

Interagency Ecological Program 2025 ANNUAL WORKSHOP

March 4-6, 2025



Interagency Ecological Program

COOPERATIVE ECOLOGICAL
INVESTIGATIONS SINCE 1970

Science, Synthesis, Service

2025 Workshop Planning Committee

Organizing Chairs:

Rosemary Hartman, California Department of Water Resources (Organizing Chair)

Adam Nanninga, U.S. Fish and Wildlife Service (Organizing Co-Chair)

Stephanie Fong, Interagency Ecological Program (IEP Program Manager)

Christine Joab, Interagency Ecological Program (IEP Program Facilitator)

Planning Committee Members: (alphabetical by last name)

Kristi Arend, U.S. Fish and Wildlife Service

Sam Bashevkin, State Water Resources Control Board

Morgan Battey, California Department of Water Resources

Keith Bouma-Gregson, U.S. Geological Survey

Hannah Chaney, Delta Science Program – Delta Stewardship Council

Jessica Falcon, U.S. Fish and Wildlife Service

Ted Flynn, California Department of Water Resources

Erika Holcombe, U.S. Fish and Wildlife Service

Brian Hutchinson, U.S. Fish and Wildlife Service

Shruti Khanna, Interagency Ecological Program (CDFW)

Rachel Klopfenstein, Delta Science Program – Delta Stewardship Council

Vivian Klotz, California Department of Water Resources

Tricia Lee, Delta Science Program – Delta Stewardship Council

Kim Luke, Delta Science Program – Delta Stewardship Council

Claudia Macfarlane, U.S. Fish and Wildlife Service

Timothy Malinich, California Department of Fish and Wildlife

Florian Mauduit, University of California Davis

Mackenzie Miner, California Department of Water Resources

Matt Murphy, U.S. Fish and Wildlife Service

Peter Nelson, California Department of Water Resources

Vivian Peck, U.S. Fish and Wildlife Service

Ellen Preece, California Department of Water Resources

Nicholas Rasmussen, California Department of Water Resources

Amelie Segarra, University of California Davis

Laura Twardochleb, State Water Resources Control Board

Jennie Wiggins, U.S. Fish and Wildlife Service

Ash Zemenick, Delta Science Program – Delta Stewardship Council

IEP Mission and Community Statement

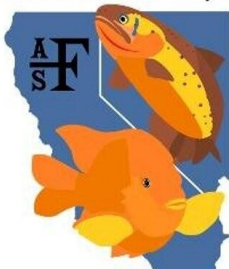
The Interagency Ecological Program's mission is to provide and integrate relevant and timely ecological information for management of the Bay-Delta ecosystem and the water that flows through it. This is accomplished through collaborative and scientifically sound monitoring, research, modeling, and synthesis 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.

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.

IEP Workshop Sponsors

The IEP Workshop Planning Committee would like to thank our sponsors for supporting activities at the workshop. The California-Nevada Chapter of the American Fisheries Society has been assisting IEP in securing the rental of poster boards for the poster session. The State Water Contractors is kindly sponsoring the Early Career Mentoring Luncheon and ICF, Jones & Stokes is sponsoring a Coffee & Tea Bar in the lobby.

California-Nevada Chapter



COVID Safety Guidelines

The California Natural Resources Agency follows health and safety measures set by the Sacramento County Public Health Office. Masks are not required to be worn inside the building. However, it is recommended to wear masks in crowded indoor public places. Masks and hand sanitizer are available at the Registration Table. If you are not feeling well, please stay home and watch remotely.

To Our Attendees

Welcome to the 2025 IEP Annual Workshop!

Registration

The workshop is a free, hybrid event taking place in the California Natural Resources Agency building ([715 P Street, Sacramento](#)) on March 4 through March 6, 2025.

Live presentations will be held in the auditorium (North Lobby, 1st floor) March 4-6. Registration to attend the live presentations in the auditorium is required. Registration opens February 3, 2025 and the registration link can be found on the [IEP Workshop](#) web page.

