



# Californian CESU Annual Meeting

December 8th, 2023

9 AM – 12 PM



**Friday, December 8th, 9 AM - 12 PM, Pacific Time**  
**MEETING AGENDA**

9:00 am (Pacific Time)	Zoom login and troubleshooting <a href="https://berkeley.zoom.us/j/2499323841">https://berkeley.zoom.us/j/2499323841</a> Meeting ID: 249 932 3841  Backup Dial-In: 1 669 219 2599 Meeting ID: 249 932 3841  <b>Link to slide deck</b> <a href="https://docs.google.com/presentation/d/17uMGwDNydxVWYrqLtnvoOVLsBy72b7kkqGwdMHw10M0/edit#slide=id.g2632b16a514_27_0">https://docs.google.com/presentation/d/17uMGwDNydxVWYrqLtnvoOVLsBy72b7kkqGwdMHw10M0/edit#slide=id.g2632b16a514_27_0</a>
9:05 am	<b>Dennis Baldocchi (CA-CESU Director) and Nalui Garcia (CA-CESU Administration) UC Berkeley, Californian CESU Host Campus</b> <ul style="list-style-type: none"> <li>• Introductions and Host Campus Roles</li> </ul>
9:10 am	<b>Ben Becker, Science Advisor, NPS Californian CESU</b> <ul style="list-style-type: none"> <li>• Agenda and objectives for meeting</li> <li>• Welcome New Member</li> <li>• Brief Overview of CESU Program and projects/funding</li> <li>• Summary of 2018-2022 CA-CESU Report</li> <li>• Overview of CA-CESU Website and Participation</li> </ul>
9:25 am	<b>Tom Fish, CESU National Program Coordinator, Washington Office</b> <ul style="list-style-type: none"> <li>• New Initiatives for 2024</li> <li>• Recent Developments</li> <li>• Federal Agency Support for CESUs</li> </ul>

9:45 am	<b>Partner Slide Show</b> <ul style="list-style-type: none"> <li>• Veteran Partners ~1 Minute each</li> <li>• Q&amp;A</li> </ul>
10:05 am	<b>William White, Associate Professor of Anthropology, UC Berkeley - New CESU Project Highlight</b>
10:10 am	<b>Research Presentation</b> <b>Albert Ruhi</b> – Assistant Professor, Department of Environmental Science Policy and Management, UC Berkeley, UC Berkeley Representative to the CA-CESU Co-Director, Institute for Parks, People, and Biodiversity <ul style="list-style-type: none"> <li>• “Dams, drought, and river restoration”</li> </ul>
10:20 am	<b>Break</b>
10:30 am	<b>New Partner: Pepperdine University</b> <i>Myun Choe and Florybeth La Valle</i>
10:40 am	<i>Welcome from David Ackerly,          Dean, Rausser College of Natural Resources,          UC Berkeley</i>
10:50 am	<b>Recent Federal Projects Overview &amp; Future Research Directions (2 min each)</b> <ul style="list-style-type: none"> <li>• Catherine Dunkel – Bureau of Ocean Energy Management</li> <li>• Stephanie Coppeto - US Forest Service</li> <li>• Paul Selmants - USGS</li> <li>• Cesar Blanco - USFWS</li> <li>• Jobaid Kabir - U.S. Bureau of Reclamation</li> <li>• Ben Becker - National Park Service &amp; DoD</li> <li>• Other Federal Representatives – Research priorities</li> <li>• Q&amp;A</li> </ul>
11:15 am	<b>Goals for 2024</b> <ul style="list-style-type: none"> <li>• Federal CESU representatives can provide more information to make project administration and processes clearer for non-federal partners</li> <li>• Highlighting in internal and external communications when projects are funded by the CA-CESU</li> <li>• More website engagement outside of NPS/UCB</li> </ul>
12 pm	<i>Adjourn</i>



## CA-CESU Annual Meeting

- Refresh our understanding of the CESU Program
- Current State of the CESU Program
- Better understanding of non-federal partner capabilities
- Better understanding of Federal research needs
- Think about the upcoming year



# Berkeley Rausser

College of Natural Resources



- Host University for Californian CESU.
- We are Supported by the Federal and State Agricultural Experiment Station, so we have a Long History Conducting and Leading Ecosystem Research, with expertise in the biological, physical, and social sciences.
- RCNR Supports: CA-CESU partner activities, training opportunities, student participation, office space for Federal partners, annual meeting, and new website development.
- California Is a Unique Natural Laboratory, Spanning Wide Range of Climates and Ecosystems and Home to Many Indigenous Species
- Contact Information:
  - **Dennis Baldocchi**, *Executive Associate Dean and Director CA-CESU*, [baldocchi@berkeley.edu](mailto:baldocchi@berkeley.edu)
  - **Nalui Garcia**, *Coordinator CA-CESU*, [naluig@berkeley.edu](mailto:naluig@berkeley.edu)

# Overview of CA-CESU

- “The mission of the Californian CESU is to provide research, technical assistance and education across the biological, physical, social and cultural sciences to address natural and cultural resource management issues at multiple scales and in an ecosystem context in California and nationally as appropriate.”
- Our main goal today is to foster more communication and project collaborations.



COOPERATIVE ECOSYSTEM  
STUDIES UNITS  
NATIONAL NETWORK

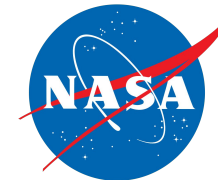
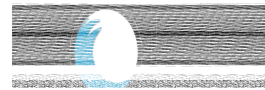


## The Cooperative Ecosystem Studies Unit Program (1999) Provides to Federal Agencies:

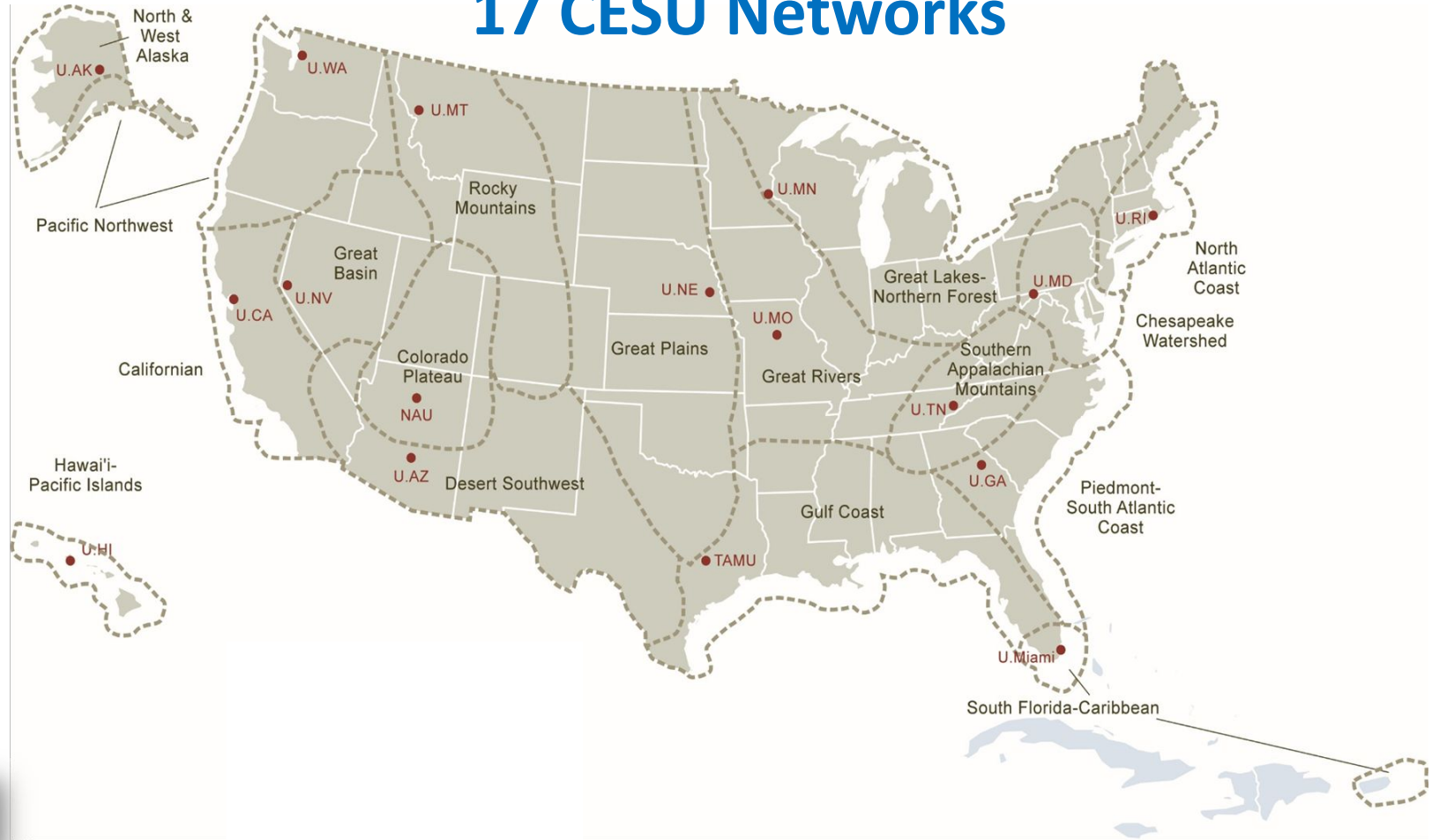
- Scientific Research
- Technical Assistance
- Education



