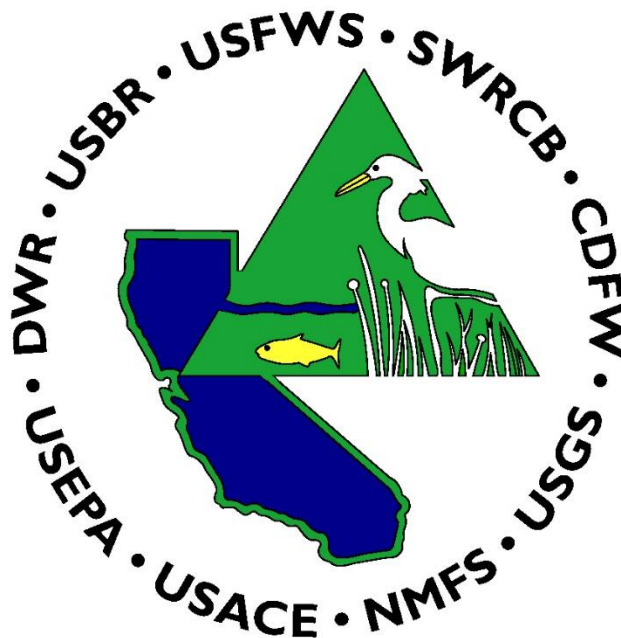


INTERAGENCY ECOLOGICAL PROGRAM 2022 ANNUAL WORKSHOP

MARCH 22-24, 2022



Interagency Ecological Program

COOPERATIVE ECOLOGICAL
INVESTIGATIONS SINCE 1970

2022 Workshop Planning Committee Co-Chairpersons

Steven Culberson, IEP Lead Scientist and Christine Joab, IEP Program Support Team

2022 Workshop Planning Committee

Adam Nanninga, U.S. Fish and Wildlife Service
Arnold Ammann, National Oceanographic Atmospheric Administration
Brian Thompson, U.S. Environmental Protection Agency
Christina Burdi, California Department of Fish and Wildlife
Daphne Gille, California Department of Water Resources
Emily Ryznar, Delta Science Program & California Sea Grant
Heidi Williams, Valley Water
Jenna Rinde, California Department of Fish and Wildlife
Jereme Gaeta, California Department of Fish and Wildlife, IEP
Lynn Takata, Delta Stewardship Council
Michelle Avila, California Department of Fish and Wildlife
Miles Daniels, National Oceanographic Atmospheric Administration
Morgan Gilbert, U.S. Fish and Wildlife Service
Rosemary Hartman, California Department of Water Resources
Sam Bashevkin, Delta Stewardship Council/Delta Science Program
Shruti Khanna, California Department of Fish and Wildlife, IEP
Stephanie Fong, California Department of Fish and Wildlife, IEP
Ted Flynn, California Department of Water Resources
Tyler Pilger, FishBio, Inc.

IEP Mission Statement

The Interagency Ecological Program's mission is to provide and integrate relevant and timely ecological information for management of the Bay-Delta ecosystem and the water that flows through it. This is accomplished through collaborative and scientifically sound monitoring, research, modeling, and synthesis efforts for various aspects of the aquatic ecosystem. The IEP addresses high priority management and policy science needs to meet the purposes and fulfill responsibilities under State and Federal regulatory requirements. The IEP relies upon multidisciplinary teams of agency, academic, non-governmental agencies, and other scientists to accomplish its mission.

Interagency Ecological Program

Science, Synthesis, Service

2022 Theme Statement - Early Career Scientists

At the 2022 IEP Workshop we are celebrating the participation of our newer career scientists, managers, and colleagues. Please join us in supporting our Workshop Theme by extending a welcome to those newer in our midst, those who are just starting to chart their way within IEP, and to those within the broader San Francisco Estuary science and management community whom you may not recognize. Thanks for your interest in our community and we hope you'll find a place within IEP for many years to come!