Remote viewing of the live presentations will be shared via Zoom. Registration for remote viewing is required. Registration opens February 3, 2025 and the Zoom registration link can be found on the [IEP Workshop](#) web page. The Zoom link will be specific to the registrant, so don't share it with others. The link will cover the entire 3-day workshop.

Scientific Presentations and Posters Training

A training course on preparing scientific presentations and posters will be held February 7, 2025 from 1:00 p.m. to 2:30 p.m. This training is 100% remote (via MS Teams) and open to anyone interested. Registration is required. The registration link can be found on the [IEP Workshop](#) web page.

Posters

Posters will be shown on the 2nd floor in conference rooms 2-221 B-C. An overflow seating area is available in room 2-221-A next to the poster rooms. For remote viewers, the posters and abstracts will be posted in the Poster Forum (on the [IEP Workshop](#) web page) after completion of the workshop.

Poetry Slam

A poetry slam will be held March 4 before the poster session on the first day of the workshop. This is an opportunity for poster authors to pitch their poster and encourage audience members to visit them during the poster session. Other attendees are welcome to share their creative poems, songs, skits, and stories about the San Francisco Estuary and California's amazing natural resources.

Early Career Luncheon (sponsored by the State Water Contractors)

An Early Career Luncheon is being hosted for people who are new to the Bay-Delta's science, management, and conservation community. Registration is required to attend. Mentors and

mentees will meet March 4 to have lunch to discuss career aspirations and experiences. Lunch is provided for registered participants.

Coffee & Tea Bar (sponsored by ICF Jones & Stokes)

A coffee & tea bar will be set up in the North Lobby on the 1st Floor. Drinks will be available in the morning and after lunch (quantities limited).

Drinks and food are not permitted inside the auditorium, so finish your tasty treats prior to entering the auditorium.

Early Career Judging & Awards

Awards will be given for the Best Presentation and the Best Poster by an early career scientist. Volunteer judges will be assigned to evaluate participating early career award candidate's presentations and posters. Visit the [IEP Annual Workshop](#) web page and register to be a judge. All questions can be directed to Ted.Flynn@water.ca.gov. The award winners will be announced on the [IEP website](#) and the workshop web page and each will receive an award certificate.

Accommodation Needs and Area Guide (Parking & Food)

If you require an accommodation such as a hearing assistive device for the auditorium, access to the elevator for getting to the 2nd floor, or access to a lactation room, please send an email to iep@wildlife.ca.gov prior to the workshop.

An [area guide](#) has been developed with suggestions for transportation, parking, and local eateries.



Workshop Day 1: Tuesday, March 4

REGISTRATION CHECK-IN

1st Floor North Lobby (next to Auditorium)

7:30 am – 8:30 am

IEP Workshop Welcome

Moderators and Speakers

8:30 am – 8:35 am

8:30 – 8:35 Workshop Welcome & Housekeeping
Rosemary Hartman, California Department of Water Resources (Organizer)
Adam Nanninga, U.S. Fish and Wildlife Service (Co-Organizer)

SESSION 1 – PLENARY 1

Moderators and Speaker:

8:35 am – 9:50 am

Rosemary Hartman, California Department of Water Resources (Organizer)

8:35 – 8:50 Update on IEP
Stephanie Fong, IEP Program Manager, California Department of Fish and Wildlife

8:50- 9:50 The Law of the Delta
Dr. Karrigan S. Börk, University of California Davis, School of Law and Interim Director at the University of California Davis, Center for Watershed Sciences

BREAK

9:50 – 10:05

SESSION 2 – LET'S SHAKE THINGS UP: REDESIGNING MONITORING

Moderator and Speakers:

10:05 am – 11:05 am

Claudia Macfarlane, U.S. Fish and Wildlife Service

10:05 – 10:25 The Redesign of CDFW Pelagic Fish Monitoring Studies in the San Francisco Estuary
Aroon Melwani, Applied Marine Sciences

