



Symposium Program

Thursday, April 11 - Saturday, April 13, 2024

Sequoia Conference Center

In recognition of his significant contributions to estuarine and marine ecology in Humboldt Bay and the north coast, for his lengthy teaching career inspiring hundreds of university students over the years, and for being a founding board member of the Coastal Ecosystems Institute of Northern California, we are dedicating this year's Humboldt Bay Symposium to Dr. Frank Shaughnessy, professor emeritus of botany and marine biology at Cal Poly Humboldt.

In honor of Frank's many contributions to our community, the Coastal Ecosystems Institute is establishing a scholarship in Frank's name to help students with an interest in marine and estuarine sciences in pursuing their higher education goals at Cal Poly Humboldt or College of the Redwoods.



Thursday April 11, 2024

- 1:00 PM Conference welcome
Adam Canter, Wiyot Tribe
- 1:15 PM 2024 Humboldt Bay Symposium Honoree
Frank Shaughnessy
- 1:25 PM Keynote Address: "Winds of Change"
Troy Nicolini, NOAA's National Weather Service

Session One: Climate Change & Climate Equity

Organizer: Kristen Orth-Gordinier, GHD

- 1:45 PM Eelgrass is an Early Indicator of Changing Conditions in the Humboldt Bay and Eel River Estuaries
Whelan Gilkerson, Merkel & Associates
- 2:00 PM Climate and our Coastal Ocean: Insights from 16 years of Observations Along the Trinidad Head Line
Eric Bjorkstedt, NOAA-SWFSC & Cal Poly Humboldt
- 2:15 PM Improving Climate Resilience in North Coast Tribal Fisheries
Michelle Schuiteman, Cal Poly Humboldt
- 2:30 PM A First Look at Humboldt Bay Salinity, Temperature and Circulation Response to Global Climate Change and Sea Level Rise
Jeff Anderson, Northern Hydrology & Engineering
- 2:45 PM *Questions*
- 3:00 PM **BREAK**
- 3:15 PM **Panel: Climate Equity**
Moderators: Nayre Herrera & Laurie Richmond, Cal Poly Humboldt
Nayre Herrera, Cal Poly Humboldt
Bill Matsubu, Blue Lake Rancheria
Kiya Bibby, California Ocean Science Trust
Megan Acevedo, County of Humboldt
Hank Seeman, County of Humboldt Public Works
Laurie Richmond, Cal Poly Humboldt SLRI & Sea Grant
Adam Canter, Wiyot Tribe
- 3:45 PM *Panel discussion & questions*

4:30 – 6:30 PM Poster Session & Mixer

Friday April 12, 2024

Session Two: Sea Level Rise

Organizer: *Kristen Orth-Gordinier, GHD*

- 9:00 AM Welcome & Introduction to the Cal Poly Humboldt Sea Level Rise Institute
Laurie Richmond, Cal Poly Humboldt SLRI
Adam Canter, Wiyot Tribe & SLRI
- 9:10 AM Future Coastal Flood, Shoreline Change, and Groundwater Hazards Modeling with CoSMoS in Humboldt County
Andrea O'Neill & Maya Hayden, U.S. Geological Survey - Pacific Coastal and Marine Science Center
- 9:25 AM A Scenario-Based GIS and Hydrodynamic Modeling Approach to Improve our Understanding of SLR and Incremental Adaptation
Brett Vivyan, GHD
- 9:40 AM Progress with Consent-based Siting: Community Engagement, Federal Consolidated Interim Storage, and Humboldt Bay Spent Nuclear Fuel Management
Vincent Ialenti, U.S. Department of Energy
- 10:10 AM BREAK
- 10:25 AM Caltrans Update on Sea Level Rise Planning along the 101
Lorna McFarlane, California Department of Transportation District 1
- 10:35 AM Sea Level Rise Adaptation and the Humboldt Bay Trail
Hank Seemann, County of Humboldt Public Works
- 10:45 AM Natural Shoreline Infrastructure: Adapting to the Future with Innovative Approaches in Nature Based Flood Resiliency along a Vulnerable Shoreline of Humboldt Bay Between Eureka and Arcata
Jeremy Svebla, GHD
- 10:55 AM Questions
- 11:10 AM Development of Humboldt Bay Shoreline Adaptation Atlas to Inform Equitable Nature-based Climate Adaptation
Bill Matsubu, Blue Lake Rancheria
- 11:30 AM Public Input: 5th California Climate Assessment Report - North Coast Regional Climate Vulnerabilities, Resilience, and Needs
Rosemary Sherriff & Andrew Stubblefield, Cal Poly Humboldt
- 12:00 PM LUNCH

