

October 21–22, 2019  
Scottish Rite Center, 1547 Lakeside Drive, Oakland, CA

# 14<sup>th</sup> Biennial *State of the San Francisco Estuary Conference*

*Plenary Program* **MONDAY, OCTOBER 21, 2019**—Grand Auditorium (4<sup>th</sup> Floor)

- 9:00 AM Ohlone Welcome and Land Acknowledgement**  
*Kanyon Sayers-Roods (Hahashkani), Costanoan Ohlone and Chumash*
- 9:05 AM Welcome**  
*Libby Schaaf, Mayor of Oakland*
- 9:10 AM Opening Remarks**  
*Mark Gold, Deputy Secretary for Ocean and Coastal Policy and Director of the Ocean Protection Council, California Natural Resources Agency*
- 9:25 AM Climate Change and the Future of California's Water**  
*Geeta Persad, Senior Climate Scientist, Western States Office, Union of Concerned Scientists*
- 9:45 AM Toward Social-Ecological Resilience: The State of the Estuary Report 2019**  
*Letitia Grenier, Resilient Landscapes Program Director, San Francisco Estuary Institute*  
*Gabby Trejo, Executive Director, Sacramento Area Congregations Together*  
*Jacqueline Zipkin, General Manager, East Bay Dischargers Authority*  
*Will Dominie, Policy Manager of Housing and Equitable Development, Bay Area Regional Health Inequities Initiative*
- 10:20 AM *Jean Auer Award***
- 10:40 AM *Break***—Blue Room (3<sup>rd</sup> Floor)

**11:00 AM Building Trust: Striving Toward Equitable and Inclusive Outcomes**

**Moderator:** *Nahal Ghoghaie Ipakchi, Director, EcoEquity*

**Panelists:**

*LaDonna Williams, Programs Director, All Positives Possible*

*Violet Saena, Resilient Communities Program Manager, Acterra*

*Beth Rose Middleton, Associate Professor, UC Davis*

*Yana Garcia, Assistant Secretary for Environmental Justice and Tribal Affairs, CalEPA*

*Josue Medellin-Azuara, Associate Professor, UC Merced*

**12:15 PM *Lunch***—Grand Ballroom (1<sup>st</sup> Floor)

**Drone Demonstration**

*Pete Kauhanen, SFEI*

Participants can pick up their lunch and cross the street to participate in a 20-minute lunchtime demonstration of an unoccupied aerial vehicle (UAV) flight on the shoreline of Lake Merritt (approximate start time is 12:35 PM).

**Equity and the State of the Estuary  
Conference: A Roundtable Discussion  
— Gold Room (4<sup>th</sup> Floor)**

An open conversation about integrating social equity into the planning of this conference—please grab your lunch and join the chat (approximate start time is 12:35 PM).

## Grand Auditorium—4<sup>TH</sup> Floor *Habitats & Living Resources*

From Regional to Local: Integrated Monitoring for Healthy Wetlands

- 1:35 PM** Introduction  
*Heidi Nutters, SFEP*
- 1:40 PM** A Regional Vision for Coordinated Monitoring: The Wetland Regional Monitoring Program  
*Luisa Valiela, U.S. EPA and Xavier Fernandez, SF Bay Water Board*
- 2:00 PM** Connecting the Dots on Regional Sediment Management: Coordinating Sediment Monitoring in the Watersheds, the Bay, and the Wetlands  
*Jeremy Lowe, SFEI and Brenda Goeden, BCDC*
- 2:20 PM** South Bay Salt Pond Restoration Project: Science and Adaptive Management in Action  
*Rachel Tertes, USFWS*
- 2:40 PM** Integrating our Past and Future Monitoring in the South Bay Salt Pond Restoration Project  
*Dave Helsing, SBSP Restoration Project*
- 3:00 PM** Panel Discussion