10:25 – 10:45 Remember that IEP Science Advisory Group Review from a Decade Ago?
Adam Nanninga, U.S. Fish and Wildlife Service

10:45 – 11:05 Evaluating the Potential for Temporal or Spatial Redundancy in Sampling Across Zooplankton Monitoring Surveys in the Bay-Delta
Kristi Arend, U.S. Fish and Wildlife Service

BREAK

11:05 – 11:20

SESSION 3 – NEW MONITORING AND EXPANSIONS

Moderator and Speakers:

11:20 am – 12:36 pm

Adam Nanninga, U.S. Fish and Wildlife Service

- 11:20 – 11:40 Evaluating a New Fishery-Independent Survey Method in Monitoring the Population of White Sturgeon (*Acipenser transmontanus*) in the California Central Valley
Vanessa Lo, Pacific States Marine Fisheries Commission
Early Career Award candidate
- 11:40 – 12:00 Spatially-Explicit Water Quality Data Collected Onboard the R/V Sentinel
Craig Stuart, California Department of Water Resources
Early Career Award candidate
- 12:00 – 12:20 The Larval Entrainment Study (LES): 2024 on the Water
Morgan Gilbert, California Department of Fish and Wildlife
- 12:20 – 12:28 The Delta Juvenile Fish Monitoring Program Beach Seine Expansion Project
Jennifer Whitt, U.S. Fish and Wildlife Service
- 12:28 – 12:36 Contaminant Monitoring and Assessment in the Sacramento San Joaquin Delta to Inform Ecosystem Management: A Proposed Review by the Delta Independent Science Board (DISB)
Margo Mattson, CA Sea Grant Fellow, Delta Science Program – Adaptive Management Unit
Early Career Award candidate

LUNCH

Early Career Luncheon & Regular Lunch

12:36 pm – 1:50 pm

- 12:36 – 1:50 **Early Career Luncheon:** Meet in Lobby (Registered attendees only)
12:36 – 1:50 **Regular Lunch:** Area Restaurants – All attendees on their own

SESSION 4 – MUDDY WATERS, CLEAR GOALS: RESTORING WETLAND ECOSYSTEMS

Moderator and Speakers:

1:50 pm – 2:50 pm

Jennie Wiggins, U.S. Fish and Wildlife Service

- 1:50 – 2:10 A First Look at Adaptive Management Thresholds in Tidal Wetland Habitats

- Daniel Ellis, Interagency Ecological Program
- 2:10 – 2:30 Big Notch, Big Plans: Upcoming Operations and Adaptive Management Studies in the Yolo Bypass
Dennis Finger, California Department of Water Resources
- 2:30 – 2:50 Assessing Aquatic Food Web Responses to Tidal Slough Restoration Using Low-Impact Techniques
Joseph Merz, Cramer Fish Sciences

POETRY SLAM

Moderator: **2:50 pm – 3:10 pm**

Rosemary Hartman, California Department of Water Resources

SESSION 5 – POSTERS (2nd Floor, Rooms 2-221 B-C)

Moderators: **3:10 pm – 5:30 pm**

Erika Holcombe, U.S. Fish and Wildlife Service (Poster Chair)

Jennie Wiggins, U.S. Fish and Wildlife Service (Poster Chair)

See the Poster Abstract Booklet for list of poster titles and authors.

Workshop Day 2: Wednesday, March 5

REGISTRATION CHECK-IN

1st Floor North Lobby (next to Auditorium) **7:30 am – 8:30 am**

IEP Workshop Welcome

Moderators and Speakers **8:30 am – 8:35 am**

8:30 – 8:35 Workshop Welcome & Housekeeping

Rosemary Hartman, California Department of Water Resources (Organizer)

Adam Nanninga, U.S. Fish and Wildlife Service (Co-Organizer)

SESSION 6 – PLENARY 2

Moderators and Speakers: **8:35 am – 9:30 am**

Rosemary Hartman, California Department of Water Resources (Organizer)

Stephanie Fong, IEP (IEP Program Manager)

8:35 – 9:30 Regulatory Panel - IEP Monitoring: Informing Resource Management

Panel Members:

Sam Bashevkin, State Water Resources Control Board

Brooke Jacobs, California Department of Fish and Wildlife

NOTE: Session 6 will not be recorded as part of the workshop recording.