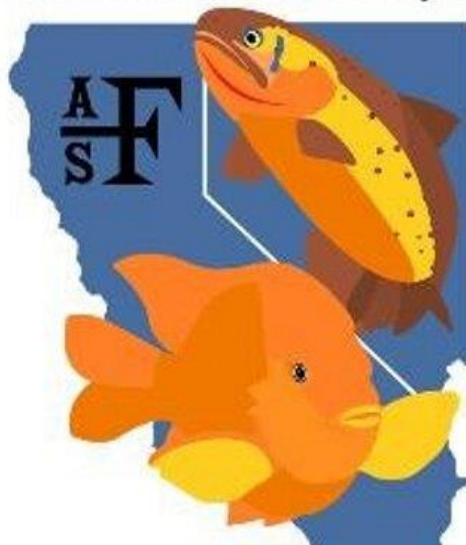
IEP Community Statement

The Interagency Ecological Program celebrates equity, diversity, and inclusiveness. We embrace these pillars of excellence as crucial to healthy people and healthy communities. We welcome collaborative scientists of all affiliations and ask that you contribute within a spirit of supportive collegiality.

Acknowledgement to Cal-Neva Chapter of the American Fisheries Society

The IEP Management Team and the IEP Workshop Planning Committee once again extend a wholehearted thank you to the Cal-Neva Chapter of the American Fisheries Society for its assistance administering this year's Annual Workshop. Members of the Executive Committee generously dedicated their valuable spare time and energy to make the 2022 Workshop possible. Thank you, Cal-Neva AFS!

California-Nevada Chapter



To Our Attendees

Welcome and thank you for your interest in attending the 2022 IEP Annual Workshop! Again, this year, we find ourselves in a position where we are unable to hold the workshop in person. Instead of canceling the workshop, we are hosting it in a virtual format.

Zoom Platform

This year's workshop will be hosted as a Zoom Webinar and the evening Poster Session will be a Zoom Meeting. If you are unfamiliar with [how to join a Zoom Webinar](#) or [how to join a Zoom Meeting and self-select a breakout room](#), please take time to familiarize yourself prior to the workshop starting. Also, make sure you have the [Zoom Client for Meetings](#) downloaded (preferably the most recent version 5.9.7) before joining the workshop. This will allow you to connect to the platform without delay.

Workshop Links

Each day of the workshop will have its own Zoom link, including the evening poster session. The third day of the workshop has concurrent sessions running, so there are two Zoom Webinar links for that day (Thursday, March 24). Check the program to see which talks are covered under which link.

The Mentoring Luncheon (March 23) will be hosted using Zoom Meeting and will use breakout rooms for registered guests to meet and mingle with mentors. The Mentoring Luncheon is only for those who register, and the link will be sent directly to those registrants.

The evening Poster Session will be hosted on March 22 and 23 using Zoom Meeting. Presenting poster authors and their collaborators will be inside pre-designated breakout rooms labeled using the 7 poster topics. All are welcome to participate and freely mingle throughout the rooms to chat with poster authors.

The Project Work Team Chairs Luncheon (March 24) will be held using MS Teams. This luncheon is only for the Project Work Team Chairs.

All the links for the general program of the workshop are shown in the program under the section titled "Zoom Links for the Workshop Sessions" (page 6) and are included within the program at the beginning of each day's events.

Workshop Format

Presenters have been given the choice to either present live or to prerecord their presentation. So, you may see a mixture of the two throughout the workshop. Most of the presentation slots are 20 minutes in length, which includes a 15-minute presentation, 2-3 minutes for questions and then a transition to the next speaker.

To minimize disturbances, all participants will be muted and not permitted to share their camera. If you have a question for the speaker, you may type it in the Q&A box or press the "raise your hand" button. At the end of the presentation, the moderator will select questions

from both groups for the presenter to answer. If an audience member is selected, they will be invited to unmute and ask their question. Presenters will not use the chat feature to respond to unanswered questions as this detracts people's attention away from the next speaker. If you want to follow up with a specific presenter after the workshop, make sure to write down their contact information. All presenters will be provided the questions submitted via the Q&A box after the workshop.

