



DECEMBER 2023

# PCAS Newsletter

The Monthly Publication of the  
Pacific Coast Archaeological Society

[www.pcas.org](http://www.pcas.org)

Volume 62 Numbers 12

ISSN 0270-6776

## December PCAS Speaker

**Dr. Scott D. Sunell**

*A Guiding Light: The Piedra de Lumbre Quarry, Flaked Stone Tools, and Precontact Archaeology Aboard MCB Camp Pendleton*

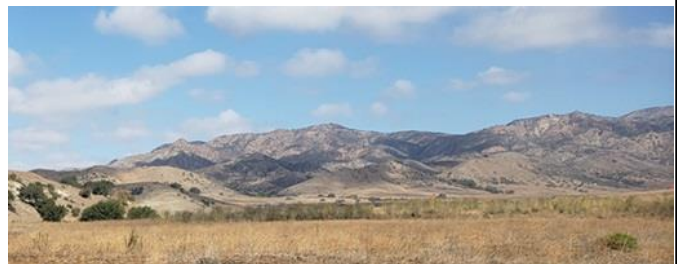
**Holiday Duck Club Meeting—7 pm  
and Zoom Meeting—7:30 pm  
December 14 (See pp. 4&6)**

**Please note: Speaker will be present at the in-person meeting.**

Flaked stone tool analysis supports much of our knowledge about the precontact archaeology of Marine Corps Base (MCB) Camp Pendleton—particularly around questions about the distribution of local and non-local raw materials in archaeological contexts, about the use and transport of artifacts



in local trade networks, and about the nature of pre-contact territorial organization reflected in these patterns. The history of flaked stone tool analysis aboard MCB Camp Pendleton will be reviewed with an emphasis on the Piedra de Lumbre (PDL) quarry as a case study because of the importance of that material in these arguments. An assemblage of previously excavated flaked stone tools and debitage of PDL from late Holocene contexts at sites on MCB Camp Pendleton was analyzed to review the hypotheses that direct procurement characterized access to the raw material during this period and that the distribution of the material reflects transport costs and precontact territorial boundaries. The future directions for flaked stone tool analysis on MCB Camp Pendleton should be 1) to test hypotheses about human-environment interactions through time; 2) to increase the focus on the expedient use of low-quality raw materials; 3) to draw on ethnographic and historical data to inform hypotheses concerning late Holocene lithic production processes; and 4) to address changes through time in methods of lithic reduction.



**MCB Camp Pendleton landscape.**

Dr. Scott D. Sunell is an anthropological archaeologist with 12 years of experience in academic archaeology and in cultural resource management (CRM). He currently works as a staff archaeologist for MCB Camp Pendleton, the largest and most active Marine Corps training installation on the West Coast. His

(Continued on p. 3)

**Renew your PCAS membership!  
Pay online with PayPal—See p. 3.**

## November Speaker Notes

### *Massive Effects and Consequences of the Younger Dryas Cometary Impact with Earth 12,800 Years Ago*

By Megan Galway

Dr. James Kennett, who first spoke to us in 2015, brought us updated information on the Younger Dryas Boundary (YDB) climatic event that took place about 12,800 years ago. This was a distinct climatic episode that had massive consequences around the world and particularly in North America. This event occurred during the later stages of the last ice age when temperatures were slowly rising, but at this point temperatures dropped an average of 3 degrees Celsius.

Evidence points to this event having been caused by a cometary impact. Unlike an asteroid which would have impacted in a specific location leaving a crater, this comet broke up in the atmosphere with great force, and smaller particles impacted over a large area. These particles and resulting fires created the previously reported “black mat” seen in many excavation levels dating to around 12,800 years ago. In 50 sites over four continents, North America, South America, South Africa, and the Middle East, the black layer has been identified. In the Greenland ice sheet, a dark layer of dust has been found at this level.



**Black mat, Murray Springs Clovis site, Arizona.**

At the time of the event, there was an increase in glacial melting, which caused drainage patterns to change and glacial lakes to overflow. Fresh water spread across the oceans, and currents changed causing rapid climatic cooling.

Recent studies have identified a variety of mineral spherules in the mat layer that were caused by intense heat and pressure. In the Dr. James’s 2015 presentation, we heard of nanodiamonds being identified, but more recent studies found concentrations of material such as melt-glass, platinum, iridium, and



**PCAS November speaker, Dr. James Kennett.**

others. Many of these minerals are not found naturally in the areas in which they have been found. Analysis of ice cores in Greenland shows a platinum peak in that period and a slight peak of iridium. Spherules from the Trinity atomic test site in New Mexico were studied and were considered to be from a low grade impact by comparison to those found in the YDB layer.