BREAK

9:30 – 9:45

SESSION 7 – FLOW AND PHYSICAL PROCESSES

Moderator and Speakers:

9:45 am – 10:57 am

Sam Bashevkin, California State Water Resources Control Board

9:45 – 10:06 Testing and Quantifying a Conceptual Model for the Response of Longfin Smelt to Outflow

Jason Hassrick, ICF, Fish and Aquatic Science

~~10:05 – 10:13 Physical Characteristics of Estuary Turbidity Maximums (ETMs) in the San Francisco Estuary [Canceled Presentation]~~

~~Kim Brewitt, ICF~~

10:06 – 10:16 Fate and Transport of Hydrophobic Organic Contaminants in a Terminal Slough: Impacts of Boat-Induced Turbidity

Cristina G.B. La, Southern Illinois University, Center for Fisheries, Aquaculture, and Aquatic Sciences

Early Career Award candidate

10:16 – 10:26 Long-Term Continuous Flow Monitoring in the Sacramento-San Joaquin Delta

Lex Thomas, U.S. Geological Survey

Early Career Award candidate

10:26 – 10:47 Suspended Sediment and Turbidity in the Sacramento-San Joaquin Delta, California, Influenced by an Unregulated Watershed During the Wet Water Year of 2023

Tara Morgan-King, U.S. Geological Survey

10:47 – 10:57 Long-Term Suspended-Sediment Monitoring in the Sacramento-San Joaquin Delta and San Francisco Bay

Bryan Gopez, U.S. Geological Survey

Early Career Award candidate

BREAK

10:57 – 11:10

SESSION 8 – FISH MODELING

Moderator and Speakers:

11:10 am – 12:38 pm

Matt Murphy, U.S. Fish and Wildlife Service

- 11:10 – 11:30 A Framework for a Juvenile Production Estimate of Central Valley Steelhead
Chase Ehlo, U.S. Bureau of Reclamation
- 11:30 – 11:50 Long-term Changes in the Rearing Habitat of Delta and Longfin Smelts
Gonzalo Castillo, U.S. Fish and Wildlife Service
- 11:50 – 12:10 Phenology-Informed Decline Risk of Estuarine Fishes and Their Prey Suggests
Potential for Future Trophic Mismatches
Robert Fournier, University of California Berkeley
Early Career Award candidate
- 12:10– 12:30 Identifying a Possible Relation Between Population Dynamics of White
Sturgeon and Hydrology
Jorge Arroyo-Esquivel, California Department of Fish and Wildlife
- 12:30 – 12:38 Recovering High-Frequency Plankton Dynamics from Low-Frequency Samples
Delia Carpenter, Scripps Institution of Oceanography
Early Career Award candidate

LUNCH

12:38 – 1:50 **Regular Lunch:** Area Restaurants – All attendees on their own

SESSION 9 – ENVIRONMENTAL STRESSORS ON SALMON AND SMELT

Moderator and Speakers:

1:50 pm – 3:34 pm

Florian Mauduit, University of California Davis

- 1:50 – 2:10 Advances in California Central Valley Salmon Science: Implications for
Landscape Scale Management in a Changing Climate
Brett Harvey, California Department of Water Resources
- 2:10 – 2:30 Going Viral: Presence and Abundance of Pathogens in Ocean Caught Chinook
Salmon Prior to Freshwater Entry
Andrea Chandler, University of California Davis, School of Veterinary Medicine,
Department of Anatomy, Physiology, and Cell Biology
Early Career Award candidate
- 2:30 – 2:38 Assessing Sublethal Effects of 4,4'-DDE in Juvenile Chinook Salmon
(*Oncorhynchus tshawytscha*) Using Internal Body Residues
Cristina G.B. La, Southern Illinois University, School of Biological Sciences
- 2:38 – 2:58 Evaluating the Impact of Pesticide Mixtures on Juvenile Chinook Salmon
Behavior Using Body Residues