Workshop Recording

The general workshop sessions will be recorded and posted to the IEP YouTube channel for viewing until June 30, 2022. The recordings will only include those presentations whose authors granted us permission to record and share on the IEP YouTube channel.

Best Early Career Poster and People's Choice Best Presentation Ballots

The workshop planning committee wants to acknowledge high quality contributions to the 2022 IEP workshop. This year we will hold separate votes for a 'Best Early Career Poster' for those early career professionals who submit posters, and a 'People's Choice Presentation' for the best oral presentation, poster, or ArcGIS StoryMap from among all presenters at the Workshop.

We are asking all attendees to take note of presentations and posters that grab your attention, either because of a fascinating topic, high quality presentation skills, or both. All presentations and posters will be open for consideration. We want to give all attendees the opportunity to provide feedback on what they thought were the best contributions this year.

A link for an online ballot will be sent prior to and during the workshop. It will also be available on the [IEP Annual Workshop](#) page. Attendees can use the ballot form to suggest their top 3 presentations and top 3 posters (including 'Best Early Career' poster). Voting will be open until 5:00 pm Friday, March 25th. Winners will be announced on Monday, March 28 and recognized on the IEP website.

Next Year's Workshop

Do you have an idea for a future workshop session topic or a training class? Are you interested in volunteering to help organize the 2023 IEP Annual Workshop? Send your name and desire to participate to [Christine Joab](#) or [Steve Culberson](#). We'll be holding our first planning meeting in the summer (August/September 2022).

Did you enjoy the 2022 IEP Annual Workshop? We are always open to receiving constructive feedback on the workshop. We recognize that there are limitations on what we can do, but we'd like to hear from you on what you liked and what you'd like to see more of in the workshop. Send your feedback to jep@wildlife.ca.gov.

Thanks for your interest and participation. We hope you enjoy the workshop!

Zoom Links for the Workshop Sessions

Tuesday, March 22

- **Day 1 of Workshop for Sessions 1 through 4**
[2022 IEP Workshop Sessions 1-4](#)
Phone (USA): 866-390-1828 | Conference Code: 663759
- **Evening Poster Session**
[IEP Workshop Poster Session](#)
Phone (USA): 888-278-0296 | Conference Code: 481846

Wednesday, March 23

- **Day 2 of Workshop for Sessions 5 through 8**
[2022 IEP Workshop Sessions 5-8](#)
Phone (USA): 866-390-1828 | Conference Code: 663759
- **Mentoring Luncheon**
Registered participants only (Zoom Link provided to registrants)
- **Evening Poster Session**
[IEP Workshop Poster Session](#)
Phone (USA): 888-278-0296 | Conference Code: 481846

Thursday, March 24

- **Day 3 of Workshop for Sessions 9-12**
[2022 IEP Workshop Sessions 9-12](#)
Phone (USA): 866-390-1828 | Conference Code: 663759
- **Day 3 of Workshop for Sessions 13-16**
[2022 IEP Workshop Sessions 13-16](#)
Phone (USA): 888-363-4734 | Conference Code: 506989
- **Project Work Team Luncheon**
For PWT Chairs only (MS Teams link provided to PWT Chairs)

Tuesday, March 22

ZOOM LINK: [2022 IEP Workshop Sessions 1-4](#)

SESSION I – WELCOME AND INTRODUCTION

Moderator: Stephanie Fong, California Department of Fish and Wildlife, IEP

- | | |
|-----------------|---|
| 8:30am-8:35am | Workshop Opens |
| 8:30am-8:50am | Workshop Welcome and Outlook
Stephanie Fong, California Department of Fish and Wildlife, IEP |
| 8:50am-9:10am | A Year of IEP Science in Review
Steven Culberson, Interagency Ecological Program |
| 9:10am-9:40am | Strength in Numbers: <i>advancing estuarine ecology through data synthesis and collaboration</i>
Denise Colombano, University of California, Berkeley |
| 9:40am-10:10am | How to be IEP OPS: <i>taking Opportunity, building Purpose, and standing on Shoulders</i>
Lauren Damon, California Department of Fish and Wildlife |
| 10:10am-10:20am | 10-MINUTE BREAK |