**3:20 PM** *Break-Blue Room (3<sup>RD</sup> Floor)*

Monitoring with New or Emerging Technologies

- 3:40 PM** Introduction  
*Tony Hale, SFEI*
- 3:45 PM** Using Satellite Imagery to Detect Turbidity Levels in Relation to Freshwater Flows  
*Christine Lee, NASA*
- 4:05 PM** New Applications of Remote Sensing for Mapping Vegetation  
*Iryna Dronova, UC Berkeley*
- 4:25 PM** Use of High-Resolution In-Situ and Remote Sensing for Water Quality and Mercury Monitoring  
*Mark Marvin-DiPasquale, USGS*
- 4:45 PM** Panel Discussion

## Banquet Room—3<sup>RD</sup> Floor *Climate Resilience*

Forward-Looking Science in the San Francisco Estuary

- 1:35 PM** This panel will discuss how the science enterprise across the estuary can best support strategic and forward-looking management and stakeholder needs in the face of a rapidly changing environment.
- Moderator:** *Yumiko Henneberry, Delta Science Program-Delta Stewardship Council*
- Panelists:**  
*Steve Brandt, Delta Independent Science Board*  
*Liz Whiteman, Ocean Science Trust*  
*Jessie Lacy, USGS*  
*Mike Choikowski, Pacific Region, USGS*  
*Steve Goldbeck, BCDC*

**3:20 PM** *Break-Blue Room (3<sup>RD</sup> Floor)*

Policy Updates to Support a Healthy, Resilient Estuary

- Moderator:** *John Callaway, Delta Science Program-Delta Stewardship Council/USF*
- 3:40 PM** Advancing Policies for a Rising Bay: BCDC's Long-Range Planning Efforts  
*Shannon Fiala, BCDC*
- 3:50 PM** Water Board Policy Update on Wetlands and Climate Change  
*Christina Toms, SF Bay Water Board*
- 4:00 PM** The BRRIT: Coordinated Permitting for San Francisco Bay Restoration Projects  
*Amy Hutzel, State Coastal Conservancy*
- 4:10 PM** Using Best Available Science to Update the Ecosystem Chapter of the Delta Plan  
*Ron Melcer, Delta Stewardship Council*
- 4:20 PM** Panel Discussion

## Red Room—4<sup>TH</sup> Floor *Water Quality*

Contaminants of Emerging Concern in the Estuary

- 1:35 PM** Introduction  
*Kelly Moran, TDC Environmental*
- 1:40 PM** Elevating the Status of Emerging Contaminants in San Francisco Bay  
*Melissa Foley, SFEI*
- 2:05 PM** California's Safer Consumer Products Program Overview and Efforts to Protect Aquatic Health  
*Anne-Cooper Doherty, DTSC*
- 2:30 PM** Pesticides in Surface Water: Sources, Pathways, and Fate  
*Jennifer Teerlink, DPR*
- 2:55 PM** Microplastics Everywhere: Understanding Microplastics in the Bay and Recommended Actions  
*Diana Lin, SFEI*
- 3:20 PM** *Break-Blue Room (3<sup>RD</sup> Floor)*

Nutrients in the Estuary

- 3:40 PM** Introduction  
*Eric Dunlavey, City of San Jose*
- 3:45 PM** Bay-Delta Nutrient Science Update  
*Dave Senn, SFEI*
- 4:10 PM** Wastewater Treatment Plant Upgrades and Nature-Based Solutions for Reducing Nutrient Loads from Wastewater  
*Holly Kennedy, HDR and Ian Wren, SF Baykeeper*
- 4:35 PM** Potential Effects of the Sacramento Regional Wastewater Treatment Plant Upgrade  
*Tamara Kraus, USGS*

## Gold Room—4<sup>TH</sup> Floor *Human Dimensions*

The Next Wave in Conservation: Community-Based and Design Approaches

- 1:35 PM** Introduction  
*Allison Brooks, Bay Area Regional Collaborative*
- 1:40 PM** Designing the Colma Creek Project  
*Richard Mullane, Hassel Studio*
- 2:00 PM** Parks as Resilient Infrastructure in the Wild West: A Houston Example  
*Amy Morris, Land and Water Connections Consulting*
- 2:20 PM** Nature as Infrastructure in the SF Bay Area: A Brief History of the Long Path to Conservation for Coyote Valley  
*Amanda Brown-Stevens, Greenbelt Alliance*
- 2:40 PM** An Ecological Framework for Urban Infrastructure Planning to Improve Human Health  
*Brent Bucknum, Hyphae Design Lab*
- 3:00 PM** Panel Discussion

