

Pacific Northwest Lakes in a Changing World

Oregon Lakes Association / Washington State
Lake Protection Association Conference
DoubleTree by Hilton, Portland, Oregon,
September 26-28, 2018

Agenda overview and list of presentations



Conference Agenda at a Glance

| Day | Date | Session A | Session B | start | end |
|-----------|---------|---|----------------------------|-------|-------|
| Wednesday | 9/26/18 | Modeling workshop | | 1:00 | 4:00 |
| | | Aquatic Plant School | | 1:00 | 4:00 |
| | | Cyanobacteria workshop | | 2:30 | 5:30 |
| Thursday | 9/27/18 | Poster and vendor setup | | 7:00 | 8:30 |
| | | Registration | | 7:00 | 5:00 |
| | | Continental breakfast | | 7:00 | 8:30 |
| | | Welcome | | 8:30 | 8:40 |
| | | <i>Plenary: Daniel Schindler Climate change and water quality in western US lakes: how can we plan for an uncertain future?</i> | | 8:40 | 9:25 |
| | | 1a. Models | 1b. Aquatic Invertebrates | 9:30 | 10:10 |
| | | <i>Poster break</i> | | 10:10 | 10:30 |
| | | 2a. OR HABS Program Proposal | 2b. Climate Change | 10:30 | 12:00 |
| | | <i>Lunch/business and scholarship award presentations</i> | | 12:00 | 1:30 |
| | | 3a. Invasive Species | 3b. Mountain Lakes | 1:30 | 3:00 |
| | | <i>Poster break</i> | | 3:00 | 3:30 |
| | | 4a. Urban Lakes | 4b. Aquatic Plants | 3:30 | 5:00 |
| | | <i>Happy hour, raffle, and poster session</i> | | 5:00 | 7:00 |
| Friday | 9/28/18 | <i>Continental breakfast</i> | | 7:00 | 8:30 |
| | | 5a. Toxics | 5b. Outreach and Education | 8:30 | 10:00 |
| | | <i>Poster break</i> | | 10:00 | 10:30 |
| | | 6a. Dryland Lakes | 6b. Miscellaneous | 10:30 | 12:00 |
| | | <i>Ross Island Field Trip</i> | | TBD | TBD |

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OLA/WALPA Joint Conference, September 26-28, 2018, DoubleTree by Hilton, Portland, Oregon

Presentation overview, Thursday, September 27, 2018

| Time | Session name | Presentation (presenter) |
|---------------|----------------------------------|---|
| 8:40 – 9:25 | Plenary | Climate change and water quality in western US lakes: how can we plan for an uncertain future? <u>Daniel Schindler</u> , Professor, School of Aquatic and Fishery Sciences, University of Washington, Seattle. |
| 9:30 - 10:10 | 1a. Modeling | A statistical model of zooplankton community dynamics in the heavily invaded Columbia River Estuary. <u>Eric Dexter</u> , Stephen Bollens, Stephanie Hampton, Steve Katz, and Gretchen Rollwagen-Bollens. Washington State University - <i>Student presentation</i> . |
| | | Matching methods, monitoring, and modeling to the lakes that need them. <u>Richard A. Wildman</u> and Robert L. Annear. Geosyntec Consultants |
| | 1b. Aquatic Invertebrates | Macroinvertebrate communities and ecological assessment of riverine lowland lakes. <u>Oliver Miler</u> , Northwest Indian Fisheries Commission; Magdalena Czarnecka, Faculty of Biology and Environmental Protection, Nicolaus Copernicus University Toruń, Poland; and Mario Brauns, Helmholtz Centre for Environmental Research, Magdeburg, Germany |
| | | The life history and dietary habits of the caddisfly <i>Nectopsyche albida</i> in Coeur d'Alene Lake, ID, with a focus on predation on invasive Eurasian milfoil. <u>Stephanie Estell</u> , Ben Scofield, and Frank Wilhelm. University of Idaho - <i>Student presentation</i> . |
| 10:30 – 12:00 | 2a. Climate Change | Overview of climate landscape for Oregon and Washington, trends and future projections. <u>Megan Dalton</u> , Oregon Climate Change Research Institute, Oregon State University. |
| | | Climate change and the National Wildlife Refuge System in the Pacific Northwest. <u>Tim Mayer</u> , US Fish and Wildlife Service |
| | | Legal challenges related to water in the face of climate change. <u>Lisa Brown</u> and <u>John DeVoe</u> , WaterWatch of Oregon |
| | 2b. Oregon HABs Program Proposal | Harmful Algal Bloom panel discussion with Theo Dreher, Oregon State University; Wayne Carmichael, Professor Emeritus, Wright State University; Joan Hardy, Washington State Dept. of Health; Aaron Borisenko, OR Dept. of Environmental Quality; Dave Farrer and Rebecca Hillwig, OR Health Authority; Pete Schreder, Oregon State University Extension; Gwen Bury, Oregon State University; Jason Pulley, City of Salem, and others |
| 1:30 – 3:00 | 3a. Invasive Species | Using landscape genetic approaches to uncover dispersal and genetic diversity patterns in a large hydrologic project in the American West. <u>Crysta A. Gantz</u> and Angela L. Strecker. Portland State University - <i>Student presentation</i> . |
| | | Oregon Invasive Species Council - Statewide Strategic Plan. <u>Glenn Dolphin</u> - 2018 Chairperson and Jalene Littlejohn - Council Coordinator. Oregon Invasive Species Council |
| | | Engaging youth and adult learners with crayfish citizen science. <u>Jim Ekins</u> , Kim Holzer, Rick Reynolds, Janice Elvidge. University of Idaho |
| | | Washington's Statewide Strategic Plan for Invasive Species. <u>Brianna Widner</u> , Justin Bush, Raymond Willard, Patrick Stevenson, William Tweit, and others. Washington Invasive Species Council |
| | | Biodiversity in ponds of the southern Andes of Ecuador across an urban-rural gradient. <u>Beth Hoots</u> , <u>Carly Scott</u> , and Frank Wilhelm, University of Idaho; Carlos Iñiguez Armijos, Universidad Técnica Particular de Loja, San Cayetano Alto |