US Army Corps  
of Engineers®



# 17 CESU Networks





## Capacity, Expertise & Partnerships

- 475+ partners
- Unlimited expertise
- Multi-agency



## Workforce

- Partners educate millions of diverse students
- Next generation of NPS employees and volunteers



## Public-relations

- Enhance relationships among parks, local communities, partners, and the public



## Co-Production of Science

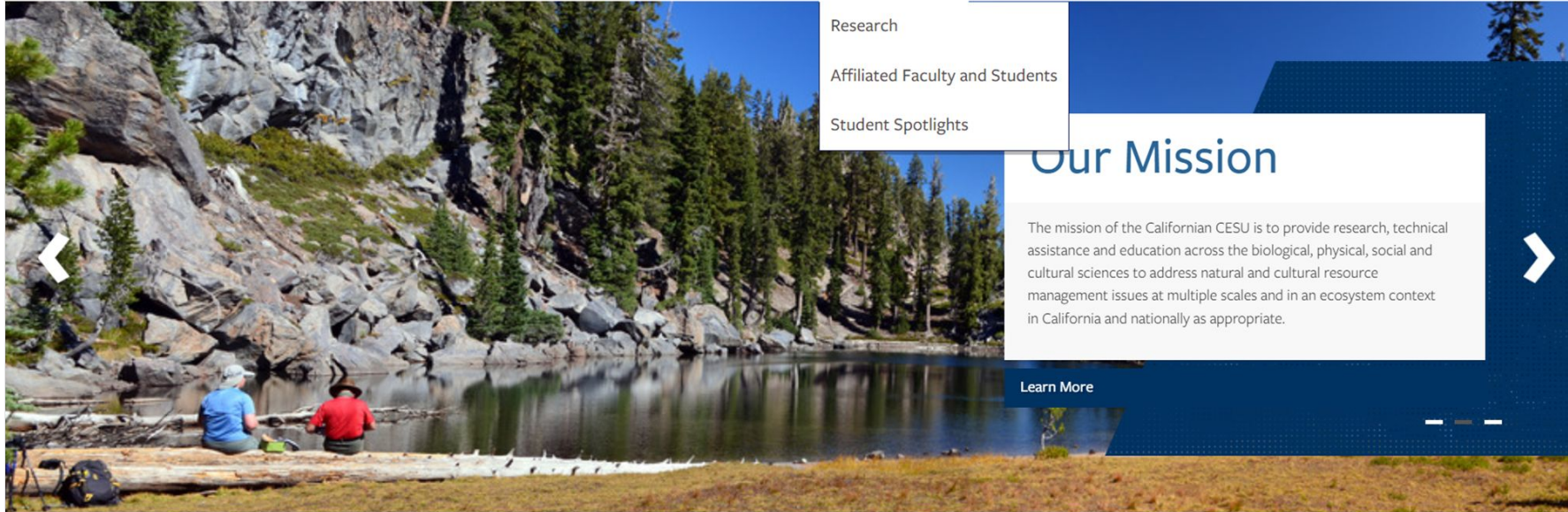
- Substantial Involvement
- Timely
- Relevant
- Actionable
- Less “go-backs”





# Berkeley Californian Cooperative Ecosystem Studies Unit

- ABOUT
- PARTNERS
- FUNDING OPPORTUNITIES
- GET INVOLVED
- PROJECTS
- UC BERKELEY CESU
- NEWS
- CONTACT US



- Research
- Affiliated Faculty and Students
- Student Spotlights

## Our Mission

The mission of the Californian CESU is to provide research, technical assistance and education across the biological, physical, social and cultural sciences to address natural and cultural resource management issues at multiple scales and in an ecosystem context in California and nationally as appropriate.

[Learn More](#)

### FEATURED



### HIGHLIGHT



### NEWS

William White Receives First CESU Grant for LIC

# Berkeley Californian Cooperative Ecosystem Studies Unit



## Funding Opportunities

Connect with CA-CESU

# 26 Funding opportunities in FY23

### Open Funding Opportunities

#### Natural Resource Condition Assessment for Katahdin Woods and Waters National Monument

January 19, 2024

The deadline for responding to this Request for Letters of Research Interest (LOI) is January 19, 2024. Direct questions and letters of interest should be sent to Brian Mitchell, [brian\\_mitchell@nps.gov](mailto:brian_mitchell@nps.gov).

 [RFLOI KAWW NRCA.pdf](#)

#### National Information Collaboration on Ecohydraulics (NICE): Ecohydraulics of Sensitive Areas

December 14, 2023

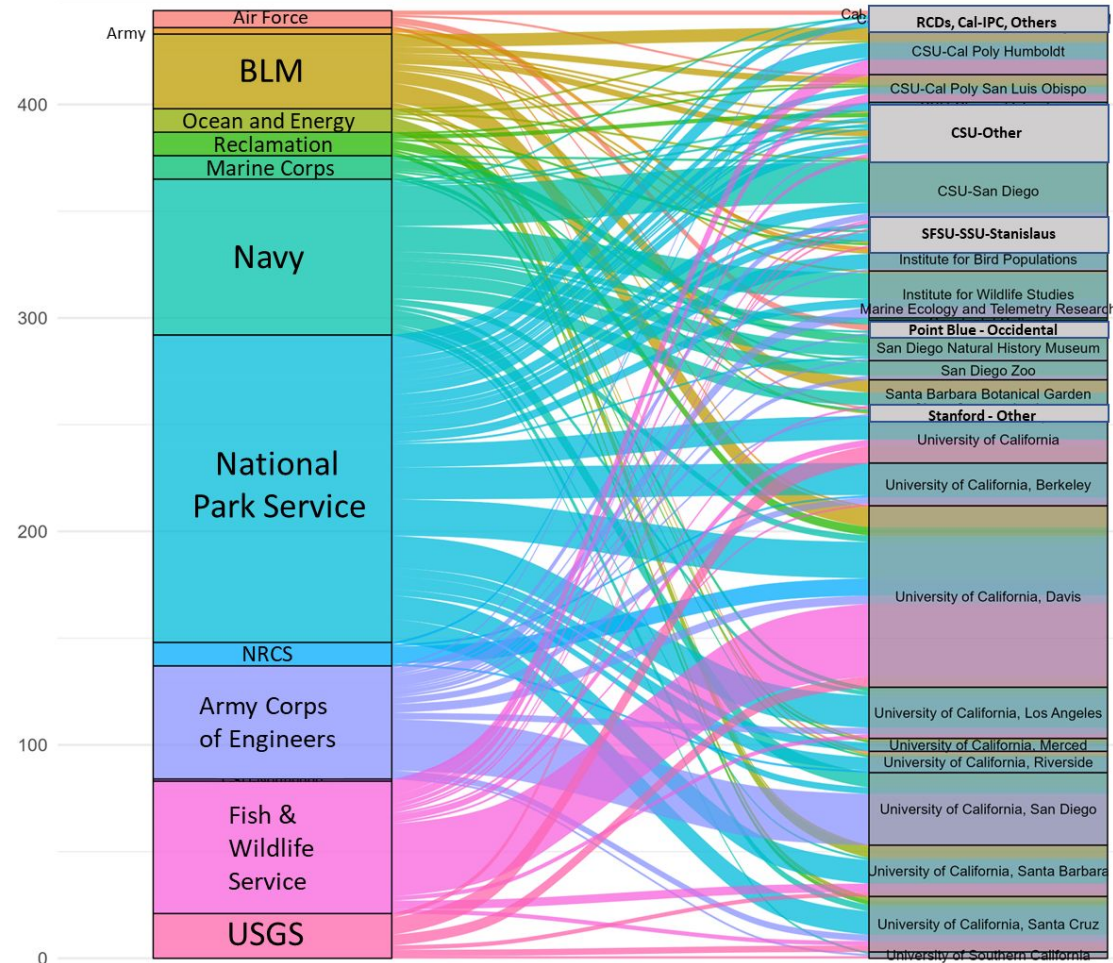
Timeline for Review of Statements of Interest: Statements of Interest should be submitted by December 14, 2023 (2 PM Central Time). ERDC seeks applications for: Advancing the management of navigation channel maintenance in environmentally sensitive locations

