

# NEWSLETTER for the Society for Freshwater Science California Chapter & California Aquatic Bioassessment Workgroup

## Recap on the 7th Annual Cal-SFS Meeting & 26th Annual CABW Meeting

The 7th Annual California Chapter of the Society of Freshwater Science (Cal-SFS) and 26th annual California Aquatic Bioassessment Working Group Meeting (CABW) meeting was held at UC Davis on October 23rd & 24th, 2019. The meeting was a complementary mix of technical research, policy, and application, and covered a unique and relevant mix of management and experimental topics which sets the stage for the next decade of aquatic science in California. Sessions included dry stream assessments (check out a project highlight on pg.3), fire impacts on aquatic resources, the use of bioassessment data in supporting management decisions, and flow ecology tools for managing future flows. A competitive student poster session closed out the first day (highlights on pg 4.) and the meeting ended with an early career session and Q&A panel (pg.5)! About 150 people attended each day and about \$2250 was generated for the Cal-SFS student travel award fund from the Sudwerks social mixer and private donations. Thanks to all those who attended!

If you would like to help Cal-SFS meet their goal of sending 4 students and 2 early careers to the first international SFS Meeting in Brisbane, Australia (2021), you can by sending a check to our treasurer John Olson (contact email for address joolson@csumb.edu) or you can donate directly via Venmo (@Calsfs-John-Olson).



### **The end of an Era — Jim Harrington retires!**

Jim has graciously coordinated the CABW for its 26 years. But don't worry! Jim is moving on to margaritas and beaches fulltime with his wife at their home in Panama, Central America. Jim said he is happy to hand over the CABW reins and he's excited for this next phase of his life.

The bioassessment community has benefitted greatly from his knowledge and commitment, but as with all good things, they come to an end. We will miss Jim's teachings, his commitment, and of course, his sense of humor.

As he embarks on a new journey, we hope he is proud of the work he has done and the difference he has made. From all of us, we thank you Jim, and we wish you a farewell and a happy retirement, it is well deserved.

*(Left) Jim Harrington, retired from CDFW, served the CABW and Bioassessment college for many, many, many years and set a high standard for all CABW meetings and activities.*



CABW/SFS Thanks our 2019 Sponsors and Supporters for their generosity!

Sponsored by:



Supporters:



Thanks to everyone who helped make this happen!

**Did you miss any of Meeting?**

Don't worry, thanks to the water boards, all the presentations are available online!

You can access them at the

California SWAMP College of Bioassessment CABW webpage by clicking the link here or going to this site:

[https://www.waterboards.ca.gov/water\\_issues/programs/swamp/bioassessment/training.html#cabw](https://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/training.html#cabw)

**SAVE the Date!**

The next CABW / Cal-SFS Annual Meeting will be held October Tue 13th & Wed 14th, 2020!!

**Have an idea for a future workshop? We want to hear it!**

Send an email with a topic and suggested presenters to:

Email: [cal.chap.sfs@gmail.com](mailto:cal.chap.sfs@gmail.com)



**Thank you to our 2019 CABW / CAL-SFS Event Sponsors!**

Without the wonderful support received from these organizations, we would not have been able to put on such a great event! Also a big thanks to the coordinating team at the California Water Boards, Southern California Coastal Water Research Project (SCCWRP), and CDFW including, but not limited to: Shuka Rastegarpour, Ali Dunn, Toni Marshall, Anna Holder, Raphael Mazor, Suzanna Theroux, and Jessie Maxfield, Pete Ode, and the entire Cal-SFS planning team including Nick Macias, John Olsen, Matt Cover, Christine Parisek, and Angela De Palma-Dow.

**Join Cal-SFS Today!!**

Being a chapter member has many benefits like:

- Chapters allow for the option of attending smaller, more focused meetings that better serve regional needs.
- Chapters provide affordable options for students to attend a professional meeting, facilitating networking and professional growth.
- SFS members with various expertise can assist chapters with specific needs and provide mentoring and information exchange.
- Regional leadership becomes a stepping stone to society leadership.
- Direct input on local events and outreach opportunities.
- And many more benefits!