**SESSION II – THE DELTA SCIENCE FELLOWS PROGRAM:
Research Highlights from the Class of 2020**

Moderator: Lynn Takata, Delta Science Program/Delta Stewardship Council

- | | |
|-----------------|--|
| 10:20am-10:40am | The Delta Science Fellows Program: <i>Connecting Graduate Students, Postdocs and the Delta Science Community</i>
Lauren Hastings, Delta Science Program, Delta Stewardship Council |
| 10:40am-10:52am | Whole System Metabolism and Nitrogen Cycling in the Sacramento River
Martin P. Volaric, Stanford University & San Francisco Estuary Institute |
| 10:52am-11:04am | Assessing the Relative Risk of Fish Predation Within and Across Tidal Wetland Complexes in the Sacramento-San Joaquin Delta
David Ayers, University of California, Davis |
| 11:04am-11:16am | Shining a Spotlight on Delta Particles
Madison Mathers, University of California, Davis |

- 11:16am-11:28am Joining Social and Ecological Approaches for Invasive Species Management and Wetland Restoration in Suisun Marsh
Richelle Tanner, Environmental Science & Policy Program, Chapman University
- 11:28am-11:40am Portfolio Effects Stabilize the Estuarine Fish Community Across Four Decades
Denise Colombano, University of California, Berkeley
- 11:40am-12:00pm Moderated Panel Q&A
Lynn Takata, Delta Science Program, Delta Stewardship Council

LUNCH BREAK

12:00pm-1:00pm **ONE HOUR LUNCH: ON YOUR OWN**

SESSION III – DROUGHT IMPACTS

Moderator: Miles Daniels, National Oceanic Atmospheric Administration

-
- 1:00pm-1:20pm Managing Water Stored for the Environment during Drought
Sarah Null, Utah State University
- 1:20pm-1:40pm A Hard Rain's [Not] A-gonna Fall: a *synthesis of drought impacts on the Delt ecosystem*
Rosemary Hartman, California Department of Water Resources
- 1:40pm-2:00pm The Effect of Hydrometeorological Forecast Errors on Temperature Management Projections for the Sacramento River: A 2021 Drought Case Study
James Gilbert, University of California, Santa Cruz, NOAA Affiliate
- 2:00pm-2:20pm Influence of Salinity on Pyrethroid Toxicity: an analysis of neurotoxicity and osmoregulation in a model estuarine fish (*Menidia beryllina*)
Susanne Brander, Oregon State University
- 2:20pm-2:40pm Years in their Ears: *what can fish earbones tell us about the success of vulnerable salmon populations in an increasingly volatile and warming climate?*
Flora Cordoleani, National Oceanic Atmospheric Administration
- 2:40pm-2:50pm **10-MINUTE BREAK**

SESSION IV – LIGHTNING TALKS AND POETRY SLAM

Moderators: Morgan Gilbert, U.S. Fish and Wildlife Service
Steven Culberson, Interagency Ecological Program

- 2:50pm-4:05pm Lightning Talks (speakers listed below)
Miles Daniels, National Oceanographic Atmospheric Administration
Allison Brady, California Department of Water Resources
Julie Thayer, Farallon Institute
Dulcinea Avouris, University of California, Merced
Sienna White, San Francisco Estuary Institute
Ensieh Habibi, University of California, Davis
Mallory Bedwell, California Department of Water Resources
Jason Hassrick, ICF
Catarina Pien, California Department of Water Resources
Calvin Lee, ICF
Rebecca Stanton, Office of Environmental Health Hazard Assessment
Nina Pak, UC Berkeley
Nicol Parker, UC Santa Barbara
Timothy Mussen, RegionalSan
Christian Denney, UC Davis
Caitlyn Elaine (Elle) Patullo, UC Davis
- 4:05pm-4:30pm Poetry Slam Guests & Open Mic (anybody welcome to participate)
- 4:30pm-4:45pm **15-MINUTE BREAK**