# CESU Projects 2018-2022



Bureau of Indian Affairs  
Joined 2022

## Funded Research Projects\*



\*Underestimate based on incomplete data from 2018-2019.

CALIFORNIAN



COOPERATIVE ECOSYSTEM  
STUDIES UNIT

- Publications
- Websites
- Grant Announcements
- Media
- Job Advertisements
- Internal / External
- Sponsored Project Offices
- University Level Tracking

Federal and Partner Co-generated  
Research, Education, and Technical Assistance

# Dr. Tom Fish

## National CESU Program Coordinator



## CESU Partners Non-Federal



# Institute for Wildlife Studies



**Dedicated to conserving wildlife, habitats, and biodiversity**



## Current CESU Projects:

- Department of Defense:
  - Recovery of Endangered San Clemente Loggerhead Shrike
  - Monitoring of Recently Delisted San Clemente Bell's Sparrow
  - Island Fox Conservation Program
  - Shorebird/Seabird Monitoring
- National Park Service:
  - Channel Islands Bald Eagle and Peregrine Falcon Monitoring
  - Review of protocols and SOPs for monitoring salmonids
- Bureau of Land Management:
  - Pronghorn Antelope Genetics and Connectivity
  - Hunter Outreach Regarding Use of Non-lead Ammunition

Contact: David Garcelon – [garcelon@iws.org](mailto:garcelon@iws.org)

- Established track record providing science in service for resource, management and other agencies
- Areas of expertise:
  - Habitat restoration
  - Invasive species control
  - Quantitative analyses of long-term ecological data
  - Population modelling
  - Landscape connectivity
  - Climate resilience and readiness
- Robust scientific analysis, geospatial product development, prioritization, and decision-making support
- Science-management partnerships with integrated stakeholder engagement



# National Association of Tribal Historic Preservation Officers: Protecting Native Places ([nathpo.org](http://nathpo.org))

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NATHPO is a non-profit, nationwide Tribal NGO of Tribal Historic Preservation Officers (THPOs) that supports and encourages Tribal historic preservation programs.

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We provide guidance to preservation officials, elected representatives, and the public about national historic preservation legislation, policies, and regulations. We promote Tribal sovereignty, develop partnerships, and advocate for Tribes in governmental activities on preservation and funding issues.



# California Academy of Sciences



- *Taxonomic Expertise and Natural History Collections*
- *Genomics Lab and Scientific Computing*
- *Field surveys, Specimen Collection and Curation & Community Science*
- *Educational Programs, Outreach, Curriculum and Teacher Professional Development, Data Visualization and Exhibit Design*





# SONOMA STATE UNIVERSITY

## SSU Anthropological Studies Center's Recent and Current Projects through our CESU agreements:

- Maintain and upgrade the archaeological and paleontological collections and exhibits for the Naval Facilities Engineering Systems Command at the Marine Corps Air-Ground Combat Center (MCAGCC), in Twentynine Palms, California. The new exhibits room opened in November, and the collections management will be on-going through at least one more year with potential for renewal.
  - Second phase of archaeological monitoring for the three-year streambank and salmon habitat restoration project in Muir Woods by the National Park Service, Golden Gate National Recreation Area. Fieldwork is final, and reporting is underway.
  - Archaeological data recovery for the Lead Remediation Project at the historic Fort Barry Rifle Range in the Marin Headlands, National Park Service, Golden Gate National Recreation Area.
  - Identification and Evaluation of WWII and Mexican Period Resources for the National Park Service at Point Reyes National Seashore.
- Recently completed an archaeological and documentation project with the National Park Service for the Abandoned Mineral Lands Closures at Whiskeytown National Recreation Area.
- To date, most of our CESU opportunities have been through the National Park Service using the CESU agreement as a federal agreement vehicle, rather than develop specific cooperative agreements. Notably, we have responded to CESU-advertised RFPs (e.g., the MCAGCC project), but they make up a small percentage of the actual CESU work we have completed.

## Our goals for SSU's participation in the CESU in general are:

- To see an increase in CESU opportunities with other federal agencies.
- To broaden our collaborative projects with other CESU partners.
- To bring more SSU faculty into inter-disciplinary CESU projects.
- To better disseminate CESU RFPs to those interested SSU faculty.
- To expand our recognized CESU qualifications and on-campus partners

University of California, Los Angeles

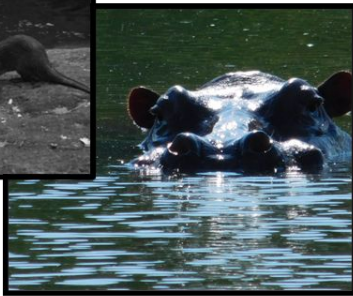
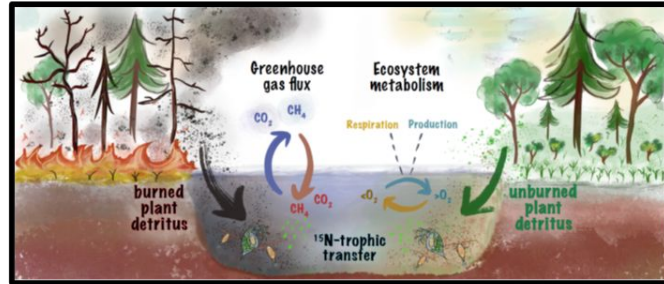
- **CA-CESU & UCLA Projects (2018-Present):**  
≈ \$3.8 M in awards
- **UCLA La Kretz Center:** Coordinates government and non-government partnerships to produce cutting edge research that facilitates conservation policy outcomes.
  - **California Conservation Genomics Project (CCGP)**
- **Strong interest in collaborations on biodiversity conservation, urban ecology and genomic data for California species.**



**Contacts: David Blake ([dblake0405@g.ucla.edu](mailto:dblake0405@g.ucla.edu))  
Brad Shaffer ([brad.shaffer@ucla.edu](mailto:brad.shaffer@ucla.edu))**

# UCSD CESU Jonathan Shurin Lab

Climate and control of aquatic mountain ecosystems from top to bottom



RESEARCH ARTICLE Global Change Biology WILEY

Fire transforms effects of terrestrial subsidies on aquatic ecosystem structure and function

Christopher B. Wall<sup>1</sup> | Cody J. Splegel<sup>1</sup> | Evelyn M. Diaz<sup>1</sup> | Cindy H. Tran<sup>1</sup> | Alexia Fabiani<sup>1</sup> | Taryn Y. Broe<sup>1</sup> | Ellsabet Perez-Coronel<sup>1</sup> | Sara L. Jackrel<sup>1</sup> | Natalie Mladenov<sup>2</sup> | Celia C. Symons<sup>3</sup> | Jonathan B. Shurin<sup>1</sup>