**3:20 PM** *Break-Blue Room (3<sup>RD</sup> Floor)*

Humanizing Homelessness for Healthier Creeks and Communities

- 3:40 PM** Throughout the estuary, practitioners are working across traditional divides to take a human-centered approach to the challenges created by unsheltered and vulnerable communities along creeks, resulting in benefits to people, water quality, and habitat. Panelists will discuss successes, challenges, and ways they have formed innovative partnerships to foster collaborative solutions to the regional crisis of homelessness.
- Moderator:** *Mike Antos, Stantec*
- Panelists:**  
*Chris Brokate, Clean River Alliance*  
*Julia Lang, Downtown Streets Team*  
*Cori Ring-Martinez, Environmental Justice Coalition for Water*  
*Talia Rubin, City of Oakland*

## Green is the New Gray: Nature-Based Infrastructure

9:00 AM **Introduction**

*Thomas Mumley, Assistant Executive Officer, San Francisco Bay Regional Water Quality Control Board*

9:05 AM **To Resiliency and Beyond: Multi-Benefit Highway 37**

*Ashley Nguyen, Director of Design and Project Delivery, Metropolitan Transportation Commission*

9:25 AM **Green Infrastructure Implementation Challenges and Opportunities: Navigating Constraints and Issues of Scale**

*Keith Lichten, Division Chief, San Francisco Bay Regional Water Quality Control Board*

9:45 AM **Living Shorelines: Linking Estuary Habitats and Building Capacity to Adapt to Rising Seas**

*Katharyn Boyer, Professor of Biology, Estuary & Ocean Science Center—San Francisco State University, and Marilyn Latta, Project Manager, State Coastal Conservancy*

10:05 AM *Outstanding Environmental Awards and Creative Environmental Award*

10:25 AM *Break*—Blue Room (3<sup>RD</sup> Floor)

## Zooming Out to the Full System

10:45 AM **Welcome**

*John Callaway, Lead Scientist, Delta Science Program-Delta Stewardship Council and University of San Francisco*

10:50 AM **One Delta, One Estuary: Connecting California through Water**

*Felicia Marcus, Former Chair, State Water Resources Control Board*

11:10 AM **Viewing Estuaries from a Macroscope**

*Jim Cloern, Senior Scientist Emeritus, U.S. Geological Survey*

11:30 AM **Standing Too Close to the Elephant: Addressing Scales in Restoration and Fisheries Conservation**

*Rachel Johnson, Research Fisheries Biologist, National Marine Fisheries Service and UC Davis*

11:50 AM **The Sacramento-San Joaquin Delta National Heritage Area: California's First Heritage Area**

*Erik Vink, Executive Director, Delta Protection Commission*

11:55 AM **San Francisco Bay is a Hope Spot for People and Ocean Wildlife**

*Karina Nielsen, Executive Director and Professor of Biology, Estuary & Ocean Science Center—San Francisco State University*

12:00 PM *Lunch*—Grand Ballroom (1<sup>ST</sup> Floor)

### Oakland Green Infrastructure Walking Tour

Participants can pick up their lunch and cross the street to participate in a 30-minute lunchtime walking tour (approximate start time is 12:35 PM).