Louise Cominassi, University of California Davis, School of Veterinary Medicine,
Department of Anatomy, Physiology, and Cell Biology

Early Career Award candidate

2:58 – 3:18

Larval Delta Smelt: Recent Observational and Experimental Results

Khiet Huynh, University of California Davis, Aquatic Health Program

Early Career Award candidate

3:18 – 3:26

An Assessment of 6PPD-Quinone Acute and Sublethal Toxicity on Endangered
Smelt in the Sacramento-San Joaquin Delta

Jackie Lang, University of California Davis

Early Career Award candidate

3:26 – 3:34

Estimating Survival of Chinook Salmon Eggs and Measuring Hyporheic
Conditions During Incubation in the Sacramento River

Jamie Byrne, Cramer Fish Sciences

Early Career Award candidate

SESSION 10 – POSTERS (2nd Floor, Rooms 2-221 B-C)

Moderators:

3:34 pm – 5:30 pm

Erika Holcombe, U.S. Fish and Wildlife Service (Poster Chair)

Jennie Wiggins, U.S. Fish and Wildlife Service (Poster Chair)

See the Poster Abstract Booklet for list of poster titles and authors.

Workshop Day 3: Thursday, March 6

REGISTRATION CHECK-IN

1st Floor North Lobby (next to Auditorium)

7:30 am – 8:30 am

The Cyanobacteria Harmful Algal Blooms Sub-Team (a focused working group under the IEP Water Quality and Phytoplankton Project Work Team) will be hosting a concurrent Cyanobacteria Harmful Algal Bloom Annual Meeting from 8:30 a.m. to 1:00 p.m. in the 2nd floor conference room 2-201. The goal of this meeting is to implement recommendation 1.5 of the Delt CHABs Monitoring Strategy “to hold an annual meeting focused specifically on Delta CHABs”. The objectives of the meeting are to enhance Delta CHAB collaboration by organizing a collaborative approach to implement the Delta CHAB Strategy and promote coordination, collaboration, and communication among agency and community partners. Contact the meeting organizers if you have questions: Laura Twardochleb (Laura.Twardochleb@waterboards.ca.gov), Tricia Lee (Tricia.Lee@deltacouncil.ca.gov), Ellen Preece (Ellen.Preece@water.ca.gov), and Keith Bouma-Gregson (kbouma-gregson@usqs.gov).

IEP Workshop Welcome

Moderators and Speakers

8:30 am – 8:35 am

8:30 – 8:35 Workshop Welcome & Housekeeping
Rosemary Hartman, California Department of Water Resources (Organizer)
Adam Nanninga, U.S. Fish and Wildlife Service (Co-Organizer)

SESSION 11 – FOOD WEBS AND PREDATION

Moderator and Speaker:

8:35 am – 10:35 am

Brian Hutchinson, U.S. Fish and Wildlife Service

8:35 – 8:55 Missed Connections: Identifying Key Food Web Interactions for Management in the Bay-Delta Estuary
Lillian McCormick

8:55 – 9:15 Quantifying Component Mortality Rates of Juvenile Steelhead Trout (*Oncorhynchus mykiss*)
Elizabeth Greenheck, George Mason University
Early Career Award candidate

9:15 – 9:35 Examining the Role of Predation and Habitat on Chinook Salmon Smolt Survival in the Sacramento River
Jordan Massie, University of Vermont, Rubenstein School of Environment and Natural Resources
Early Career Award candidate