Current water quality guidelines across North America and Europe do not protect lakes from salinization

William D. Hintz<sup>a,b,1,2</sup>, Shelley E. Arnott<sup>1</sup>, Celia C. Symons<sup>1</sup>, Danielle A. Greco<sup>1</sup>, Alexandra McClymont<sup>1</sup>, Jennifer A. Brentrup<sup>1</sup>, Miguel Canedo-Arguelles<sup>1</sup>, Alison M. Derry<sup>1</sup>, Amy L. Downing<sup>1</sup>, Derek K. Gray<sup>1</sup>, Stephanie J. Melles<sup>1</sup>, Rick A. Relyea<sup>1</sup>, James A. Rusak<sup>1</sup>, Catherine L. Searle<sup>1</sup>, Louis Astorg<sup>1</sup>, Henry K. Baker<sup>1</sup>, Beatrix E. Beisner<sup>1</sup>, Kathryn L. Cottingham<sup>1</sup>, Zeynep Ersoy<sup>1</sup>, Carmen Espinosa<sup>1</sup>, Jaclyn Franceschini<sup>1</sup>, Angelina T. Giorgio<sup>1</sup>, Norman Gobelner<sup>1</sup>, Emily Hassal<sup>1</sup>, Marie-Pier Hébert<sup>1,3</sup>, Mercedes Huynh<sup>1</sup>, Samuel Hylander<sup>1</sup>, Kacie L. Jonassen<sup>1</sup>, Andrea E. Kirkwood<sup>1</sup>, Silke Langenheder<sup>1</sup>, Ola Langvall<sup>1</sup>, Hjalmar Laudon<sup>1</sup>, Lovisa Lind<sup>1</sup>, Maria Lundgren<sup>1</sup>, Lorenzo Proia<sup>1</sup>, Matthew S. Schuler<sup>1</sup>, Jonathan B. Shurin<sup>1</sup>, Christopher F. Steiner<sup>1,4</sup>, Maren Striebel<sup>1</sup>, Simon Thibodeau<sup>1</sup>, Pablo Urrutia-Cordero<sup>1,10</sup>, Lidia Vendrell-Puigmitja<sup>1</sup>, and Gesa A. Weyhenmeyer<sup>1</sup>

Ecology, 01(0), 2020, e02991  
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Ecosystem effects of the world's largest invasive animal

JONATHAN B. SHURIN<sup>1,4</sup> NELSON ARANGUREN-RIANO<sup>2</sup> DANIEL DUQUE NEGRO<sup>2</sup> DAVID ECHEVERRI LOPEZ<sup>3</sup>  
NATALIE T. JONES<sup>1,4</sup> OSCAR LAVERDE-R.<sup>2</sup> ALEXANDER NEU<sup>1</sup> AND ADRIANA PEDROZA RAMOS<sup>2</sup>

# Point Blue Conservation Science



Our 160 scientists develop nature-based solutions to climate change, habitat loss, and other environmental threats through science, partnership, and outreach.



Since 1965 we've used a rigorous and collaborative approach to track ecosystem health and inform impactful solutions for wildlife and people.



From the Sierra to the sea, across the Western Hemisphere, and as far as Antarctica, we're planning for the changes ahead.

[learn more at pointblue.org](https://www.pointblue.org)

**Primary activities:**

Ecological research, monitoring, and conservation of birds (and insect pollinators)

- studying population responses to climate change, fire, and forest management
- assessing status and recommending conservation measures for species of concern
- advising on bird-friendly habitat restoration
- designing and implementing long-term monitoring programs
- avian demographic monitoring through the MAPS and MoSI programs
- Incorporating new technologies, especially Autonomous Recording Units

**Focal regions include:**

- Pacific Northwest
- Sierra Nevada
- Southwest
- Pacific Islands

**Contact information:**

Rodney Siegel, Executive Director

(707) 789-3224

*rsiegel@birdpop.org*



2022







# The Southern California Marine Institute (SCMI)

2023

SCMI is a consortium representing a strategic alliance of 24 major universities, colleges, and foundations in Southern California engaged in specialized marine research and education.

We are a full functioning marine research institute equipped with offices, laboratories, classrooms, a seawater filtration system, dive locker, a warehouse, small boats and the Research Vessel Yellowfin.

The mission of the Southern California Marine Institute (SCMI) is to foster marine research and education, focusing on urban impacts of the greater Los Angeles region on the coastal ocean. We seek to improve scientific understanding and the development of solutions that will enable coastal waters and watersheds to thrive, adapt and become resilient to ongoing environmental stressors.

Within the last few years SCMI had supported research on the restoration of our fisheries and nearshore habitats. These restoration projects include:

- Protected Giant Sea Bass, we conducted the first successful spawning and rearing of baby giants. (CSUN Dr. Larry Allen's Giant Sea Bass Acoustic Study)
- Endangered White Abalone, the first release of White Abalone on the PV Shelf. (The Bay Foundation)
- Red Abalone, we are actively facilitating the reintroduction of this valuable fishery species. (The Bay Foundation)
- Lease holder for the construction of the first offshore restoration rocky reef in California's history. (Palos Verdes Restoration Reef Project)
- CA-CESU Project: The Environmental Status of Artificial Structures Offshore California-partnered with Cal Poly Pomona and The Vantuna Research Group (BOEM)



We are dedicated to studying long-term and large spatial scale ecological processes in the Southern California Bight.

## Expertise:

- Biological Monitoring of Kelp Forest, Rocky Reef and Estuarine Ecosystems
- Artificial Reef Ecology
- Fisheries Studies
- Water Quality Monitoring
- Nearshore Habitat Restoration
- Side Scan Sonar and Bathymetric Surveys
- Ichthyoplankton Studies
- Fish Life History Studies
- ROV/Stereo-video Surveys

## Current CA-CESU Projects:

- Behavioral Response of Rock Crabs to the EMF of Subsea Cables and Potential Impact to Fisheries (BOEM) - Completed in FY23
- Safety Zone Kelp Forest Monitoring at San Clemente Island (U.S. Navy)
- The Environmental Status of Artificial Structures Offshore California - partnered with Cal Poly Pomona and Southern California Marine Institute (BOEM)



### CONTACT:

Chelsea Williams  
Assistant Director  
[vrg@oxy.edu](mailto:vrg@oxy.edu)  
[oxy.edu/vrg](http://oxy.edu/vrg)

# Occidental

COLLEGE

# UC DAVIS

2023

50 current CESU projects with:

Bureau of Land Management

Bureau of Reclamation

NOAA

National Park Service

US Fish & Wildlife Service

US Geological Survey

USDA Forest Service

US Army Corps of Engineers

US Department of the Navy

Total awards (2016-2028): \$21.2 M

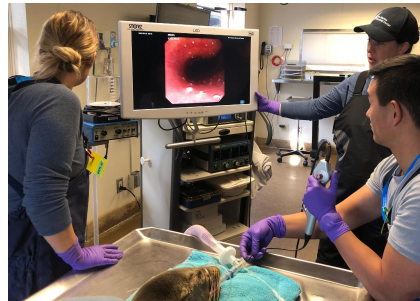
Project topics represent a broad range of disciplines, organisms, ecosystems, and approaches.