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Presentation overview, Thursday, September 27, 2018

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| 1:30 – 3:00 | 3b. Mountain Lakes | From fish to forests: mercury in mountain lake food webs influenced by variables at multiple scales. <u>Ariana Chiapella</u> and <u>Angela Strecker</u> , Portland State University; <u>Collin Eagles-Smith</u> , US Geological Survey - <i>Student presentation</i> . |
| | | Mountain lakes fishery management in North Cascades National Park. <u>Ashley Rawhouser</u> and <u>Carmen Archambault</u> , National Park Service |
| | | The role of logmat biofilm in energy and nutrient cycles at Spirit Lake. <u>Emma Sevier</u> and <u>Kena Fox-Dobbs</u> , Geology Department, University of Puget Sound; <u>Jim Gawel</u> and <u>Jeremy Davis</u> , University of Washington – Tacoma; <u>Avery Shinneman</u> , University of Washington – Bothell. - <i>Student presentation</i> . |
| | | Primary Succession and Community Assembly in Ponds Created by the Mount St. Helens Eruption. <u>Angela L. Strecker</u> and <u>Meredith Holgerson</u> , Portland State University; <u>Charlie Crisafulli</u> ; and <u>James Gawel</u> , University of Washington, Tacoma |
| | | Zooplankton community structure in Pacific Northwest mountain lakes: trends and potential climate impacts. <u>Steven C. Fradkin</u> , <u>Rebecca Lofgren</u> , <u>Ashley Rawhouser</u> , <u>Bill Baccus</u> , <u>Carmen Welch</u> , <u>Ben Wright</u> . National Park Service |
| 3:30 – 5:00 | 4a. Urban Lakes | Definition and identification of urban lakes for inventory and management optimization. <u>Laura Costadone</u> and <u>Mark Sytsma</u> . Portland State University - <i>Student presentation</i> . |
| | | Beyond eutrophication: Vancouver Lake, WA, USA as a model system for assessing interacting biotic and abiotic drivers of harmful cyanobacterial blooms. <u>Gretchen Rollwagen-Bollens</u> , <u>Tammy Lee</u> , <u>Vanessa Rose</u> , <u>Julie Zimmerman</u> , and <u>Stephen Bollens</u> , Washington State University Vancouver |
| | | The challenge of managing patchy toxic cyanobacteria blooms in a popular urban lake. <u>Debra Bouchard</u> , <u>Chris Knutson</u> . King County |
| | | Floating wetlands for bulkhead impact mitigation in urban lakes. <u>Rob Zisette</u> . Herrera Environmental Consultants |
| | 4b. Aquatic Plants | Overview of aquatic weed and algae management practices. <u>Doug Kleweno</u> . Cygnet Enterprises |
| | | Dye tracing surveys with consumer-grade drones to estimate water and nutrient exchange between a littoral wetland and adjacent lake. <u>Frank M. Wilhelm</u> . Univ. of Idaho Dept. Fish and Wildlife |
| | | Assessment of the aquatic plant community and water quality status in Willamette River side channels and oxbows infested with <i>Ludwigia</i> spp. <u>Kurt Carpenter</u> and <u>David Weathers</u> , US Geological Survey; <u>Rich Miller</u> , Portland State University |
| | | Using eDNA to detect and monitor aquatic invasive plants in lakes. <u>Lauren Kuehne</u> and <u>Julian Olden</u> University of Washington, Seattle |