EVENING POSTER Session

Moderators: Emily Ryznar, Delta Science Program & California Sea Grant
Michelle Avila, California Department of Fish and Wildlife

ZOOM Link: [IEP Workshop Poster Session](#)

4:45pm-5:45pm **Poster Session Q&A with Poster Authors**

Wednesday, March 23

ZOOM LINK: [2022 IEP Workshop Sessions 5-8](#)

SESSION V – BASIC STATISTICS IN R

Moderator: Jereme W. Gaeta, California Department of Fish and Wildlife, IEP

- 8:30am-8:50am Overview: *workshop plan, a general modeling approach, and a framework for univariate analyses*
Jereme W. Gaeta, California Department of Fish and Wildlife, IEP
- 8:50am-9:10am Data Exploration: *outliers, collinearity and correlations, zero-inflation, and distributions*
Catarina Pien, California Department of Water Resources
- 9:10am-9:30am Categorical Predictors: *ANOVA and Kruskal-Wallis with multiple comparison tests*
Emily Ryznar, Delta Science Program & California Sea Grant
- 9:30am-9:50am Categorical Response: *classification trees*
Trinh Nguyen, California Department of Fish and Wildlife, IEP
- 9:50am-10:10am Multivariate Statistics: *an introduction to ordination*
Timothy Malinich, California Department of Fish and Wildlife
- 10:10am-10:20am **10-MINUTE BREAK**

SESSION VI – REGRESSION IN R

Moderator: Jereme W. Gaeta, California Department of Fish and Wildlife, IEP

- 10:20am-10:40am Continuous Response and Predictor: *simple linear regression*
Braden Elliot, State Water Resources Control Board
- 10:40am-11:00am Two Category, Binary, or Proportional Response: *logistic regression*
Tyler Pilger, FishBio, Inc.
- 11:00am-11:20am Discrete Catch Data: *negative binomial or Poisson regression*
Rosemary Hartman, California Department of Water Resources
- 11:20am-11:40am Zero-inflated: *negative binomial or Poisson regression*
Rosemary Hartman, California Department of Water Resources

11:40am-12:00pm Non-linear Data: *general additive models*
Jereme W. Gaeta, California Department of Fish and Wildlife, IEP

LUNCH BREAK

12:00pm-1:00pm **Mentoring Lunch** (registered guests only); All others: lunch on your own
Zoom link provided to registered participants
Mentors: Geoff Steinhart (USFWS), Gonzalo Castillo (USFWS), Kristi Arend (USBR), Melinda Baerwald (DWR), Rosemary Hartman (DWR), Steve Culberson (IEP), Vanessa Tobias (USFWS)

SESSION VII – ADVANCED ANALYSES IN R

Moderator: Jereme W. Gaeta, California Department of Fish and Wildlife, IEP

1:00pm-1:20pm Mixed Effects/Hierarchical Models Part I: *theory*
Jereme W. Gaeta, California Department of Fish and Wildlife, IEP

1:20pm-1:40pm Mixed Effects/Hierarchical Models Part II: *analyses*
Jereme W. Gaeta, California Department of Fish and Wildlife, IEP

1:40pm-2:00pm An Introduction to Regression in a Bayesian Framework
Sam Bashevkin, Delta Science Program, Delta Stewardship Council

2:00pm-2:40pm Open Question & Answer with all Presenters
Jereme W. Gaeta, IEP & California Department of Fish and Wildlife, IEP
Sam Bashevkin, Delta Science Program, Delta Stewardship Council
Catarina Pien, California Department of Water Resources
Emily Ryznar, Delta Science Program & California Sea Grant
Trinh Nguyen, IEP & California Department of Fish and Wildlife, IEP
Timothy Malinich, California Department of Fish and Wildlife
Braden Elliot, State Water Resources Control Board
Tyler Pilger, FishBio, Inc.
Mike Beakes, United States Bureau of Reclamation
Rosemary Hartman, California Department of Water Resources