Contact: Dan Potter,  
Department of Plant Sciences,  
[dpotter@ucdavis.edu](mailto:dpotter@ucdavis.edu)

# The Marine Mammal Center

*Advancing global ocean conservation through marine mammal rescue and rehabilitation, scientific research, and education*

- World's largest marine mammal hospital
- Responded to over 25,000 animals in California and Hawaii
- Hundreds of peer-reviewed papers on marine mammal science
- Teaching hospital for students, scientists, and veterinarians



# California Association of Resource Conservation Districts (CARCD)

- **CARCD** is a 501c3 non-profit membership association dedicated to serving as a strong advocate, technical resource, and partner to California's 95 Resource Conservation Districts (**RCDs**)
- We foster connections and collaboration within the RCD network, amplifying the local impact of RCDs in California, strengthening locally-led conservation and stewardship of natural and agricultural resources.
- We fund and manage multi-RCD projects using block grants from agencies, foundations, and other donors
- Able to find best and highest use of funds through statewide access to projects and expertise of partners





CALIFORNIA STATE UNIVERSITY  
**FULLERTON**<sup>™</sup>

Orange County



2022

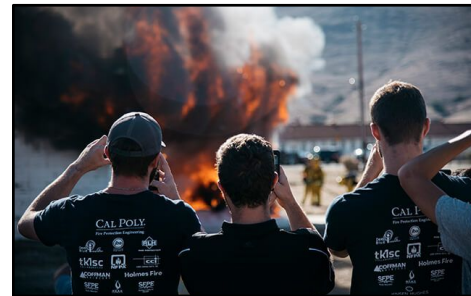
- 110 degree programs: 55 undergrad, 53 MS, 2 PhD
- ~41,000 enrolled students
  - > 30% first-generation
  - > 48% Native American, Hispanic, Black, or Pacific Islander
- Faculty awarded \$31.5 million in grants / contracts in AY 19-20
- Strong research programs in Biological Science (marine systems, desert systems, plant biology), Geology (Marine Geology, Geochemistry, Sedimentology), Anthropology, Environmental Science, Engineering
- Ongoing CESU projects: Long-term monitoring of rocky intertidal systems (BOEM, US Navy)
- Strong interest in additional collaborations, especially for coastal marine and desert research

Contact: Jennifer Burnaford  
jburnaford@fullerton.edu



# Cal Poly San Luis Obispo

- Focus on research and teaching; expertise in many disciplines
- Many strong undergraduate programs; several Master's programs including Biology/Ecology, Agriculture, Environmental Science/Management, Engineering (Fire, Water, Environmental, and others)
- Existing CESU projects
  - Offshore wind and interactions with fisheries (BOEM)
  - Fisheries monitoring (NOAA)
  - Light and noise pollution and avian fitness (NPS)
- We are always looking for more collaborations, especially for projects in Central CA; Fire Science, Water, other Engineering, and Applied Ecology and Marine Science are particular strengths
- Contact: Benjamin Ruttenberg  
bruttenb@calpoly.edu



## Mission:

- Support the conservation of marine mammal species and populations through scientific research
- Promote the development, improvement, and use of technologies to support our research and to make these tools accessible to the greater scientific community



## Examples of Current Research Projects:

- Southern Resident Killer Whale – habitat use, prey consumption, health (NOAA, Rose Foundation)
- Cook Inlet Beluga – data management and catalog development/Photo-ID matching for aerial and vessel (NOAA)
- Tag Development (ONR, LMR, Fleet, NOAA)
- Harbor porpoise surveys in the Northwest Training Range Complex (Hood Canal, WA)- WA CESU (NAVSEA)
- Demographics, Behavior, Effects from military activities in SoCAL and at Guadalupe Island (ONR, LMR, Fleet)

## CA CESU Project (NAVFAC):

- Cuvier's Beaked Whale and Fin Whale Surveys at the Southern California Anti-submarine Warfare Range (SOAR)
1. What is the seasonal occurrence and abundance/density of beaked whales and ESA-listed baleen whales within the Navy's Southern California Range Complex?
  2. Does exposure to sonar or explosives impact the long-term fitness and survival of individuals or the population, species, or stock (with focus on blue whale, fin whale, humpback whale, Cuvier's beaked whale, and other regional beaked whale species)?
  3. What are the baseline population demographics, vital rates, and movement patterns for a Cuvier's beaked whales and fin whales?



# Range-wide Western Pond Turtle Status Assessment on Military Lands: DoD & SI Cooperative Agreement



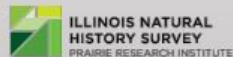
- **Declining due to habitat loss, fire, drought, exotic predators & competitors, and disease**
- **Proposed by USFWS for ESA listing**



- **DoD owns significant portion of remaining suitable habitat**
- **Status assessment and planning is needed for Integrated Natural Resource Plans (INRMP) and species conservation strategy**
- **Project Goals:**
- Collate historical presence and abundance data
- Determine occupancy, abundance & demography on 11 California installations
- Determine occupancy & abundance of red-eared sliders and pathogens/disease on installations.



Smithsonian



Project Personnel: T. Akre (PI; SI), M. Dreslik (Co-I; UI), M. Parry & E. Asche (students; UI); R. Lovich (Navy)

# Steve Blumenshine: Interim Executive Director of CSU-WATER (a CSU System Affinity Group)

(sblumens@csufresno.edu)

2022

**FRESNO STATE**

California Water Institute



## CSU-WATER

### (Water Advocacy Towards Education & Research)

The California State University is helping change the way California manages water. Founded in 2008 and composed of more than 650 water experts from throughout its 23 campuses, CSU-WATER is addressing water management solutions through research, partnerships, education and training in conjunction with community, agency, and industry partners.

The **California Water Institute** mission is to engage the San Joaquin Valley, California, and the world with university faculty, staff, students, and external partners to pursue sustainable water resource management solutions through outreach, research, and education.

CWI & partner expertise ranges from engineering, biology, ag, education, hydrogeology, chemistry, among others.



# Protecting California's environment and economy from invasive plants

Home About ▾ Plants ▾ Resources ▾ Solutions ▾ Join, Renew or Donate 🔍

Cal-IPC works to stop the spread of invasive plants across California...





# Community-based Participatory Research 2022

Contact: Jeff Lauder, Executive Director, [jeff@sierrastreamsinstitute.org](mailto:jeff@sierrastreamsinstitute.org)



## RESEARCH

Long-term monitoring and bioassessment

Community Health Impacts of Mining Exposure (CHIME)

Influence of forest structure on burn severity

## RESTORATION

Riparian floodplain, wetland, and vegetation restoration

Brownfields contaminated site remediation

*CA CESU Project:* Beale Air Force Base Dry Creek Riparian Restoration and Management

## EDUCATION

NSF Our Forests program: 3<sup>rd</sup>-5<sup>th</sup> grade curriculum and field investigations

California Naturalists

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





# California State University Los Angeles



- ~26K enrolled students
  - 55% First generation students
  - 75% Latinx, Black or Native American
  - Consistently ranked highest for student economic mobility
- Dedicated to engagement, service, and the public good
- Research and graduate programs in Biological Sciences, Geosciences, Anthropology, Hydrology, Environmental Engineering, Environmental Science, Environmental Chemistry
- Newly established Center for Urban Ecology
- Looking for new collaborations in urban ecology, conservation genomics, geosciences, anthropology
  - Contact: Andres Aguilar - [aaguil67@calstatela.edu](mailto:aaguil67@calstatela.edu)



The Center for Conservation Biology is an organized research unit. Our mission is to assist in the conservation and restoration of species and ecosystems by facilitating the collection, evaluation, and dissemination of scientific information.



*CESU Contact:* Lynn Sweet, Assistant Research Ecologist  
*Director:* Darrel Jenerette, Professor and Landscape Ecologist

# California State University, Fresno

Exploration, Excellence, Inclusion, and Community

- Unrivalled access to Central California National Parks and Forests
- Undergraduate programs in biology, environmental science, geology, and master's programs stressing the environment as a living laboratory for student exploration and engagement