Session Three: Ecology & Restoration

Organizers: *Emily King Teraoka, Stillwater Sciences & Bernadette Cluett, ICF*

- 1:00 PM Wiyot Tribe and BLM: Enhancing and Reconnecting Forestry and Fisheries in Hiksha'ri (Elk River)
Zach Erickson & Marisa McGrew, Wiyot Tribe
Zane Ruddy, Marissa Vossmer, & David Hammons, BLM
- 1:20 PM Ecology of Recovery: Research and Monitoring Floodplain Habitat Restoration for Threatened Coho Salmon
Josh Cahill & Kate Stonecypther, Cal Poly Humboldt
- 1:40 PM Restoration Project Updates
Katie Marsolan, City of Eureka Public Works
Outcomes/Highlights of the Elk River Estuary Enhancement Project
Ross Taylor, Ross Taylor & Associates
Biological Monitoring of the Martin Slough Enhancement Project
Andrea Pickart, U.S. Fish and Wildlife Service
Dune Restoration at Wadulh Unit, Humboldt Bay National Wildlife Refuge
James Ray, California Department of Fish and Wildlife
Ocean Ranch Restoration Project
- 2:20 PM BREAK
- 2:40 PM The Future of Tidal Marsh Restoration in Humboldt Bay: It's Dirty Work
Conor Shea, U.S. Fish and Wildlife Service
- 3:00 PM Habitat and Soil Carbon Development in a Restored Tidal Wetland - White Slough Tidal Wetland Restoration Project
Karen Thorne & Jenny Curtis, U.S. Geological Survey
- 3:20 PM Ecological Enhancement Through Instream Flow Dedication (Humboldt Bay Municipal Water District)
Michelle Fuller & Sberi Woo, Humboldt Bay Municipal Water District
- 3:40 PM Consideration to Reintroduce Sea Otters to Northern California and Oregon
Matt Parker, U.S. Fish and Wildlife Service
- 3:50 PM Pacific Marine and Estuarine Fish Habitat Partnership - Promoting Effective Estuary Restoration in Humboldt Bay and Beyond
Bill Pinnix, U.S. Fish and Wildlife Service
- 4:10 PM Harmonic Analysis of Currents within Humboldt Bay
Tamara Barriquand, Cal Poly Humboldt

Saturday April 13, 2024

Session Four: Fisheries & Aquaculture

Organizers: Carolyn Belak, H. T. Harvey & Associates

- 9:00 AM Welcome
- 9:10 AM Seaweed Farming in California: Restoration, Remediation & Regenerative Food Systems
Leslie Boober, Sunken Seaweed
- 9:25 AM Seaweed and Finfish Co-culture
Torre Polizzi, Sunken Seaweed
- 9:40 AM Humboldt Bay: The Nexus of California Shellfish Aquaculture
Justin Mojonier, Hog Island Oyster Company
- 9:55 AM The Intersection of Low-Trophic Aquaculture, Conservation, and Social-Justice
Nathan Churches, Holdfast Aquaculture & Santa Monica College
- 10:05 AM BREAK
- 10:20 AM Nordic Aquafarms
Scott Thompson, Nordic Aquafarms
- 10:35 AM Dynamic Fluctuations in Fish Communities of Humboldt Bay: A Seasonal Analysis Using Environmental DNA (eDNA) Metabarcoding
Johnathon Richardson, Cal Poly Humboldt
- 10:50 AM Night Smelt (*Spirinchus starksi*) Populations have Decreased Significantly in Humboldt and Del Norte Counties in the Last Decade
Z Zenobia, Cal Poly Humboldt
- 11:05 AM Offshore Wind Development and Alien Invasive Species Risks - What Do We Know?
Cyndi Dawson, California Department of Fish & Wildlife

Session Five: Offshore Wind & Port Development

Organizer: Jen Kalt, Humboldt Waterkeeper & Adam Wagschal, Moffatt & Nichol

- 11:25 AM Observing Ecosystem Change in Northern California to Support Offshore Wind and Expand the Blue Economy
Alex Harper, Central & Northern CA Ocean Observing System CeNCOOS
- 11:40 AM Offshore Wind, Climate Goals, and Transmission Infrastructure
Arne Jacobsen, Schatz Energy Research Center
- 12:00 PM LUNCH
- 1:00 PM Entanglement and Offshore Floating Wind Energy: What do we know?
Ben Pridonoff, Schatz Energy Research Center
- 1:15 PM Two Novel Approaches Generate Insight Into Seabird Interactions with Planned Floating Offshore Wind Facilities along the U.S. West Coast
Stephanie Schneider, H. T. Harvey & Associates
- 1:30 PM Humboldt Bay Harbor Seals and Potential Impacts of Offshore Wind Development
Dawn Goley, Cal Poly Humboldt
- 1:45 PM Questions
- 2:00 PM Panel: Considerations for Offshore Wind in Humboldt County: A Conversation with Developers
Erik Peckar, Vineyard Offshore
Ciara Emery, RWE
- 2:20 PM Panel: Tribal Perspectives
Marnie Atkins, Wiyot Tribe
Heidi Moore-Guynup, Blue Lake Rancheria
- 2:40 PM BREAK
- 3:00 PM Humboldt Bay Harbor Offshore Wind Energy Planning
Adam Wagschal, Moffatt & Nichol
- 3:10 PM Project Update: Humboldt Bay Heavy Lift Offshore Wind Marine Terminal & Green Terminal Strategy
Chris Mikkelsen, Humboldt Bay Harbor, Recreation, and Conservation District
- 3:20 PM Sedimentation and Dredging in Five West Coast Estuaries: Humboldt, Crescent City, Coos Bay, Grays Harbor, Willapa
Younes Nouri, Moffatt & Nichol
- 3:30 PM Questions
- 3:45 PM Closing remarks
Troy Nicolini, NOAA's National Weather Service

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Organizing committee:

Carolyn Belak, *H. T. Harvey & Associates*

Bernadette Clueit, *ICF*

Jen Kalt, *Humboldt Waterkeeper*

Emily King Teraoka, *Stillwater Sciences*

Sharon Kramer, *H. T. Harvey & Associates*

Kristen Orth-Gordinier, *GHD*

Adam Wagschal, *Moffatt & Nichol*



Coastal Ecosystems Institute
of Northern California

The Coastal Ecosystems Institute of Northern California (CEINC) is a nonprofit organization dedicated to promoting and interpreting coastal ecosystem science along California's north coast to ensure vibrant and resilient coastal ecosystems. CEINC (<http://www.coastalecosystemsinstitute.org>) is an independent nonprofit that uses science and collaboration to inform management and promotes policy based on the best available science.

2024 Humboldt Bay Symposium