- 9:35 – 9:55 Estimated Population Level Impacts from Piscivorous Predation on Juvenile Chinook Salmon in the Stanislaus River
Matthew Peterson, FISHBIO
- 9:55 – 10:15 How Four Introduced Copepod Species Interact in the San Francisco Estuary: Accommodation in a Low-Productivity Environment
Wim Kimmerer, San Francisco State University, Estuary & Ocean Science Center
- 10:15 – 10:35 Exploring Food-Web Subsidies from Shasta-Keswick Reservoirs as a Potential Management Strategy for Highly-Altered Downstream Ecosystems
Francisco J. Bellido-Leiva, University of California Davis, Center for Watershed Sciences
Early Career Award candidate

BREAK

10:35 – 11:10

SESSION 12 – MANAGEMENT AND POLICY

Moderator and Speakers:

11:10 am – 12:23 pm

Nicholas Rasmussen, California Department of Water Resources

~~10:55 – 11:15 COEQWAL: Water Allocation and Planning Data for Everyone
Eric Danner, NOAA Fisheries [Canceled Presentation]~~

11:10 – 11:31 Decision Uncertainty and Research Prioritization for Delta Smelt Summer-Fall X2 Action

Brian Mahardja, U.S. Bureau of Reclamation

11:31 – 11:41 Science Action Agenda Progress Summary

Kim Luke, Delta Stewardship Council

Early Career Award candidate

11:41 – 12:02 Machine Learning for Natural Resource Management

Kai Ross, Cramer Fish Sciences

12:02 – 12:23 Multi-Year Regional-Scale Efficacy Comparison of Two Herbicides for Treatment of Invasive Floating Aquatic Vegetation in a California Estuary

Shruti Khanna, IEP

LUNCH

12:23 – 1:45 **Regular Lunch:** Area Restaurants – All attendees on their own

SESSION 13 – PHYTOPLANKTON AND HABS (PART I)

Moderator and Speakers:

1:45 pm – 2:53 pm

Ted Flynn, California Department of Water Resources

- 1:45 – 2:05 Harmful Algal Toxins are Widespread in Shellfish Across the San Francisco Estuary
Ellen Preece, California Department of Water Resources
- 2:05 – 2:25 Using Genome Resolved Metagenomics to Assess the Taxonomic, Metabolic, and Toxigenic Diversity of Cyanobacteria in the Delta
Keith Bouma-Gregson, U.S. Geological Survey
- 2:25 – 2:45 More than Meets the Eye: Using Metabarcoding for Cyanobacteria and Phytoplankton Monitoring in the Delta
Silvia Angles, California Department of Water Resources
- 2:45 – 2:53 Comparative Analysis of Primary Production and Nutrient Cycling in Shoal and Channel Regions of the San Francisco Bay and Sacramento-San Joaquin Delta
Alexander R. Ryan, U.S. Geological Survey
Early Career Award candidate

BREAK

2:53 – 3:15

SESSION 14 – PHYTOPLANKTON AND HABS (PART II)

Moderator and Speakers:

3:15 pm – 4:23 pm

Hannah Chaney, Delta Stewardship Council

- 3:15 – 3:35 Investigating Phytoplankton Community Dynamics During the August 2022 *Heterosigma akashiwo* Bloom in San Francisco Bay, California
Schuyler Nardelli, U.S. Geological Survey
Early Career Award candidate
- 3:35 – 3:55 Vertical Mixing in Dead-End Channels of the Delta
Sienna White, University of California Berkeley
Early Career Award candidate
- 3:55 – 4:15 Investigating Drivers of Phytoplankton Dynamics in the South Delta
Nick Framsted, U.S. Geological Survey
Early Career Award candidate
- 4:15 – 4:23 Response of Phytoplankton to the Regional San Upgrade – Wet Years Versus Dry Years
Frances Wilkerson, San Francisco State University, Estuary and Ocean Science Center

CLOSING REMARKS

Moderators and Speakers:

4:23 pm – 4:30 pm

Rosemary Hartman, California Department of Water Resources (Organizer)

Adam Nanninga, U.S. Fish and Wildlife Service (Co-Organizer)

4:23 – 4:30 Closing Remarks

Rosemary Hartman, California Department of Water Resources (Organizer)

Adam Nanninga, U.S. Fish and Wildlife Service (Co-Organizer)