Resulting effects on both biotic and human lives were implied by the data. Biomass burning and climatic change caused major disruptions in resources. Many species of megafauna became extinct, and human (Clovis) population declined. In North America the extinction of 40 species of megafauna and 19 species of birds was recorded. Fossils of these were found below the black mat, but none or very few were found above. The horse originally evolved in America but became extinct until reintroduced by the Spanish, and few other animal species were left to domesticate. In 1845 Darwin recognized the concept of extinction and suggested it was either from climate change, human intervention, or “catastrophic cause.”

Clovis was an advanced, widely distributed culture until around 13,200 years ago and then almost disappeared. Genetically, the remaining population became much more diverse.

Dr. Kennett referenced many international studies that showed the same patterns: impact related proxies, rapid Younger Dryas cooling, and changed vegetation. He suggested this accelerated the change from hunter/gatherer cultures to the development of agriculture as resources changed. We look forward to the publication of Dr. Kennett’s report on this study.

## In Memoriam John Michael Rafter 1954–2023



John Rafter passed away on September 22, 2023. He will be remembered for his many contributions to the study of California rock art, which he approached with his inquisitive mind and eye for detail. He was particularly interested in archaeoastronomy with which his knowledge of ethnology played a large role. His rock art illustrations display his talent as an artist.

PCAS was honored to have hosted John as a guest speaker. He graciously led PCAS rock art field trips and shared his knowledge and enthusiasm. Our condolences to his family, friends, and colleagues.

## Sign up for Ralphs Community Rewards

PCAS thanks Ralphs and all our participants for this opportunity to earn a donation of at least 1 percent of your Ralphs' purchases. Go to [www.ralphs.com](http://www.ralphs.com) and sign in or create an account.

1. On the "My Account" page, scroll to Community Rewards. Link your card by searching for "Pacific Coast Archaeological Society" or inserting the PCAS organization number, QT023.
2. Call 800-443-4438 for assistance.

Thank you for supporting PCAS!

## December Speaker *(continued from p. 1)*

dissertation work and published scholarly research focus on the prehistory of Santa Barbara County, with an emphasis on lithic analysis on the northern Channel Islands.

Dr. Sunell's current research interests include two main projects. First, he is pursuing an analysis of flaked stone tool use, settlement patterns, and late Holocene archaeological dynamics in the area of MCB Camp Pendleton in addition to (and outside of) his role as a staff archaeologist on base. Second, he works with a multitribal coalition among the Chumash descendant community to reclaim indigenous knowledge at the village of Tlakayam'u on western Limuw (Santa Cruz Island, California), bringing archaeological data and methods to bear on questions of interest to that community. His other research interests and recent projects cover a wide range of topics in southern California's past. These include the analysis of spatially distinct toolstone sources at Sec he (Agua Caliente); the study of patterns of kin-oriented modes of production in the Santa Barbara Channel; and the historic period development of transnational material culture patterns among ethnic Mexican and overseas Chinese diaspora communities in Redlands, California.

## 2024 Membership Renewals

PCAS annual memberships expire on December 31, and it's time to renew! Remember, you may pay online with any credit card at <http://www.pcas.org/membrs.html>, or by check with the renewal form attached to this newsletter. If your email, telephone number, or address have changed please email [membership@pcas.org](mailto:membership@pcas.org) with the updated information.

We continue to offer our monthly meetings via Zoom, but we hope to see more members in the meeting room soon. We will be holding our traditional Holiday Meeting at the Duck Club on December 14, and our speaker will be present at the gathering.

As in the past three years, fundraising efforts at our meetings have been sadly limited as we've not been able to offer Joe Hodulik's donation award table. Previously this table supported one of our three annual scholarships. Meanwhile postage and printing costs have drastically increased, but our membership dues remain the same. Perhaps you will consider us in your year-end charitable giving. We are a 501(c)3 corporation and will gladly supply a receipt.

We appreciate your continued support of PCAS and look forward to receiving your renewal for 2024.

# PCAS HOLIDAY MEETING

**Thursday, December 14, 2023, 7 PM**  
**IRWD Duck Club, 5 Riparian View, Irvine**

- **Bring a dessert or side dish to share.**
- **Lecture will begin at 7:30 pm. Speaker will be present at the meeting.**

*Irvine Ranch Water District makes its facilities available for use by residents and nonprofit organizations merely as a public service, but does not, by allowing this use, endorse or support the purpose of the event or its sponsor.*



**Note: The entrance from Campus Drive is right turn only.**

Directions from I-405

1. Exit the 405 Freeway on Culver Drive and go south.
2. Turn right on University Drive.
3. Turn right on Campus Drive.
4. Stay in the right lane and immediately turn right onto Riparian View which is marked by a dark green sign identifying it as the entrance to the San Joaquin Wildlife Sanctuary.
5. Proceed to Duck Club entrance on left. Signs will direct you.