For more info and to become a member:

<http://www.freshwater-science.org/chapters/california-chapter.cfm>

Or email Cal-SFS president Nick Macias at [themacrolatino@gmail.com](mailto:themacrolatino@gmail.com)

**Join SFS and ASLO in Madison, WI in June 2020!**



**Important Dates!**

Call for Abstracts Posted—January 2020  
 Abstract Submission Closes — February 2020  
 Authors Notified of Acceptance—March 2020  
 Scientific Program Posted - April 2020

# CABW / Cal-SFS Project & Presentation Highlight!

## Bioassessment of ephemeral streams and intermittent rivers affected by oil spills.

Savannah Peña and John Olson, Cal State Monterey Bay & Raphael Mazor, Southern California Coastal Water Research Project

Dry stream ecosystems are an important component of freshwater systems. We have a limited understanding of how biota respond to severe alterations like those associated with resource extraction. Better knowledge of biotic responses to oil extraction can lead to damage cost calculation in the future.

With support from the California Department of Fish and Wildlife Office of Spill Prevention and Response, we examined how bryophyte and arthropod assemblages responded across a gradient of increasing amounts of upstream oil and gas extraction along with physical and chemical measurements of ephemeral streams.

We sampled 13 dry stream sites near Bakersfield, CA between June and July 2018. We collected arthropod specimens within 160m dry stream bed reaches using ramped pitfall traps and a vegetation beating method. We also sampled the bryophyte community within the streambed and the riparian zones. We quantified the amount of stress within the sites' watershed using oil field cover area, oil well counts, sediment size counts, and hydrocarbon soil concentrations and related this stress to potential biological end points possibly sensitive to alteration (Figure 1).

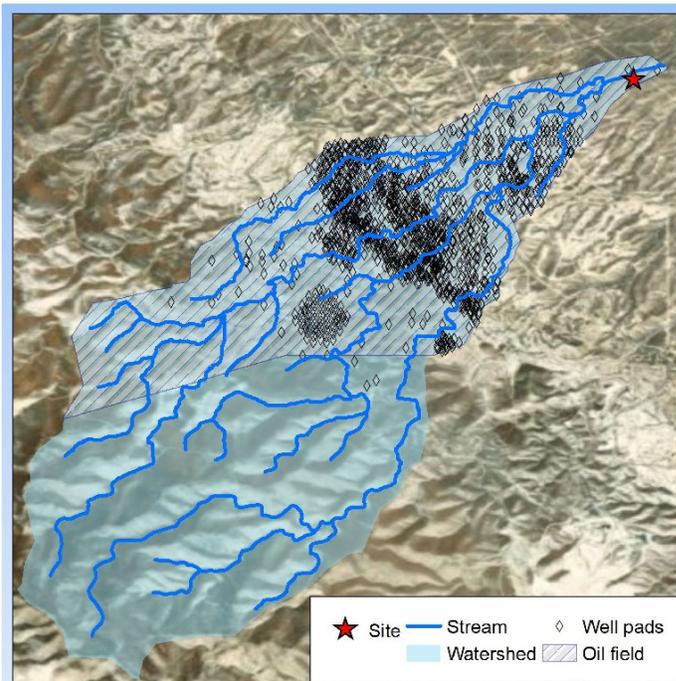
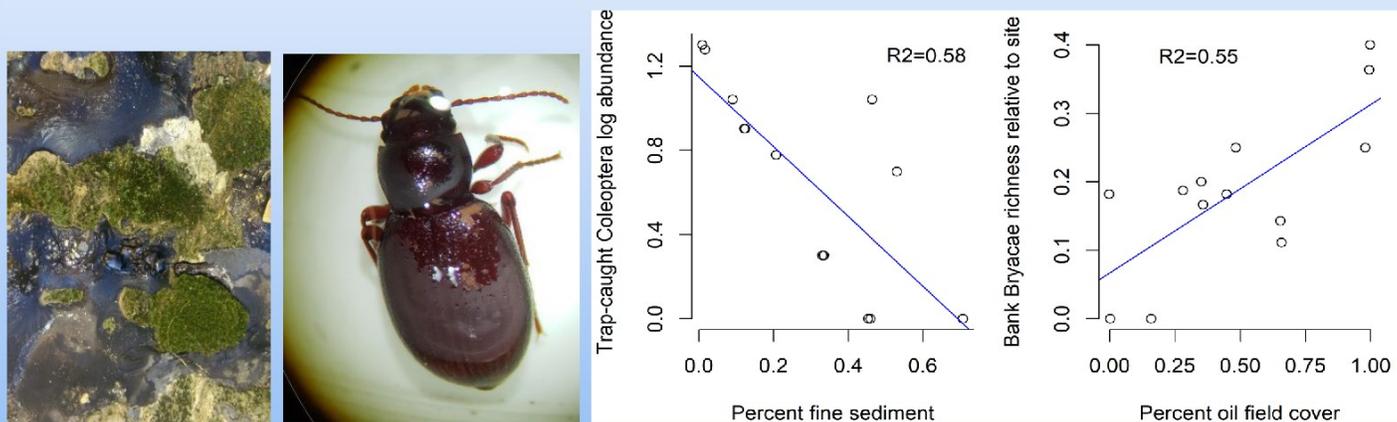