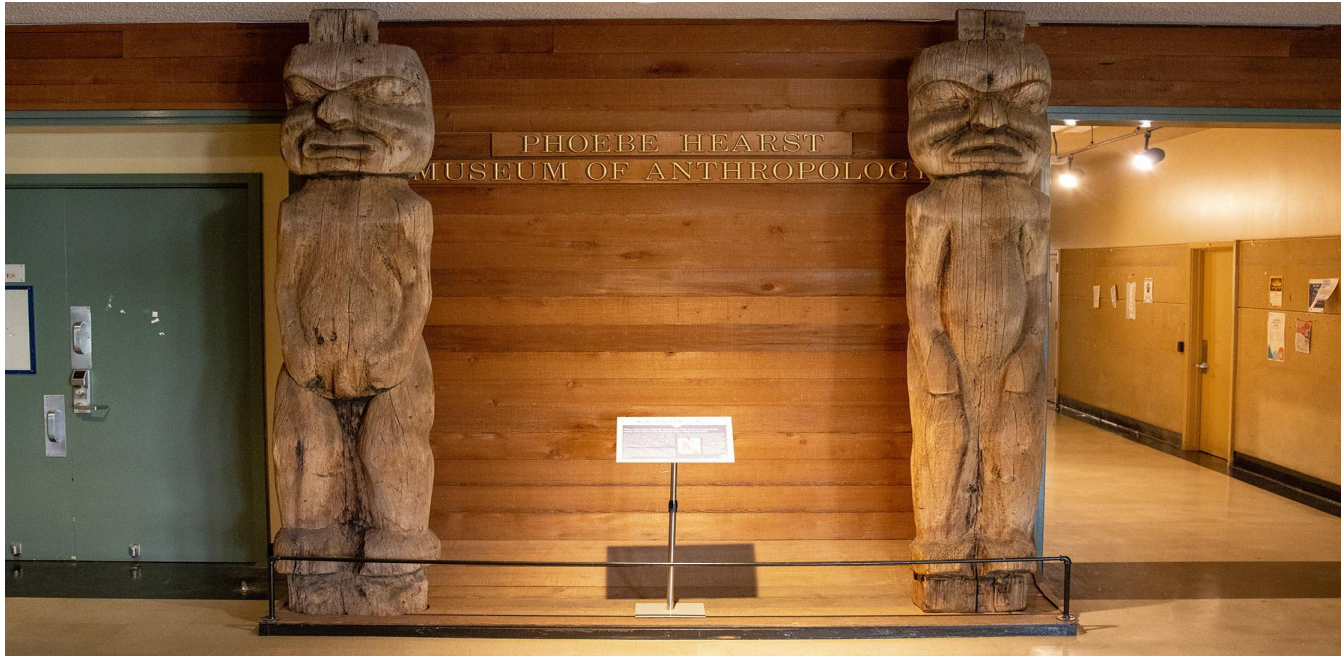
Contact: Aric Mine, PhD. Associate Professor Earth and Environmental Sciences





**UC Berkeley Professor William White**  
**Department of Anthropology**

## **Historical Archaeology**



# *ETHNOGRAPHIC OVERVIEW AND ASSESSMENT OF 3 NPS UNITS ON ST. CROIX, USVI*

- Document the ethnohistorical context of these units.
- Document contemporary Indigenous associations
- Document traditional uses and cultural significance of sites eligible for inclusion in the National Historic Preservation Act



Contact William A. White, Department of Anthropology, UC Berkeley

## 10 Minute Break



# UC Berkeley Professor Albert Ruhi

## Department of Environmental Science, Policy and Management

### Freshwater Ecology & Conservation



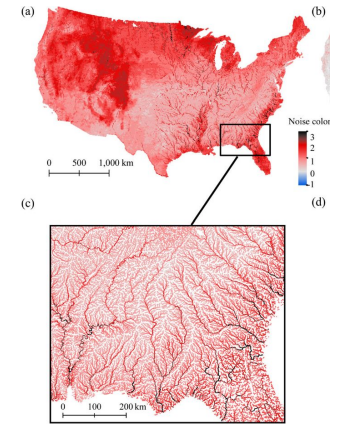
Global Change Biology

Global Change Biology (2015) 21, 1482–1496, doi: 10.1111/gcb.12780

#### Anomalous droughts, not invasion, decrease persistence of native fishes in a desert river

ALBERT RUHI<sup>1</sup>, ELIZABETH E. HOLMES<sup>2</sup>, JOHN N. RINNE<sup>3</sup> and JOHN L. SABO<sup>1,4</sup>

<sup>1</sup>Global Institute of Sustainability, Arizona State University, Tempe, AZ 85287, USA, <sup>2</sup>Northwest Fisheries Science Center, NOAA Fisheries Service, Seattle, WA 98112, USA, <sup>3</sup>Southwest Forest Science Complex, Rocky Mountain Research Station, Flagstaff, AZ 86001, USA, <sup>4</sup>School of Life Sciences, Arizona State University, Tempe, AZ 85287, USA



#### Linkages between flow regime, biota, and ecosystem processes: Implications for river restoration

Margaret Palmer<sup>1\*</sup>† and Albert Ruhi<sup>2\*</sup>

**Welcome from David Ackerly  
Dean, Rausser College of Natural Resources  
UC Berkeley**



**Berkeley Rausser**  
College of Natural Resources

## New CA-CESU Member -2023



# Pepperdine University

CA-CESU

Flo La Valle, PhD  
Assistant Professor of Biology  
Natural Science Division  
[florybeth.lavalle@pepperdine.edu](mailto:florybeth.lavalle@pepperdine.edu)

# PEPPERDINE

UNIVERSITY

## Expertise:

- Ecological monitoring of rocky reef ecosystems
- Coral reef ecology and metabolism
- Urban and behavioral ecology
- Plant drought tolerance
- Water quality monitoring
- Nearshore habitat restoration
- MPA ecology
- Chaparral plant ecophysiology
- Post-fire ecology
- Indigenous and community-based research questions



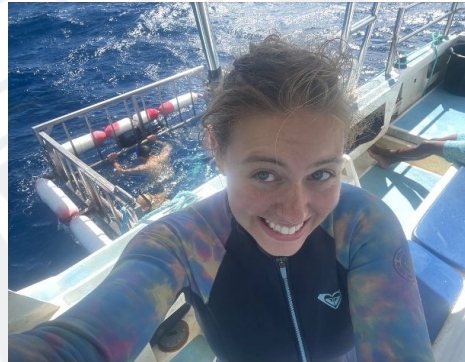


## Past and Present Projects and Partnerships:

Survey of <b>Genetic Diversity of Coyotes</b> in the Los Angeles Metropolitan Area and Survey of <i>Leptospira</i> in Urban Wildlife of Southern California	National Park Service
Characterization, Evaluation and Control of <b>Invasive Species</b> in the Malibu Creek Watershed	Las Virgenes Municipal Water District
High nutrient <b>submarine groundwater discharge</b> delivery effects on coastal primary productivity on coral reefs in Maunaloa Bay, Hawaii	National Science Foundation
<b>Foliar Water Uptake</b> by Ferns in Island versus Mainland Ecosystems	National Park Service
<b>Post-fire</b> fern microclimate and recovery	National Park Service
Assessing Impact of <b>Invasive Crayfish Removal</b> on Endangered Species in San Francisquito Creek (CA)	National Fish and Wildlife Foundation
Integrating Population Genomics and Microbial Metagenomics of the <b>Lone Star Tick</b> , an Expanding Arthropod Disease Vector	National Institutes of Health
Attitudes Regarding <b>Purified Recycled Water</b>	Las Virgenes Municipal Water District
Recreational Fishing Regulations for the Endemic <b>California Grunion</b> , <i>Leuresthes tenuis</i>	CA Fish & Game Commission, CA Fish and Wildlife, Heal The Bay, and Oceana
Additional agency partnerships include: USGS, NPS, CA State Parks, CA Fish and Wildlife, NOAA, US Army Corps of Engineers, California Coastal Commission, LA County Beaches and Harbors, Resource Conservation District of Santa Monica Mountains.	

