

PROGRAM
2016 Columbia River Estuary Conference:
Recent Anomalous Environmental Conditions – Drivers and Consequences

May 24 – 26, 2016
Liberty Theater, Astoria, OR

May 24, 2016

- 8:00 AM **Registration**
- 9:00 AM **Invocation**
Tanna Engdahl, Cowlitꞵ Indian Tribe
- 9:20 AM **Welcome and Introduction to the Columbia River Estuary Conference**
Catherine Corbett, Chair Steering Committee
- 9:30 AM **Keynote Address – Predicted Climate Change Impacts in Pacific Northwest**
Phil Mote, Director, Oregon Climate Change Research Institute and Oregon Climate Services, Oregon State University

Session 1: Integrating Climate Change Impacts and Multiple Species in Restoration Design and Resource Management

Session Moderator: Patty O'Toole

- 10:00 AM **Integrating Multi-Species and Climate Change Impacts into Restoring the Lower Columbia River Ecosystem**
Catherine Corbett, Keith Marcoe, Matt Schwartz, Chris Collins
- 10:20 AM **More Than One Look: Using Hydrodynamic and Ecosystem Models to Predict Habitat Changes at Restoration Sites**
Matthew Schwartz, Paul Kolp, Alex Uber, and John Hickey
- 10:40 AM **Break**
- 11:00 AM **Salinity in the Willamette River? Seriously?!? Estuarine tales of rising seas, seismic subsidence and uncertainty**
António M. Baptista, Mojgan Rostaminia, Paul J. Turner, Tuomas Kärnä and Jesse Lopez
- 11:20 AM **Mapping the extent of West Coast tidal wetlands using extreme water level data and LIDAR**
Laura Brophy, Hiroo Imaki, Van Hare, Brett Holycross, Correigh Greene, Andy Lanier
- 11:40 AM **Tidal wetland response to changes in inundation patterns in the lower Columbia River and estuary**
Amy B. Borde, Heida L. Diefenderfer, David A. Jay, Shon A. Zimmerman, Ronald M. Thom, Amanda C. Hanson, Catherine Corbett

12:00 PM Question and Answer Period

12:10 PM **Lunch** (on your own)

Session 2: Lessons Learned in Habitat Restoration

Session Moderator: Jason Karnezis

1:30 PM **Lower Columbia River Habitat Floodplain Revegetation in a Changing Climate**
Marshall Johnson

1:50 PM **Tidal Wetland Restoration and Sea-level Rise: Native and Non-native Plant Community Seed Bank Response to Changes in Tidal Flooding and Salinity**
Sarah Kidd, Alan Yeakley

2:10 PM **Comparisons of Macroinvertebrate Structure and Availability in Reed Canarygrass and Lyngbye's Sedge Habitats**
Mary Ramirez, Jeff Cordell, and Amanda Hanson

2:30 PM **Effects of Invasive Reed Canarygrass (*Phalaris arundinacea*) on Juvenile Chinook Salmon in the Upper Columbia River Estuary**
Rachael Klopfenstein, Daniel L. Bottom, Michael Harte, and Charles A. Simenstad

2:50 PM **Break**

Session 2: Lessons Learned in Habitat Restoration (cont)

Session Moderator: Gary Johnson

3:10 PM **Predicted Impacts of Sea Level Rise to Cultural Resources**
Briecce Edwards

3:30 PM **Restoration Approach in a Tidally Influenced Tributary Floodplain: La Center Wetlands Project Modeling, Design, and Outcomes**
Caitlin Alcott, Paul Kolp, Keith Marcoe

3:50 PM **Hydraulic Response of Newly Created Marsh-Wetland Area Affected by Tidal Forcing, Upland Discharge, and Groundwater Interaction**
Hans R. Moritz, Rachel Hanna, James Burton, Chris Humphries, Barbara Cisneros, Brian Able

4:10 PM **Evaluating the Effectiveness of Constructed Beaver Dam Analogs in Recently Restored Floodplains of the Lower Columbia River Estuary**
Ava Laszlo and Curtis Loeb, PE

4:30 PM **Large Wood in Estuaries: Structure, Hydrologic and Ecological Functions, and Influence on Fish Survival**
Kim K. Jones, Daniel L. Bottom, W. Gregory Hood, Gary E. Johnson, Kirk L. Krueger, and Ronald M. Thom