Figure 1. Sampled site with watershed and oil field stressors.

We found that the abundance of bryophytes increased with increasing extraction stress, while richness of some ground dwelling arthropods decreased for stressed sites. Many stressors were correlated with each other, but increasing fine sediment appeared to be the strongest indicator of increasing stress. We observed a decrease in beetle abundance and richness with an increase in fine sediment (Figure 2).

This information gives us a deeper understanding for the role of dry streams within the freshwater network and how these ecosystems respond to stress. These results also support the development of dry stream bioassessment tools like these that resource agencies can use for monitoring and assessing freshwater ecosystems when they are dry.

Figure 2. (from left to right) Bryophytes thriving in oil, Tenebrionidae spp., Trap-caught beetle log abundance compared to percent fine sediment, Bank Bryaceae richness relative to site compared to percent oil field cover.



# Student Spotlight: Posters were the winners!

## Master's Student Poster Award Winner

**Name:** Rachelle Tallman (rtallman@ucdavis.edu)  
**Affiliation:** Rypel Lab, UC Davis  
**Poster Title:** Does "wilding" juvenile Chinook salmon on agricultural floodplains boost survivorship in California's Central Valley? **Summary:** Hi there! My research focuses on rearing juvenile Chinook salmon on rice fields in the Yolo Bypass. I'm hoping to determine out-migration survival of salmon reared under different habitat conditions. I hope to use this data to create an agricultural practice standard which would inform local farmers of the best practices to implement to benefit native fish species. This was my first Cal-SFS meeting and I had a great time meeting everyone! Thank you for creating an inviting and open atmosphere for us to share our research!



## Undergraduate Student Poster Award Winner

**Name:** Paco Villegas (fvillegas@csumb.edu) **Affiliation:** CSU Monterey Bay  
**Poster Title:** The effects of removal of an invasive grass *Arundo donax* on river ecosystems  
**Summary:** This year's Cal-SFS was my first time attending a freshwater conference. When I first arrived, I was excited to be there but also a little nervous to present my poster. Those initial nerves quickly disappeared as soon as I started to meet new people and stir up conversations. I learned a lot from the variety of topics covered that day, and all the presenters did an amazing job. It was refreshing to be in a place where so many ideas regarding river restoration and conservation were being shared and discussed. When it was time to present my poster, I wasn't nervous anymore. Instead, I felt confident and motivated to present my research to the many people who approached me with smiling faces. One of the most memorable parts of my experience at Cal-SFS was being able to feel everyone's enthusiasm for freshwater science; the enthusiasm was contagious.



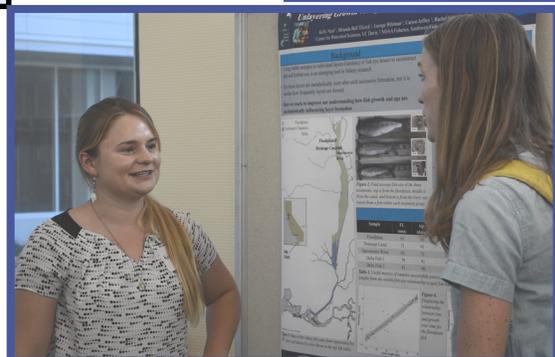
## PhD Student Poster Award Winner

**Name:** Karen Atkins (ksatkins@ucdavis.edu) **Affiliation:** UC Davis Tahoe Environmental Research Center  
**Poster Title:** Periphyton Biomass Analysis of Lake Tahoe **Summary:** Researchers have monitored periphyton levels in Lake Tahoe, USA since 1982. Our poster at Cal-SFS analyzed spatial and temporal patterns of periphyton around the lake and examined the influence of lake level fluctuations on periphyton levels. Our research goal was to employ statistical methods to better understand long term periphyton trends and processes. Additionally, I looked at biomass trends associated with levels of human development along shoreline. At Cal-SFS I met and received feedback from ecological statisticians, limnologists, and many others. Interfacing with other modelers has been essential to progressing my research's as these conversations help me formulate my next steps. Networking in this way increases my understanding of how the work I do can contribute to the greater scientific community. I thank the award funders for their financial support.