2:40pm-2:50pm **10-MINUTE BREAK**

SESSION VIII – CAREERS IN STATE & FEDERAL GOVERNMENT

Moderator: Stephanie Fong, California Department of Fish and Wildlife, IEP

2:50pm-4:30pm Panel Forum and Moderated Discussion with Representatives from IEP Member Agencies
Mike Beakes, U.S Bureau of Reclamation
Henry DeBey, Delta Stewardship Council
Erin Foresman, State Water Resources Control Board
Karen Gehrts, California Department of Water Resources
Dan Kratville, California Department of Fish and Wildlife
Cathy Marcinkevage, National Marine Fisheries Service
Jeff McLain, U.S. Fish and Wildlife Service
Anke Mueller-Solger, U.S. Geological Survey
Brian Thompson, U.S. Environmental Protection Agency

4:30pm-4:45pm **15-MINUTE BREAK**

EVENING POSTER RECEPTION

Moderators: Emily Ryznar, Delta Science Program & California Sea Grant
Michelle Avila, California Department of Fish and Wildlife

ZOOM Link: [IEP Workshop Poster Session Zoom Link](#)

4:45pm-5:45pm **Poster Session Q&A with Poster Authors**

Thursday, March 24
CONCURRENT SESSION

ZOOM LINK: [2022 IEP Workshop Sessions 9-12](#)

SESSION IX – EXPERIMENTAL RELEASE OF DELTA SMELT

Moderators: Daphne Gille, California Department of Water Resources
Li-Ming (Lee) He, U.S. Fish and Wildlife Service

- | | |
|-----------------|---|
| 8:30am-8:50am | Delta Smelt Experimental Release and the Interagency Partnerships that Made It Possible
Kaylee Allen, U.S. Fish and Wildlife Service
Katherine Sun, U.S. Fish and Wildlife Service
Brooke Jacobs, California Department Fish and Wildlife |
| 8:50am-9:10am | From Lab to Field: <i>preliminary experiments supporting experimental release of Delta Smelt</i>
Daphne Gille, California Department of Water Resources
Nicole Kwan, California Department of Water Resources |
| 9:10am-9:30am | Leveraging Monitoring and Modeling to Assess Delta Smelt Supplementation
Evan W. Carson, U.S. Fish and Wildlife Service |
| 9:30am-9:50am | History in the Making: <i>updates on the first experimental release of captive-reared Delta Smelt</i>
Trishelle Tempel, California Department of Water Resources |
| 9:50am-10:10am | Culturing Strategies for Supporting Delta Smelt Supplementation Studies
Brandon Lee, University of California, Davis
Shawn Acuña, Metropolitan Water District of Southern California |
| 10:10am-10:20am | 10-MINUTE BREAK |

SESSION X – LONGFIN SMELT

Moderator: Heidi Williams, Valley Water

- | | |
|-----------------|---|
| 10:20am-10:40am | Transferable Approaches to Evaluate the Health of Early Life Stages of a Threatened Anadromous Fish Species, the Longfin Smelt
Florian Mauduit, University of California, Davis |
|-----------------|---|

- 10:40am-11:00am New Insights Regarding Longfin Smelt Life Histories
Levi Lewis, University of California, Davis
- 11:00am-11:20am Assessment of Environmental Factors on Apparent Growth in Longfin Smelt in the San Francisco Estuary
Bryan Matthias, U.S. Fish and Wildlife Service
- 11:20am-11:40am What Causes the Abundance of Longfin Smelt to Vary with Flow?
Wim Kimmerer, San Francisco State University
- 11:40am-12:00pm Physiological Insights for Improving Longfin Smelt Conservation Aquaculture and Management
Yuzo Yanagitsuru, University of California, Davis