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Presentation Overview, Friday, September 28, 2018

| Time | Session name | Presentation |
|---------------|----------------------------|---|
| 8:30 – 10:00 | 5a.Toxics | Is stormwater harming our streams? Long-term monitoring of metals in wet-weather streamflow. <u>Daniel A. Nidzgorski</u> , James M. Grassley, Deborah Lester, and Debra Bouchard, King County Water & Land Resources Division |
| | | Arsenic cycling and ecosystem health in urban lakes: A Puget Sound case study. <u>Erin Hull</u> and Jim Gawel. University of Washington Tacoma |
| | | Using Less Copper to Get Harmful Algae Blooms Under Control. <u>Patrick Simmsgeiger</u> , Diversified Waterscapes, Inc. |
| | | Toxic lead exposure commonly associated with fishing methodologies utilizing lead sinkers and lead boat anchors. <u>Ray Kinney</u> , Director for water quality, Siuslaw Soil and Water Conservation District |
| | 5b. Outreach and Education | The King County Lake Stewardship Program: An Overview Of King County’s Volunteer Lake Monitoring Effort. <u>Chris Knutson</u> . King County Department of Natural Resources and Parks |
| | | Engaging Youth and Adult Learners with Crayfish Citizen Science. <u>Jim Ekins</u> , Kim Holzer, Rick Reynolds, Janice Elvidge. University of Idaho |
| | | LakeWise – Can outreach really change behaviors to reduce phosphorus pollution? <u>Marisa Burghdoff</u> , Peggy Campbell, and Katie Ruthenberg, Snohomish County Surface Water Management; Jessica Branom-Zwick, Cascadia Consulting Group. |
| | | What is that slime in my water? <u>Robin Matthews</u> and Geoffrey Matthews, Western Washington University |
| 10:30 – 12:00 | 6a. Dryland Lakes | An Introduction to Pacific Northwest Dryland Lakes. <u>Ron Larson</u> . |
| | | The Flora of shallow Basin and Range lakes in southeastern Oregon and northwestern Nevada during dry and wet years. <u>Dennis A. Albert</u> . Oregon State University |
| | | Ecological and physical changes observed at Lake Abert between 1979 and 2014 by Oregon Desert Brine Shrimp Co. and the future of a commercial fishery on the lake. <u>Keith Kreuz</u> , Oregon Desert Brine Shrimp Co. |
| | | Freshwater Lakes of Arid Oregon: A Report on Colvin Lake and White Pine Marsh. <u>Chantel V. Saban</u> . U of O Environmental Change Research Group - <i>Student presentation</i> . |
| | 6b. Miscellaneous | Dexter Reservoir Water Quality Research and Modeling. <u>Chris J. Berger</u> , Scott A. Wells, Rich Miller, Mark Sytsma, Angela Strecker, and Corina Overman. Portland State University. |
| | | Nutrients, bloom formation and zooplankton dynamics in upper Willamette Basin Reservoirs. <u>Christina A. Murphy</u> , Sherri L. Johnson, Allison Evans, Ivan Arismendi. Oregon State University - <i>Student presentation</i> . |
| | | Toxic Cyanobacteria Management of a Eutrophic Lake in a Forested Watershed: Heart Lake Alum Treatment. <u>Rebecca Dugopolski</u> , PE, and Rob Zisette Herrera Environmental Consultants. |
| | | Vertical distribution of cyanobacteria toxins in Willow Creek Reservoir, OR. <u>Sarah H. Burnet</u> and Frank M. Wilhelm. University of Idaho - <i>Student presentation</i> . |
| | | Anabaena/Dolichospermum as the source of microcystin responsible for a large cattle toxicosis event. <u>Theo W. Dreher</u> , Lindsay P. Collart, Ryan S. Mueller Kimberly H. Halsey, and Robert J. Bildfell, Oregon State University; Peter Schreder, Oregon State University Extension Service, Lakeview, OR; Arya Sobhakumari, California Animal Health and Food Safety Laboratory, Davis CA; and Rodney Ferry, Lakeview Animal Hospital, Lakeview, OR |