**Premier Sponsor:**

Delta Stewardship Council

**Major Co-Sponsors:**

Bay Area Clean Water Agencies  
State Coastal Conservancy

**Anchor Co-Sponsors:**

Cargill  
Port of San Francisco  
San Francisco Public Utilities Commission

**Co-Sponsors:**

Balance Hydrologics  
California Department of Fish and Wildlife  
California Department of Water Resources  
Central Contra Costa Sanitary District  
Citizens Committee to Complete the Refuge  
Contra Costa County Flood Control & Water Conservation District  
Delta Protection Commission  
East Bay Municipal Utility District  
East Bay Regional Park District  
Environmental Science Associates  
Estuary & Ocean Science Center  
Friends of the San Francisco Estuary  
H.T. Harvey & Associates  
Oakland City Attorney Barbara J. Parker  
Port of Oakland

Sacramento Regional County Sanitation District  
San Francisco Bay Conservation and Development Commission  
San Francisco Estuary Institute  
SF Bay National Estuarine Research Reserve  
Save The Bay  
Smithsonian Environmental Research Center  
Sonoma County Water Agency  
Sonoma Land Trust  
Stantec  
U.S. Army Corps of Engineers  
U.S. Environmental Protection Agency  
Valley Water  
Wildlife Conservation Board  
WRA, Inc.  
Zone 7 Water Agency



## Grand Auditorium—4<sup>TH</sup> Floor *Habitats & Living Resources*

The Sierra Nevada to the Farallones: How Birds, Fish, and Mammals Connect the Estuary and Ocean

- 1:20 PM** Introduction  
*Kathy Hieb, CDFW*
- 1:25 PM** From the Bay to the Gulf and Beyond: What 20 Years of Seabird Monitoring Tells Us About Food Webs  
*Dan Robinette, Point Blue Conservation Science*
- 1:50 PM** Whales, Dolphins, and Porpoises: Harbingers of Recovery and Changing Seas  
*Tim M. Markowitz, UC Berkeley/TMMC/SFSU*
- 2:15 PM** Vital Signs of the San Francisco Estuary Fish Community  
*Christina Swanson, NRDC and Jon Rosenfield, SF Baykeeper/The Bay Institute*
- 2:40 PM** Identifying Habitat Needs and Management Goals for Waterfowl Wintering Across the Delta-Bay-Ocean Continuum  
*Susan De La Cruz, USGS*
- 3:05 PM** *Break-Blue Room (3<sup>RD</sup> Floor)*

From Tidal Wetlands to the Uplands: Fish and Wildlife as Indicators

- 3:25 PM** Introduction  
*Steve Culberson, IEP*
- 3:30 PM** A Fish-Eye View of Habitat Quality in San Francisco's Brockish Tidal Wetlands  
*Levi Lewis, UC Davis*
- 3:55 PM** Mice in the Middle: The Special Case of Terrestrial Wildlife in the Marshes of the San Francisco Estuary  
*Katie Smith, UC Davis/WRA, Inc.*
- 4:20 PM** Tidal Marsh Birds: Indicators of Habitat Quality of the Wetland/Upland Transition Zone  
*Nadav Nur, Point Blue Conservation Science*

## Banquet Room—3<sup>RD</sup> Floor *Climate Resilience*

Regional Science for Decision-Making in Uncertain Times

- 1:20 PM** Introduction  
*Julie Beagle, SFEI*
- 1:25 PM** A Risk Management Approach to Delta Water Supply Vulnerability  
*Andrew Schwarz, Delta Stewardship Council*
- 1:50 PM** Underappreciated Effects of Sea-Level Rise on Groundwater  
*Phil Gregory, Cal Engineering & Geology, Inc.*
- 2:15 PM** Sediment Dynamics and Wave Attenuation at the Marsh Edge  
*Jessie Lacy, USGS*
- 2:40 PM** Informing Development and Evaluation of Nature-Based Shoreline Adaptation Strategies in a Changing Climate  
*Maya Hayden, Point Blue Conservation Science*
- 3:05 PM** *Break-Blue Room (3<sup>RD</sup> Floor)*

Planners and Engineers and Regulators... Oh My! Roles in Regional Governance

- 3:25 PM** Recent work by Dr. Mark Lubell, UC Davis, has identified governance as a critical impediment to successful regional implementation of sea level rise adaptation strategies. Numerous agencies and organizations in the Bay Area have been taking action to fill this gap and provide leadership in a variety of ways, resulting in a complex landscape. This panel will explore the roles and strategies of various organizations, and discuss how they can fit together to achieve a sound strategy for regional governance.
- Moderator:** John Bourgeois, ESA
- Panelists:**  
*Jessica Fain, BCDC/ART*  
*Jessica Law, Delta Stewardship Council*  
*Mark Lubell, UC Davis*  
*Jim McGrath, SF Bay Water Board*  
*Mike Mielke, Silicon Valley Leadership Group*  
*Erika Powell, CHARG and San Mateo SLR Agency*