LUNCH BREAK

- 12:00pm-1:00pm **Project Work Team Chairs Lunch** (PWT Chairs only)
MS Teams link sent to PWT Chairs
All others: lunch on your own

SESSION XI – DELTA SALMON

Moderator: Arnold Ammann, National Oceanic Atmospheric Administration Fisheries

- 1:00pm-1:20pm Quantifying the Role of Predation by Piscivorous Fishes as a Source of Juvenile Chinook Salmon Mortality in the Sacramento-San Joaquin Delta
Frederick Feyrer, U.S. Geological Survey
- 1:20pm-1:40pm Salmon Smolt Survival through the Sacramento River during the Late-Spring Outmigration
Jeremy Notch, University of California, Santa Cruz, NOAA Affiliates
- 1:40pm-2:00pm Characterizing neuroendocrine and neurotoxic effects of bifenthrin to salmonids and influence of climate change to toxicity: an integration of omic profiles to apical endpoints
Jason T. Magnuson, University of California, Riverside
Daniel Schlenk, University of California, Riverside
- 2:00pm-2:20pm DJFMP Electro-Fishing Occupancy Study: *a new sampling and statistical model to estimate occupancy of near-shore fishes*
Noble Hendrix, QEDA Consulting

2:20pm-2:40pm Rapid, CRISPR-Based Genetic Identification of Run-Type Enables New Opportunities for Management of Threatened Chinook Salmon
Emily Funk, University of California, Davis
Melinda Baerwald, California Department of Water Resources

2:40pm-2:50pm **10-MINUTE BREAK**

SESSION XII – RESIDENT FISHES

Moderator: Adam Nanninga, U.S. Fish and Wildlife Service

2:50pm-3:10pm Silverside Gold Mine: *non-native fish use of Suisun Marsh tidal restorations*
Elsie Platzer, University of California, Davis

3:10pm-3:30pm Heritability of Maturation Timing in Captive Delta Smelt
Melanie LaCava, University of California, Davis

3:30pm-3:50pm Assessing Biological Homogenization of the Sacramento-San Joaquin River Delta
Ryan McKenzie, U.S. Fish and Wildlife Service

3:50pm-4:10pm Hunger Games: *dietary overlap in larval Longfin Smelt, Prickly Sculpin, and Pacific Herring in the San Francisco Estuary*
Christina Burdi, California Department of Fish and Wildlife

4:10pm-4:30pm Interacting Effects of Physical Habitat and Hydrodynamics within Terminal Channels of a Tidal Freshwater Delta on Fish Community Structure
Brock Huntsman, U.S. Geological Survey

4:30pm-4:45pm **WORKSHOP CLOSES & AUDIENCE PARTICIPATES IN AWARD VOTING**

END OF WORKSHOP FOR SESSIONS 9-12

Don't forget to vote at the end of the workshop!

'Best Early Career Poster'

'People's Choice Best Presentation'

Thursday, March 24

CONCURRENT SESSION

ZOOM LINK : [2022 IEP Workshop Sessions 13-16](#)

SESSION XIII – INVASIVE SPECIES

Moderator: Elizabeth (Betsy) Wells, California Department of Water Resources

- 8:30am-8:50am Ecosystem, Engineering Impacts of Water Primrose in the Delta
Anastasios Mazis University of California, Merced
Bailey Morrison, University of California, Merced
- 8:50am-9:10am Black Sea Jellyfish Trends and Life History in Suisun Marsh
Caroline Newell, University of California, Davis
- 9:10am-9:30am Boom, Busts, and Enigmas: *stories of introduced crustaceans in San Francisco Estuary*
Kathy Hieb, California Department of Fish and Wildlife
- 9:30am-9:50am Hot, Cold, Wet, Dry, and Invaded: *current status and trends in non-native species in zooplankton, soft bottom, and hard bottom communities in San Francisco Bay*
Andrew Chang, Smithsonian Environmental Research Center
- 9:50am-10:10am Nutria Eradication Progress in California, from 2017 to Present
Jared Barr, California Department of Fish and Wildlife
- 10:10am-10:20am **10-MINUTE BREAK**

