode subsumes the entire Hwaipe period. It is noteworthy that the highest elevation associated with a site discovered during this study measures approximately 3,575 feet above sea level. This elevation is 22 feet below the historic high stand at 3,597 feet above sea level (Stine 1994). Sites found on the lake thus corroborate Stine’s reported episode of drought, and reveal that low stands occurred in the earlier Holocene as well.

The sequence of culture change in the region suggests an additional reason for the Hwaipe period peak. The prehistoric inhabitants of the Owens Valley reportedly shifted the general focus of their subsistence strategy late in the prehistoric era to include a greater proportion of high-cost plant resources. Lowland grass seeds such as Indian rice grass (Elymus spicatus and Elymus) and alpine seeds such as pilon (Poa montalis) were especially important taxa (Bettiniger and Bauhoff 1982, Bettiniger 1991). The most recent reports suggest this intra-Hwaipe shift (1950-1490 A.D.) (Bettiniger 1998). Recent work in the study area has presented increasingly fine-grained data relating to the timing and details of this late-period adaptive shift. Delacorte (1994a and 1994b) examined numerous sites with Hwaipe components in the southern Owens Valley. Many of these sites have discrete Hwaipe components, dating to ca. 1350-650 B.P., with the associated Rose Spring/Eastgate series projectile-point forms. These sites thus coincide closely, but not precisely with the incipient subsistence strategy shift. The sites often contain living structures and rich assemblages indicative of habitation loci and occur in “geographically isolated settings adjacent to lakes, nearly vertical mountain escarpments, or on undifferentiated alluvial plains that provided access to only one or a few biotic communities and subsistence resources” (Delacorte 1994a). The location thus suggests intensive exploitation of one or a few types of food resources. The assemblages from these isolated sites also suggest pursuit of one resource to the relative exclusion of other subsistence goods. Faunal assemblages from museum collections with Hwaipe through 1950 B.C.H. contain over 80% waterfowl by weight. In a similar fashion, faunal remains from Ker-250 contain in excess of 80% lagomorph (rabbit) bone by weight (Delacorte 1994a, 1994b).

These sites from previous studies suggest that Hwaipe inhabitants of the Owens Valley were moving towards the late-period subsistence pattern but had not yet worked out the finer details. Subsistence activities focused on resources of the middle rank, and attempted to locate people with respect to these resource patches, even in extremely inhospitable environments. Sites found on the Owens Lake playa are broadly congruent with this pattern. The playa offers few resources, and fewer resources of high quality. Furthermore, the use of this relatively inhospitable environment apparently peaked between 1350 and 650 B.P. These sites and their assemblages thus help resolve the specific array of resources that were pursued during the Hwaipe period—a time of economic transition.

The report for this study will be on file at Jones & Stokes and the Eastern Information Center of the CRHS (Jones & Stokes 2002). Jones & Stokes would like to thank all the people and organizations that made this project possible; the Lone Pine Paiute-Shoshone Band, Bardn Construction Jim, Tim & Tony Delucito at CHLHI, Boyle Engineering, LADWP, and Kirk Hatfield of the Bureau of Land Management.

References Cited
Stine, S. 1984 Late Holocene Fluctuations of Owens Lake, Inyo County, California. Prepared for Far Western Anthropological Research Group, Davis, CA.

Table 2. Projectile Points Recovered

<table>
<thead>
<tr>
<th>Projectile Points Types</th>
<th>N Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinto series</td>
<td>1</td>
</tr>
<tr>
<td>Elko series</td>
<td>4</td>
</tr>
<tr>
<td>Rose Spring/Eastgate</td>
<td>8</td>
</tr>
<tr>
<td>Cottonwood Leaf-shaped</td>
<td>2</td>
</tr>
<tr>
<td>Desert Series</td>
<td>1</td>
</tr>
<tr>
<td>Misc. dart sized points</td>
<td>5</td>
</tr>
<tr>
<td>Misc. arrow sized points</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
</tr>
</tbody>
</table>

Hwaipe and later forms—total: 14
Newberry and Earlier—total: 10

1 - Non-diagnostic Humboldt Basin-notched series not included
2 - Does not include Humboldt Basins

Artificial Source and Chemical Sampling: Studying the Potential Biases of Selecting Large Artifacts for Analysis

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Introduction

Lithic sourcing or provenance analysis has become an indispensable tool in California and Great Basin archaeology, allowing us to reconstruct many facets of prehistoric lifeways, including settlement patterns, tool curation, exchange systems, territoriality, and quarrying behavior (e.g., Glassow 1989; Bettiniger 1982; Bouey and Bagall 1984; Gilreath and Hildebrandt 1971; Hall 1983; Hughes 1994; Rams 2000). In general, X-Ray Fluorescence (XRF) has been the preferred method. This popularity likely stems from the wide availability of XRF machinery, the relative low cost of XRF, and historical factors (i.e., to ensure comparability between samples).

As we demonstrate below, however, the systematic and exclusive use of XRF can lead to serious biases in our interpretation of the archaeological record. In particular, size restrictions usually require artifacts to be over 10 mm in diameter and 1.5 mm thick. Under some circumstances these limits can be lowered slightly. For example, Dr. Richard Hughes of Gescoheval Research Laboratories is currently working on methods to reduce his minimum sample size (Hughes, personal communication 2002).