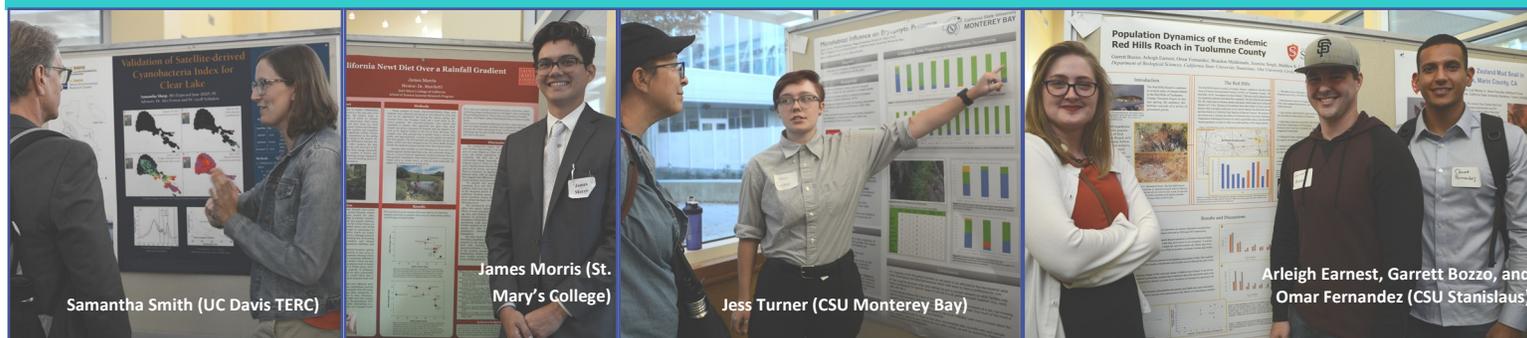


## Undergraduate Student Poster Award Winner

**Name:** Kelly Neal (kaneal@ucdavis.edu) **Affiliation:** UC Davis Center For Watershed Sciences, Davis, CA  
**Poster Title:** Eye Lense Layer Formation: Age vs Growth **Summary:** I am so grateful and honored to have received a student award from CalSFS for my poster! My poster was on the processes that influence juvenile Chinook salmon eye lense layer formation. Speaking with new individuals and now familiar faces from the national SFS meeting about my collaborative project was great to not only get the opportunity to share the work I have been focused on, but also to hear about others' perspectives on new directions to potentially take the research. Thank you to everyone who made the meeting such a wonderful experience and the meeting funders.



**Thank you to all the students who presented at the poster session and thank you to all the judges. This event was made possible by a SFS Synergistic Activities Among Committees Grant. Cal-SFS hopes to continue this event at future meetings and we encourage more students to participate.**



## California Currents..... See what Cal-SFS has been up to during 2019.

### CalSFS organized a special session at the 2019 AFS/TWS

Nick Macias, Cal-SFS president, organized a special session at the first annual joint science meeting of the American Fisheries Society and The Wildlife Society in Reno, NV September 29– October 3rd, 2019. The session, entitled *“California Soul: Multi-scale approaches to explore, assess, and restore California’s freshwater resources. A collaborative session presented in part with the Society for Freshwater Science CA Chapter.”* The session had an eclectic mix of agency and academic speakers and was well attended by persons interested in the sustainable future of CA freshwater resources.

*Below Emerson Kanawi (left) presents comparisons of eDNA and traditional monitoring approaches to assess abundance of Coho salmon in CA coastal streams and Kristine Taniguchi-Quan (right) presents on a coordinated approach for developing flow regulations in CA.*



### Cal-SFS and CABW bring Early Career Resources to SFS members to California and beyond!

Early Career aquatic scientists and professionals are the future of freshwater in California and the world, and yet there are little or limited financial or career development resources for freshwater folks in transition from student to professional. Thanks to a Synergistic Activities Among Committees (SAAC) Grant from the Parent SFS, and collaboration from the Early Career Development Committee at SFS, at this years CABW meeting, a Early Career Session focused session was followed by an Early Career Q&A Panel. The session and panel were recorded and are available on the SFS Early Career webpage at: <https://freshwater-science.org/my-sfs/early-career>. The panel was diverse in nature and discipline, with representation from two different state agencies (CA Department of Water Resources and California Waterboards), a recent graduate from St. Mary’s College, a non-profit (LA Waterkeepers), and a post-doc researcher from UC Berkeley.