If lost, call Stephen Dwyer —714-969-1911.

## DIG THIS ...



### Exhibits

***The new Agua Caliente Cultural Museum galleries*** are now open. The permanent gallery is devoted to the culture of the Agua Caliente people and has an exhibit of artifacts recovered from the Cultural Plaza excavation. ***For a Love of His People: The Photography of Horace Poolaw*** is exhibited in the changing gallery. Information and timed ticket purchase: [www.accmuseum.org](http://www.accmuseum.org).

### Lectures

***Discovering a Lost Nubian City: Archaeology of Jebel Barkal, Sudan***, by Dr. Geoff Emberling (Kelsey Museum of Archaeology, University of Michigan, Ann Arbor). An in-person and Zoom lecture of the Getty Villa, December 3, 3 pm. Free. Advanced ticket or Zoom registration required: [www.getty.edu/visit/cal/events/ev\\_3706.html](http://www.getty.edu/visit/cal/events/ev_3706.html).

***Collision of Worlds: A Deep History of the Fall of Aztec Mexico and the Forging of New Spain***, by David Carbollo (Boston University), a Cotsen Public Lecture and reception. James West Alumni Center, Founders Room, UCLA, December 7, 6 pm. Free, parking fee. Information and registration: [ioa.ucla.edu/content/collision-worlds](http://ioa.ucla.edu/content/collision-worlds).

***Contexts and Circumstances in Designing the Divine in Ancient Egypt***, by Dr. Jennifer Miyuki Babcock (History of Art and Design, Pratt Institute, Brooklyn, NY). An ARCE/Bowers Museum onsite lecture, December 9, 1:30 pm. Fee: \$15, Bowers and ARCE members free. Recorded lecture available one week after onsite event. Fee: \$10, Bowers and ARCE members free. Ticket purchase and information: [www.bowers.org](http://www.bowers.org).

***Cultural Plaza Preservation Lecture***, by members of the Tribal Historic Preservation Office, a part of the Inaugural Conversations Lecture Series, will present information about the findings recovered during construction of the Cultural Plaza and displayed in the museum. Agua Caliente Cultural Museum, Palm Springs, December 13, 6 pm. Fee: \$10. Information and ticket purchase: [www.accmuseum.org/events](http://www.accmuseum.org/events)

### Lectures (continued)

***Seeing the Light of Day: Rock Paintings and Radiocarbon Dating in Southern California***, by Steve Freers. A virtual lecture of the San Diego Rock Art Association, December 10, 4 pm (PST). Free. Information and required registration: [www.sandiegorockart.org](http://www.sandiegorockart.org).

***The Skeletons of La Consentida***, by José “Pepe” Aguilar. San Diego Archaeological Center, December 16, 11 am. Fee: Pay what you wish. Information and registration: [sandiegoarchaeology.org](http://sandiegoarchaeology.org).

***Past PCAS lectures*** are available on YouTube at [www.youtube.com/@pcas-pacificcoastarchaeolo9403](http://www.youtube.com/@pcas-pacificcoastarchaeolo9403).

### Classes, Meetings, and Events

***Winter Solstice and Holiday Boutique***, an event for all family members, will have Native vendors, frybread, storytelling. Chumash Indian Museum, 3290 Lang Ranch Pkwy, Thousand Oaks, December 9, 10 am–4 pm. Information: [www.chumashmuseum.org](http://www.chumashmuseum.org).

***The 2024 58th Society for California Archaeology Annual Meeting***, Considering Cultural Landscapes, will be held March 7–10 at the Riverside Convention Center: [scahome.org](http://scahome.org).

Visit [www.pcas.org](http://www.pcas.org) for all the latest news.

*Editor's Note: Please confirm time and place of listing prior to the event. Submit items for Dig This to [newsletter@pcas.org](mailto:newsletter@pcas.org).*



[www.facebook.com/pacificcoastarchaeologicalsoc](http://www.facebook.com/pacificcoastarchaeologicalsoc)

## PCAS CODE OF ETHICS

The Pacific Coast Archaeological Society (PCAS) is a nonprofit group of professional and avocational people dedicated to proper management of our cultural resources, public education, and the protection and preservation of archaeological materials and collections.