4:50 PM **Effectiveness of a Channel Habitat Reconnection in Tidal Freshwater of the Columbia River: Sandy River Delta**

Gary E. Johnson and Nichole K. Sather

5:10 PM Question and Answer Period

5:30 PM – **Poster Session** (McTavish Room upstairs)
7:30 PM

May 25, 2016

- 8:00 AM **Registration**
- 8:30 AM **Welcome**
Catherine Corbett, Chair Steering Committee
- 8:40 AM **Invocation**
Tony A. Johnson, Chairman, Chinook Indian Nation

Session 3: Recent Anomalous Environmental Conditions – Drivers and Consequences

Session Moderator: Curtis Roegner

- 9:00 AM **Keynote Address – Physical Ocean Conditions and Development of “Warm blob”**
Nick Bond, Research Meteorologist, Joint Institute for the Study of Atmosphere and Ocean, University of Washington
- 9:30 AM **Keynote Address – Ecosystem Effects from Recent Ocean Conditions**
Bill Peterson, Oceanographer, NOAA Northwest Fisheries Science Center
- 10:00 AM **Anomalous hydrologic and biogeochemical conditions in the Columbia River estuary during 2014-2015**
Joseph A Needoba, Tawnya D. Peterson, Charles Seaton, Sarah F. Riseman, and António M. Baptista
- 10:20 AM Question and Answer Period
- 10:30 AM **Break**

Session 3: Recent Anomalous Environmental Conditions – Drivers and Consequences (cont)

Session Moderator: Joe Needoba

- 10:50 AM **Climate-Linked Anomalies Force Eelgrass (*Zostera marina* L.) variability in the Pacific Northwest: Recent Evidence from the Columbia River Estuary**
Ronald Thom, Amy Borde, John Vavrinec, Kate Buenau, Dana Woodruff, Curtis Roegner, Joseph Needoba
- 11:10 AM **Inter-annual variability in phytoplankton dynamics in off-channel habitats of the Columbia River estuary**
Claudia Tausz, Joseph Needoba, Michelle Maier, Whitney Hapke, Amanda Hanson, Catherine Corbett
- 11:30 AM **Invasive Species and Plankton Dynamics of the Columbia River Estuary**
Stephen Bollens, Gretchen Rollwagen-Bollens, Eric Dexter, Whitney Hassett, Jesse Adams, Alise Bowen, Julie Zimmerman, Jeffery Cordell, Olga Kalata, and Tim Counihan
- 11:50 AM Question and Answer Period
- 12:00 AM **Lunch** (on your own)

Session 3: Recent Anomalous Environmental Conditions – Drivers and Consequences (cont)

Session Moderator: Jennifer Morace

- 1:00 PM **The Ecosystem Monitoring Program: Overview and Data Synthesis, 2005-2015**
Amanda Hanson, Amy Borde, Lyndal Johnson, Tawnya Peterson, Joseph Needoba, Jeff Cordell, Catherine Corbett, Matthew Schwartz
- 1:20 PM **Juvenile Salmon Occurrence in the Lower Columbia Estuary: Ecosystem Monitoring Program Findings in an Unusual Climate Year**
Lyndal Johnson, Dan Lomax, Sean Sol, Amanda Hanson and Catherine Corbett
- 1:40 PM **Effects of the Warm ‘blob’ on May and June 2015 Juvenile Salmon in the Columbia River Plume and Nearshore Ocean**
Elizabeth A. Daly and Richard D. Brodeur
- 2:00 PM **Fine-scale spatial and stock variations among juvenile Chinook salmon and steelhead in the Columbia River Plume: May 2015**
Kym C. Jacobson, Cheryl A. Morgan, Brian R. Beckman, Brian J. Burke, Laurie A. Weitkamp, Jessica A. Miller, Donald M. Van Doornik, and Kurt L. Fresh
- 2:20 PM Question and Answer Period
- 2:30 PM **Break**