The session was moderated by two early career scientists, Cal-SFS member Angela De Palma-Dow and current Cal-SFS President, Nick Macias.

Are you Early Career? Check out the SFS Early Career Committee at the website: <https://freshwater-science.org/my-sfs/early-career>



*Panel participants included, from left, Esther Tracy, James Morris, Melissa von Mayrhauser, Guillermo de Mendoza, Shuka Rastegarpour, and moderators Nick Macias and Angela De Palma-Dow. A Big thanks to our panelists!*

## Do you like social media? You could be a communications ambassador for Cal-SFS!!

Help Cal-SFS share and communicate their message beyond the stream banks right from your own phone or laptop!

We are currently recruiting anyone interested in tweeting, instagramming, facebooking, or writing and designing newsletters, blogs, and other outreach and marketing materials. If this seems like something you, or someone you know, would like to do please contact Angela at [Adepalmadow@gmail.com](mailto:Adepalmadow@gmail.com) or Nick at [themacrolatino@gmail.com](mailto:themacrolatino@gmail.com).

# SFS-ASLO Joint Aquatic Science Meeting: Madison, WI June 7-12, 2020

*Sustaining Aquatic Ecosystems Under Global Change*

[sfsannualmeeting.org](http://sfsannualmeeting.org)



## California Chapter Society for Freshwater Science —Student Travel Grants for the Joint Science Meeting June 2020 Application Deadline: February 14, 2020

The California Chapter of SFS (Cal-SFS) has made two awards (\$500) available to support the travel expenses of undergraduate or graduate students presenting at the 2020 SFS annual meeting in Madison, WI. Awarded funds may be used to cover the costs of transportation, lodging, and/or registration. If the student is not yet a member of SFS and the California Chapter, a portion of the travel grant should be used to cover the cost of membership.

Cal-SFS is supporting student travel to the 2020 SFS meeting in Madison, WI in order to provide funding to students who otherwise would not be able to attend, and for whom not attending the meeting would be detrimental to their academic or professional development. Thus, students who have funding available through other sources, such as research grants or university awards, should not apply. Award funding will be given directly to students, and can be used for any expenses related to travel to the meeting.

### Award recipients are expected to:

1. Attend the entire SFS meeting, including any Cal-SFS events, and provide any needed assistance, to chapter officers.
2. Submit an abstract by the required deadline in order to present their research at the 2020 meeting, in either an oral or poster format.
3. At the end of the year, submit a short descriptive article on your experience for the Cal-SFS newsletter.
4. Maintain membership in the larger international SFS society and Cal-SFS in 2020 and 2021.
5. Attend and present your research at the Fall 2020 Cal-SFS Chapter meeting, usually in October.
6. Recipients of awards are expected to post on one of the Cal-SFS social media platforms (Twitter, FB, or Instagram) while at the meeting.

### To Apply:

Please send a single electronic file (.doc, .docx, .pdf, or .txt) as an attachment in an email to Matt Cover ([mcover@csustan.edu](mailto:mcover@csustan.edu)) by **February 14th, 2020**. Please include the following information in your application:

1. Full contact information (name, address, phone, email)
2. Student status (college or university, degree program, years in program, expected graduation date)
3. A brief statement of interest in the SFS meeting ( < 250 words). Please describe:
  - A. How your academic and career goals will be advanced by attending the SFS meeting
  - B. Other scientific conferences where you have attended or presented
  - C. Evidence of financial need; other existing or potential sources of funding
  - D. Evidence of past or planned education or outreach activities that expand access and involvement in the field of freshwater science in California
4. A copy of your submitted abstract, OR a draft copy of the abstract you plan to submit by the February deadline, and the name of the session you wish to present in.

Applications shall be judged on academic and career promise, demonstrated need, and the potential for championing freshwater science in California. A committee of Cal-SFS officers and members who are unaffiliated with any applicant shall review submissions and select a recipient by February 29th, 2020. Award monies will be delivered, in the form of a check sent directly to the awardees, in March.