## Ecosystems and Areas of Interest:

- Santa Monica Mountains National Recreation Area
- Channel Islands
- Physical oceanography of coastal systems in Southern California and Hawaii
- Amphibian conservation across California and in South America
- Plant physiological ecology across California
- Native medicinal plants in Southern California
- Behavioral ecology of urban and non-urban coyotes in Southern California



# CA-CESU Federal Agencies



# BOEM-Funded Research with Californian CESU Partners – Fiscal Year 2023

## 11 Studies by 6 CESU Partners in FY 2023 (\$12.2 Million Cumulative Funding)

### Cal Poly San Luis Obispo:

- Scenarios for Offshore Renewable Energy along the Central California Coast

### Occidental College:

- ✓ Supplemental Data Regarding the Behavioral Response of Rock Crabs to the EMF of Subsea Cables and Potential Impact to Fisheries

### San Diego State University:

- Archaeological and Biological Assessment of Submerged Landforms off the Pacific Coast

### Southern California Marine Institute:

- The Environmental Status of Artificial Structures Offshore California

### UC Santa Barbara:

- ✓ A Demonstration Marine Biodiversity Observation Network (BON) for Ecosystem Monitoring
- ❖ Facilitating Resilience and Adaptation in Commercial Fisheries in Response to Offshore Renewable Energy Development and Climate Change
- Net Environmental Benefit Analysis of Pacific Platform Decommissioning Scenarios
- Understanding Biological Connectivity Among Offshore Structures and Natural Reefs
- Using Outcomes from Marine Protected Area Implementation to Infer Potential Socioeconomic Consequences of Offshore Energy Development to Commercial Fisheries

### UC Santa Cruz:

- 2019-2024 BOEM-MARINE (Multi-Agency Rocky Intertidal Network)
- ❖ 2023-2028 BOEM-MARINE

❖ Started in FY 2023

✓ Completed in FY 2023



**BOEM** Bureau of  
Ocean Energy Management

Cathie Dunkel, Environmental Studies Coordinator, BOEM Pacific Regional Office, catherine.dunkel@boem.gov

### BOEM's Mission:

Manage development of U.S. Outer Continental Shelf energy and mineral resources in an environmentally and economically responsible way.

<https://www.boem.gov>

### BOEM's Environmental Studies Program Mandate:

Conduct studies that will provide the information needed to **assess and manage impacts on the human, marine, and coastal environments** from offshore energy and marine mineral development.

<https://www.boem.gov/environmental-studies>

### BOEM's Highest-Priority Information Needs in Pacific Region:



Environmental effects of **wind energy development** offshore California, Oregon, Washington, and Hawaii



Environmental effects of **oil and gas decommissioning** offshore California

<https://www.boem.gov/Invitation-Pacific-Study-Ideas-FY2025>

**BOEM's Technical Representative to Californian CESU:**



## **A look back at 2023**

- Internal awareness of CA CESU agreement and benefits
- Awarded two new agreements! One new agreement in the works. Renewed one agreement.
  - Spotted owl and vegetation monitoring in treatment areas
  - Post-fire sequoia monitoring
  - Curation and digitization of herbaria records (Shasta-Trinity and Klamath NFs)
- Findings:
  - Agreement (and the overhead rate) is very poorly understood by some partner (Univ) admin staff.
  - A sufficient cost-share match can sometimes be quite challenging for a university partner.

## **Planning for 2024**

- More internal roadshows, improving awareness
- Connecting with potential partners

## **Contemporary Partnership Ideas/Needs**

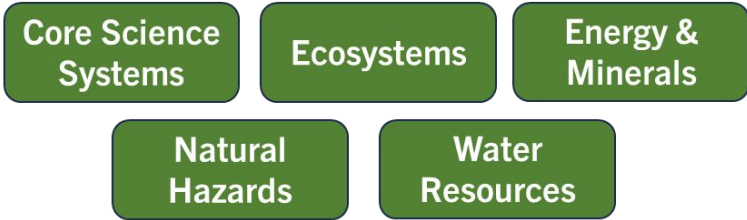
- Wildfire Crisis Strategy Priority Landscapes
  - Keystone Agreement with NFWF; RFP out soon.
- Post-fire and Reforestation

## **US Forest Service Contact**

Stephanie Coppeto, Regional Monitoring Planner, [stephanie.coppeto@usda.gov](mailto:stephanie.coppeto@usda.gov)



## USGS Mission Areas:



### USGS Science Centers in California:

- California Water (CAWSC)
- Geology, Minerals, Energy & Geophysics (GMEG)
- Earthquakes (ESC)
- Pacific Coastal & Marine (PCMSC)
- Western Ecological (WESC)
- Western Geographic (WGSC)

### 2023 USGS-CESU Agreements - California:

Seven initiated in 2023 totaling \$694,317

- UC Davis (3) - \$398,988
- UC System - \$201,178
- Florida Atlantic University - \$50,522
- University of Southern California - \$35,000
- UC Santa Cruz - \$8,629



USGS CESU Contact: Paul Selmants, [pselmants@usgs.gov](mailto:pselmants@usgs.gov)

# U.S. Fish and Wildlife Service

## Pacific Southwest Region (Region 8)



- 5 Main Natural Resources Programs:
  - Ecological Services; Refuges; Fish and Aquatic Conservation; Migratory Birds; Science Applications
- Existing CESU Projects (w/CA CESU & Other CESUs):
  - Since 2021 funded 19 projects totaling \$2 million
- Projects covered the following topics/areas:
  - Pollinators, sage grouse, Foothill Yellow-legged frog
  - San Joaquin Kit Fox (CVPIA)
  - Lahontan Cutthroat Trout, Devil's Hole Pupfish
- Current Priorities:
  - Pollinators, At-Risk, Listed, and Other Species
  - Imperiled Fish Species (Delta Smelt, Salmonids)
  - Landscape Scale Science
    - Fire Science (e.g. forest/fuels and wildlife; fire/invasives cycle in sagebrush)
    - Water-Related Science (e.g. Klamath Basin and California Water)



Cesar Blanco, Ph.D., Fish & Aquatic Conservation ([cesar\\_blanco@fws.gov](mailto:cesar_blanco@fws.gov))

Matthew Dekar, Ph.D., Science Applications ([matthew\\_dekar@fws.gov](mailto:matthew_dekar@fws.gov))

# RECLAMATION

*Managing Water in the West*

## 2023 CESU Project Overview & Future Research Direction



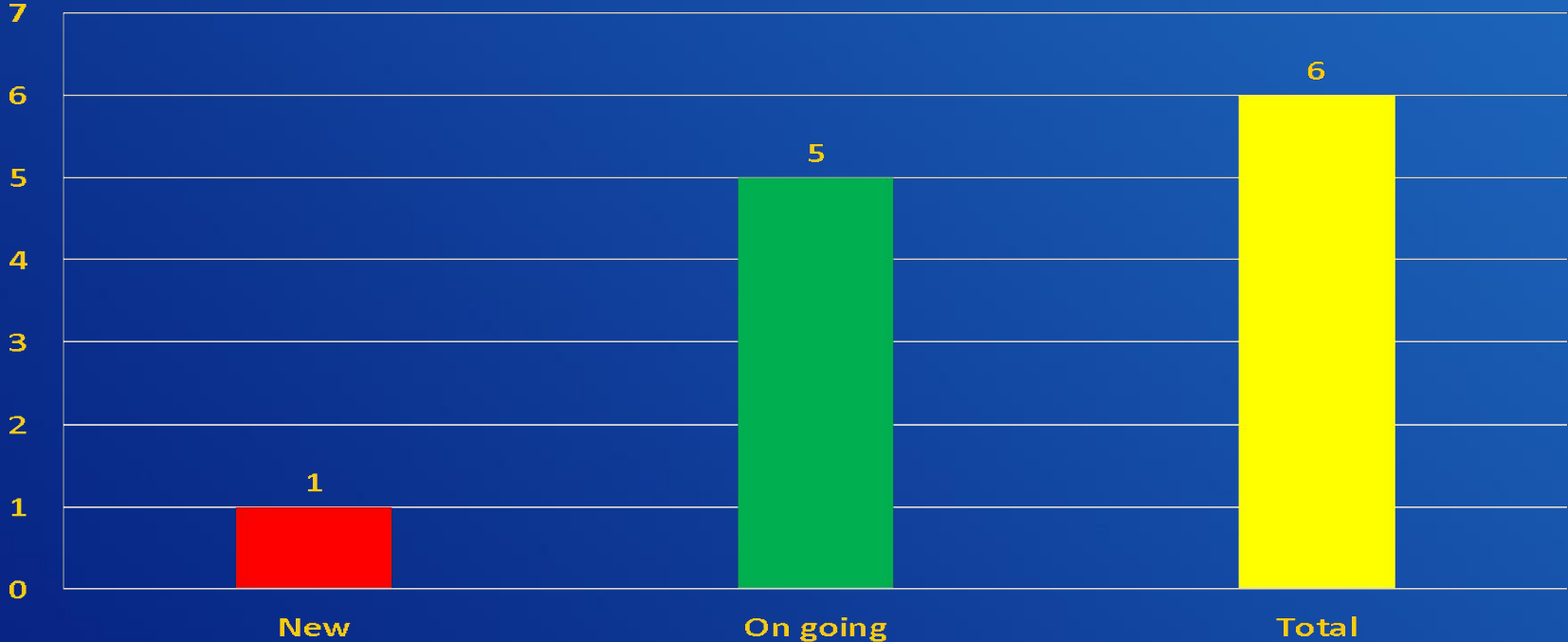
**Jobaid Kabir**



U.S. Department of the Interior  
Bureau of Reclamation



# No of FY23 Reclamation Projects



RECLAMATION

# FY 2023 Reclamation Projects (\$14,130,408)



# Potential Future Directions

- **Fisheries Mitigation**
- **Salinity Management**
- **Forest Fire Impact and Forecasting**
- **Climate Change Impact Analysis and Mitigation**