The following principles have been adopted by the PCAS:

1. Professional methods and forms will be used on all archaeological field surveys, excavations, and laboratory sessions.
2. A complete record of field and laboratory work will be filed with the PCAS Curator and stored at a facility approved by the Society's Board of Directors.
3. No archaeological materials will be removed without proper permits, landowner permission, and a field research design.
4. Unless otherwise legally stipulated before activity commences, all materials collected will be deposited for further research with the Curator at a facility approved by the Society's Board of Directors.
5. All generated reports will be the property of the Society and distributed as deemed appropriate.
6. All Society field activities will be performed only under the direction of a qualified field archaeologist (Principal Investigator) and the supervision of field or site directors.
7. The above principles will be observed on both Society approved projects and projects performed under the direction of an authorized institution or organization.
8. The Society and its members will strive to educate the public of the importance and proper management of our non-renewable cultural resources and to discourage the collection and commercial exploitation of archaeological materials.
9. PCAS members shall not benefit from the acquisition, purchase, sale, or trade of archaeological artifacts, materials, or specimens.
10. All members shall adhere to City, County, State, and Federal antiquities laws.

### In-Person Meeting

Location: **IRWD Duck Club –see p. 4.**  
5 Riparian View, Irvine

*Irvine Ranch Water District makes its facilities available for use by residents and nonprofit organizations merely as a public service, but does not, by allowing this use, endorse or support the purpose of the event or its sponsor.*

### Zoom Meeting

- Email a **new** Zoom registration request by **noon on Thursday, December 14**, to [membership@pcas.org](mailto:membership@pcas.org). You will receive an emailed link to the meeting.
- Guests (non-PCAS members) are welcome with registration.
- When the presentation starts, please **mute your microphone and turn off your webcam**.

PCAS host **Steve Dwyer** will open the Zoom meeting at 7 pm to allow time to resolve any technical problems prior to the beginning of the PCAS General Meeting and lecture at 7:30 pm.

### PCAS Speaker Calendar

**January 11, 2024**

**Dr. Loren G. Davis**

*Deep Time Perspectives on Nez Perce Culture from the Cooper's Ferry/Nipéhe Site, Idaho*

**February 8, 2024**

**David Nichols**

**March 14, 2024**

**Dr. Ben Potter**

**April 11, 2024**

**Jared Mathis**

## 2023 PCAS Board Members and Committee Contacts

<u>Office</u>	<u>Name</u>	<u>Email</u>	<u>Phone</u>
*Vice-President	Steve O'Neil	vicepresident@pcas.org	949-677-2391
*Secretary	Stephen Dwyer	secretary@pcas.org	714-969-1911
*Treasurer	Rene Brace	treasurer@pcas.org	714-544-6282
*Historian/Librarian	Jane Gothold	historian-librarian@pcas.org	562-947-6506
*Refreshments	Irene Foster	ifoster@pcas.org	714-828-0942
Donation-Awards Coordinator	Joe Hodulik	donation-awards@pcas.org	949-300-1864
Field Trips	Stephen Dwyer	fieldtrips@pcas.org	714-969-1911
Membership	Megan Galway	membership@pcas.org	714-539-6354
Native American Liaison	Steve O'Neil	nativeamericanliaison@pcas.org	949-677-2391
Newsletter Editor	Rene Brace	newsletter@pcas.org	714-544-6282
Programs	Joe Hodulik	programs@pcas.org	949-300-1864
Publicist	Joe Hodulik	publicity@pcas.org	949-300-1864
<i>Quarterly</i> Editor	Steve O'Neil	publications@pcas.org	949-677-2391
Scholarship	Megan Galway	scholarship@pcas.org	714-539-6354
Zoom Coordinator	Stephen Dwyer	zoomhost@pcas.org	714-969-1911

\*PCAS Board Member

## PACIFIC COAST ARCHAEOLOGICAL SOCIETY

### 2024 Calendar Year Membership and Subscription Form

Name(s): \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Newsletters will be sent by email unless a mailed copy is requested.

*I have read and agree to abide by the PCAS Code of Ethics* \_\_\_\_\_

Signature

**Membership** (Includes Quarterly & Newsletter)

**Subscription Only**

**Scholarship Fund**

Active Member – \$45

*Quarterly* – \$50

Donation \$ \_\_\_\_\_

Family Membership – \$50

*Newsletter* – \$20

Supporting Member\* – \$55

Donor Member\* – \$75

Lifetime Member\* – \$1000

\* May be individual or family membership

[www.pcas.org](http://www.pcas.org)

**Join online:**

[www.pcas.org/membrs.html](http://www.pcas.org/membrs.html)

**Or return with payment to:**

Pacific Coast Archaeological Society  
PO Box 10926  
Costa Mesa, CA 92627-0926