## Red Room—4<sup>TH</sup> Floor *Water Quality*

Integrating Green Stormwater Infrastructure into the Bay Area's Urban Landscape

- 1:20 PM** Introduction  
*Melody Tovar, City of Sunnyvale*
- 1:25 PM** A 15-year Retrospective: Large-scale Green Infrastructure Changes via Private Redevelopment in the South Bay  
*Chris Sommers, EOA/SCVURPPP*
- 1:50 PM** Getting It Done: Public Right-of-Way Green Stormwater Infrastructure  
*Terri Fashing, City of Oakland and Amanda Booth, City of San Pablo*
- 2:15 PM** Modeling and Planning for Long-Term Green Infrastructure Implementation in San Mateo County  
*Matt Fabry, City/County Association of Governments of San Mateo County*
- 2:40 PM** What's So Hard About Digging a 40" Hole? Perspectives on Green Infrastructure  
*Municipal Staff and Water Quality Regulators*
- 3:05 PM** *Break-Blue Room (3<sup>RD</sup> Floor)*

Accelerating Improvement of Water Quality and Habitat on Working Lands

- 3:25 PM** Moderator  
*Frances Knapczyk, Napa County RCD*
- 3:30 PM** Improving Water Quality and Achieving TMDL Compliance in Suisun Marsh  
*Stuart Siegel, SFSU/SF Bay NERR*
- 3:50 PM** LandSmart Program: Helping Vineyard Managers Meet Resource Conservation Goals in the North Bay  
*Lucas Patzek, Napa County RCD*
- 4:00 PM** Managing Grazed Rangelands for Water Quality in Alameda County  
*Alyson Aquino, USDA-NRCS Alameda County*
- 4:10 PM** Cows, Water, and Wildlife in the North Delta  
*Wendy Rash, USDA-NRCS Solano County*
- 4:20 PM** Panel Discussion

## Gold Room—4<sup>TH</sup> Floor *Human Dimensions*

Urban Biodiversity and Human Health

- 1:20 PM** Introduction  
*Micaela Bazo, SFEI*
- 1:25 PM** Using Science to Guide Urban Design for Biodiversity and Human Health  
*Erica Spotswood, SFEI*
- 1:50 PM** Flora, Fauna, and Folks: Reimagining the City as a Park  
*Chryl Corbin, UC Berkeley*
- 2:15 PM** Design and the Interconnected Scales of Well-Being  
*Chris Garvin, Biome Impact LLC*
- 2:40 PM** Biodiversity for All at the Presidio of San Francisco  
*Michael Bolland, Presidio Trust*
- 3:05 PM** *Break-Blue Room (3<sup>RD</sup> Floor)*

Public Learning in an Era of Climate Crisis

- Through presentation of recent projects both within the Exploratorium and out in communities, the panelists will discuss and evaluate approaches that integrate informal environmental education and the humanities (arts, social science, literature) and share lessons learned, with particular focus on fostering climate change resilience strategies.
- 3:25 PM** Moderator  
*Maira McEnespy, SCC*
- 3:30 PM** Public Education at the Exploratorium—Science, Art, and Social Connection  
*Susan Schwartzberg and Shawn Lani, Exploratorium*
- 3:50 PM** Paired Conversations with Curators, Artists, Social/Cognitive Scientists
- Middle Ground: Social Perspectives on Collaborative Engagement  
*Shawn Lani and Heike Winterheld, Exploratorium*
  - The Brain and Observation: Towards a Language of Resilience  
*Susan Schwartzberg, Exploratorium and Pireeni Sundaralingam, Poet/Cognitive Scientist*
- 4:20 PM** Panel Discussion