SESSION XIV – DATA SYNTHESIS

Moderators: Sam Bashevkin, Delta Science Program/Delta Stewardship Council
Rosemary Hartman, California Department of Water Resources

- 10:20am-10:40am Using Reproducibility and Automation to Generate the Seasonal Monitoring Report
Lara Mitchell, U.S. Fish and Wildlife Service

- 10:40am-11:00am Identifying Drivers of Food Web Dynamics through Data Integration and Synthesis
Tanya Rogers, National Oceanic Atmospheric Administration
Shruti Khanna, California Department of Fish and Wildlife, IEP
- 11:00am-11:20am Predicting Winter-Run Chinook Salmon in Salvage Using a Machine Learning Framework
Jereme W. Gaeta, California Department of Fish and Wildlife, IEP
- 11:20am-11:40am Change is Here: *climate change in the San Francisco Estuary*
Eva Bush, Delta Science Program/Delta Stewardship Council
- 11:40am-12:00pm Water Temperature-Inflow Relationships in the Upper San Francisco Estuary
Sam Bashevkin, Delta Science Program/Delta Stewardship Council

LUNCH BREAK

- 12:00pm-1:00pm **Project Work Team Chairs Lunch** (PWT Chairs only)
MS Teams link sent to PWT Chairs
All others: lunch on your own

SESSION XV – LOWER TROPHIC & INVERTEBRATES

Moderator: Michelle Avila, California Department of Fish and Wildlife

- 1:00pm-1:20pm Phytoplankton from Fish Restoration Program Data
Daniel Cox, California Department of Fish and Wildlife
- 1:20pm-1:40pm Copepod Diets, Comparison of *P. forbesi* Diets across Habitats and Feeding Experiments
Michelle Jungbluth, San Francisco State University
- 1:40pm-2:00pm Effects of Different Food Resources (Vascular Plants and Phytoplankton) on Copepod Survival and Growth
Amanda Rae McCormick, University of California, Davis
- 2:00pm-2:20pm Zooplankton BPUE and Distribution in Response to the Drought
Arthur Barros, California Department of Fish and Wildlife
- 2:20pm-2:40pm Mysid/Amphipod Data from Fall Midwater Trawl
Spencer Breining-Aday, California Department of Fish and Wildlife
- 2:40pm-2:50pm **10-MINUTE BREAK**

SESSION XVI – HARMFUL ALGAL BLOOMS

Moderator: Jenna Rinde, California Department of Fish and Wildlife

- 2:50pm-3:10pm Cyanobacteria Blooms in San Francisco Estuary
Peggy W. Lehman, California Department of Water Resources
- 3:10pm-3:30pm To HAB or to HAB Not: *cyanobacteria and cyanotoxins in the Delta, 2020-2021*
Keith Bouma-Gregson, U.S. Geological Survey
- 3:30pm-3:50pm Accumulation of Microcystin in Delta Invertebrates
Ellen P. Preece, Robertson-Bryan, Inc.
- 3:50pm-4:10pm A Study of *Microcystis* Bloom and Toxin Mitigation in Discovery Bay, CA Using an Eco-Friendly Approach
David A. Caron, University of Southern California; Aquatic EcoTechnologies, LLC
- 4:10pm-4:30pm Introducing the FHAB Program and Strategies to Foster Better Coordination and Communication
Marisa VanDyke, State Water Resources Control Board
Jenna Rinde, California Department of Fish and Wildlife
- 4:30pm-4:45pm **WORKSHOP CLOSES & AUDIENCE PARTICIPATES IN AWARD VOTING**

END OF WORKSHOP FOR SESSIONS 13-16

Thank You for Attending the 2022 IEP Workshop!

Don't forget to vote at the end of the workshop!

‘Best Early Career Poster’

‘People’s Choice Best Presentation’

See you next year!