Session 4: New Understanding of the Lower Columbia River and Plume Ecosystem

Session Moderator: Carla Cole

- 3:00 PM **Stock-specific use of tidal freshwater wetlands**
Regan A. McNatt, Susan A. Hinton, Daniel L. Bottom
- 3:20 PM **Characterizing the condition of outmigrating Chinook and steelhead in the Columbia River estuary**
Kurt Fresh, Laurie Weitkamp, Don Van Doornik, Curtis Roegner, Kym Jacobson
- 3:40 PM **A Life Cycle Modeling Approach to Evaluating Population Response to Variable Life History Patterns of Coho Salmon and Alternative Restoration Scenarios in Coastal Watersheds**
Gabe Scheer, Darren Ward, Seth Ricker
- 4:00 PM **Estimation of Survival and Run Timing of Adult Spring/Summer Chinook Salmon from the Columbia River Estuary to Bonneville Dam: A Cooperative Effort Between NOAA Fisheries and Columbia River Commercial Fishermen**
A. Michelle Wargo Rub, Ben Sandford, Don Van Doornik, Brian Burke, Kinsey Frick, Mark Sorel, Matthew Nesbit, and Samuel Rambo
- 4:20 PM **Genetic Analysis of Caspian Tern (*Hydroprogne caspia*) and Double-crested Cormorant (*Phalacrocorax auritus*) Salmonid (*Oncorhynchus*) Consumption in the Columbia River Estuary 2006-2013**
David Kuligowski, Daniel Roby, Donald Lyons, Ken Collis, Allen Evans, Donald Van

Doornik, Lauren Reinalda, Laurie Weitkamp, Curtis Roegner, Tim Marcella, Peter Loschl, Kirsten Bixler and David Teel

4:40 PM **Ocean avian predation risk and early marine survival of salmon in the Columbia River Plume**

Jeannette E. Zamon, Brian Burke, Mary Hunsicker, David Teel, and Elizabeth M. Phillips

5:00 PM Question and Answer Period

5:10 PM **Adjourn**

5:30 PM – **Optional Field Visit to WDFW's Chinook River Restoration Project**
8:00 PM

8:30 AM **Registration**

9:20 AM **Welcome**
Catherine Corbett, Chair Steering Committee

Session 4: New Understanding of the Lower Columbia River and Plume Ecosystem (cont)

Session Moderator: Cindy Studebaker

9:30 AM **How extreme were 2015 water temperatures in the lower Columbia and Willamette Rivers?**
S.A. Talke and D.A. Jay

9:50 AM **Looking at Extreme Events in Historic Tide Data, 1853 to 1876**
David Jay, Stefan Talke, Drew Mahedy, and Sam Hawkinson

10:10 AM **Modeling Historic Salinity Intrusion in Lower Columbia River Estuary**
Lumas Helaire, Stefan A. Talke, David A. Jay, Drew Mahedy, Austin Hudson

10:30 AM **Break**

Session 4: New Understanding of the Lower Columbia River Ecosystem (cont)

Session Moderator: Nicole Czarnomski

11:00 AM **Can Tide/River-Flow Interactions in the Columbia River Estuary Be Observed in the Coastal Ocean?**
Edward D. Zaron

11:20 AM **Underwater video measurements of Dungeness crab (*Cancer magister*) responses to thin-layer dredged material disposal**
Stephanie Fields, Sarah Henkel, Curtis Roegner

11:40 AM **Acoustic telemetry measures of Dungeness crab movement and behavior relative to a nearshore sediment disposal site**
Curtis Roegner, Stephanie Fields

12:00 PM Question and Answer Period

12:10 PM **Lunch** (on your own)

Session 5: Innovative Technologies and New Data Products

Session Moderator: Matt Van Ess

1:30 PM **Sediment Acoustics - Real-Time Continuous Suspended Sediment Data in the Lower Columbia River**
Paul Diaz Jr, Marc A Stewart

1:50 PM **Refining the Edges of the Columbia River Eulachon Run – A New Application for Environmental DNA**

Joe Krieter, *Taal Levi*, Maria Sandercock, Andy Clodfelter, Michelle Hollis

- 2:10 PM **Monitoring Opportunities in the Estuary with Unmanned Aerial Vehicles (UAVs)**
Ian Sinks and Keith Steele
- 2:30 PM Question and Answer Period
- 2:40 PM **Closing Remarks**
- 3:00 PM **Adjourn**