Ben Becker

National Park Service Science Advisor and CESU lead

bbecker@berkeley.edu

- National Park Service
  - 420+ parks nationwide, 27 in California
- Themes:
  - Data Science, Salmonids, eDNA, Monitoring, Joshua Trees, Film Preservation, Amphibians, Condors, Spotted Owls, Fire planning, Abalone, Oral Histories, Field Stations, Climate Adaptation Modeling
- ~\$4.5m in FY23 (40 New Projects)
- New and Ongoing Projects with:
  - Chico State
  - Sac State
  - Sonoma State
  - SFSU
  - CSU Monterey Bay
  - Cal Poly SLO
  - Cal Poly Humboldt
  - UC Berkeley
  - UC Davis
  - UC Santa Cruz
  - UC Merced
  - UC Santa Barbara
  - UC Riverside
  - UCLA
  - UC San Diego
  - Institute for Bird Populations
  - Institute for Wildlife Studies
  - Desert Botanical Garden





# Department of Defense

## DoD Representatives:

Liz Galli-Noble, Program Director, Legacy Resource Management Program, (OASD(EI&E)/ODASD(E&ER))  
Kim O'Connor, Navy, Conservation Program Manager, Envir Readiness Division, US Pacific Fleet  
Derrick Golla, Contractor, BAH

- DoD considers our membership in all of the CESUs to be crucial to our mission.
- Many of our most important natural and cultural resource projects in the western region are done through the CESU Network, and that is especially true for the Californian CESU.
  - Example: the delisting of 5 TES species on San Clemente Island. Talk about an awesome achievement!!!!
- In FY22 DoD-wide funded CESU projects for a total of >\$150M, in all 17 CESU regions; we anticipate FY23 numbers to be the same or to exceed that amount.
- Just reading the numbers for Calif CESU affirms our investment and partnership with a wide array of Calif CESU members.
- The final slide shows our DoD Legacy, NR and CR program priorities for FY24 and FY25.
- We thank you for your partnership and the valuable resources you bring to the DoD!!



# Department of Defense

## DoD Representatives:

Liz Galli-Noble, Program Director, Legacy Resource Management Program, (OASD(EI&E)/ODASD(E&ER))  
Kim O'Connor, Navy, Conservation Program Manager, Envir Readiness Division, US Pacific Fleet  
Derrick Golla, Contractor, BAH

## Role of DoD in CESU

- 2000 – DoD became Federal agency partner in CESU Network
- Currently member of all 17 CESUs
- Federal partner in Californian CESU
- National CESU Network Council

## Prelim #s (*USACE only*) for CESU projects funded by DoD in FY2023:

- All 17 CESUs: 200 projects, \$133 million; 175 students
- Californian CESU: 58 projects, \$12.4 million
- **FY2023 DoD projects in Californian CESU:**
  - TES; envir monitoring research; corral reefs rehab; invasive sps studies; fire restoration; avian, seal, whale, bats, W. pond turtle surveys; riparian restoration; pollinator investigation; cultural resources mgt; botany mgt program.

## Major Accomplishment – Removal 5 SCI federally-listed TES

Vast majority of projects done through CESU!



## Priority Area Investments:

- Improving management and conservation of biodiversity, particularly DoD “mission priority species”
- Improving consultation and coordination with Indian Tribal Governments, Tribal Nations and Native Hawaiian Organizations, and inclusion of Indigenous Knowledge in management programs
- Improving management of cultural resources
- Improving techniques and approaches for resilient lands and ecosystem management
- Improving wildland fire management and risk reduction.



San Clemente Bell's sparrow

## Cross Cutting Priority Investments:

- Readiness and range sustainment
- Climate adaptation, mitigation, and resilience
- Incorporating new or emerging technologies
- Improving data and information management
- Regulatory and management efficiencies.



2022



Endangered and sensitive species

Climate change

Desert Restoration

Coastal Ecology

FY2022 \$1,376,463 with CA-CESU Partners



CSU Cal Poly Humboldt	<b>Northern Elephant Seal</b> Monitoring at the King Range National Conservation Area
CSU Cal Poly Humboldt	Impact of <b>Larval Newt Predation on California Red-Legged Frogs</b>
UC Santa Barbara	<b>Endangered Species Prey Items</b>
UC Davis	<b>DNA Metabarcoding Tools of the Endangered Blunt-nosed Leopard Lizard</b>
UC Davis	Size-Dependent Survival and <b>Impact of Ravens on Head-Started Desert Tortoises</b>
UC Davis	Genetic Diversity Study of Rare and <b>Common Flannelbush</b> in the Sierra Foothills
CSU Monterey Bay	Ensuring <b>Native Plant Success</b> and Future Conservation Leaders
UC Davis	Restoration of Desert Wetlands to Support a Source Population of Endangered <b>Amargosa Voles</b>
California Botanical Garden (Rancho Santa Ana Botanical Garden)	Taxonomic Study of <b>Zeltnera namophila</b> (Gentianaceae) and its Closest Relatives
CSU Cal Poly Humboldt	Student Opportunities to Support <b>Native Seed Collection</b> and Habitat Restoration in Northern California

California Botanical Garden  
(Rancho Santa Ana Botanical  
Garden)

**Seed Banking** Threatened, Endangered, and Sensitive Species in the BLM California Desert District

2022

CSU Monterey Bay

Return of the Natives and Graduate Student Assistants' Help to **Restore Fort Ord** National Monument

CSU Cal Poly Humboldt

Management of an **Invasive Fish Species in the Eel River** to Recover Federally Listed Salmon and Steelhead

CSU Cal Poly Humboldt

**Elephant Seal and Harbor Seal Population** Baseline and Disturbance Monitoring in King Range National Conservation Area

Santa Barbara Botanical Garden

Monitoring California **Jewelflower** Demography in the Context of Pollinator Networks

Santa Barbara Botanical Garden

Conservation **Seed Banking** for BLM Special Status Plant Species in the Central California District

CSU Cal Poly San Luis Obispo

An Integrated Population Model for **Giant Kangaroo Rats**

UC Davis

**Current Rangeland Status and Habitat Affiliations of the Blunt-Nosed Leopard Lizard**

CSU Cal Poly San Luis Obispo

Projecting impacts of climate change on **blunt-nosed leopard lizards**

CSU Fresno

Repatriation and Preservation of **Blunt-Nosed Leopard Lizards** (*Gambelia sila*) in the Panoche Hills, CA

UC Merced

Reproduction of **Blunt-Nosed Leopard Lizards** in Wild and Captively Managed Populations

## CA-CESU Goals for 2024

- Federal CESU representatives provide more information to make project administration and processes clearer for non-federal partners.
- Highlighting in internal and external communications when projects are funded by the CA-CESU.
- More website engagement outside of NPS/UCB.
- Federal representatives communicate on potential collaborations.
- *Other Ideas?*





# Thank You!

## Keep in Touch!

**Dennis Baldocchi – Director, California CESU**  
**Benjamin Becker – NPS CESU Science Advisor**  
**Nalui Garcia – Financial Analyst**  
**Thomas E. Fish - National Coordinator CESU**