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Poster Presentations, September 27-28, 2018

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| <p>Arsenic uptake in crayfish and snails from ASARCO impacted lakes in Western Washington. <u>Marco Barajas</u>, Ricky Pendergrass, Suji Kim, and James Gawel, University of Washington Tacoma. - <i>Student presentation.</i></p> |
| <p>Feeding rates and prey selection of the invasive Asian clam, <i>Corbicula fluminea</i>, on microplankton in the Columbia River, North America. <u>Benjamin A. Bolam</u>, Gretchen Rollwagen-Bollens, Stephen M. Bollens, Carol Sandison and Julie Zimmerman. Washington State University Vancouver</p> |
| <p>Arsenic uptake in submerged macrophytes and periphyton in contaminated lakes in the Puget Sound region. <u>Kenneth Burkart</u>, Erin Hull, Jim Gawel. University of Washington Tacoma - <i>Student presentation.</i></p> |
| <p>Chemical composition of sediment contributions from floating logs on Spirit Lake. <u>Joseph Meyer</u>, and Jim Gawel, University of Washington Tacoma; Emma Servier and Kena Fox-Dobbs, University of Puget Sound- <i>Student presentation.</i></p> |
| <p>Do Nutrients Limit Phytoplankton Growth in the Columbia River? <u>Alixandra Coker</u>, Dr. Stephen Bollens, Dr. Gretchen Rollwagen-Bollens. Washington State University - Vancouver, Aquatic Ecology</p> |
| <p>Partnerships with local high schools enable zooplankton research in the Columbia River Estuary. <u>Kristin Connelly</u>, Gretchen Rollwagen-Bollens, Tamara Holmlund, Stephen Bollens, and Julie Zimmerman. Washington State University Vancouver - <i>Student presentation.</i></p> |
| <p>Exploring a novel potential link between cyanobacterial blooms and methane emissions in lakes. <u>Sofia D'Ambrosio</u> and John Harrison. Washington State University Vancouver - <i>Student presentation.</i></p> |
| <p>The impact of floating woody debris on invertebrate communities in Spirit Lake. <u>Chris Grysho</u>, <u>Tryce Ouhl</u>, Jeremy Davis, Jim Gawel, Kena Fox Dobbs, and Avery Shinneman, University of Washington Tacoma - <i>Student presentation.</i></p> |
| <p>Examination of arsenic accumulation in benthic midge larvae (<i>Chironomus cloacalis</i>) in post-ASARCO smelter contaminated lakes. <u>Noelle Hogan</u> and <u>Jim Gawel</u>. University of Washington Tacoma - <i>Student presentation.</i></p> |
| <p>Weather and the 2007 Blue-green Algal Bloom in Siltcoos Lake, Lane and Douglas Counties, Oregon. <u>Stephen Hager</u>.</p> |
| <p>Waves of phosphorus: resuspension and release. <u>Abigail Hale</u> and Frank Wilhelm, University of Idaho. - <i>Student presentation.</i></p> |
| <p>Temporal and spatial variations in the growth rate of <i>Corbicula fluminea</i> in the Columbia River. <u>Summer Henricksen</u>, Stephen Bollens, Gretchen Rollwagen-Bollens, and Julie Zimmerman. Washington State University Vancouver Aquatic Ecology Lab - <i>Student presentation.</i></p> |
| <p>The hunt for arsenic re-mobilization in candidate shallow lakes downwind of the ASARCO smelter. <u>Phillip Hite</u> and James Gawel. University of Washington, Tacoma. - <i>Student presentation.</i></p> |
| <p>The Lake Abert Ecosystem: its Past and Future. Ron Larson.</p> |
| <p>Thermal acclimation of freshwater phytoplankton species, <i>Chlamydomonas reinhardtii</i> and <i>Microcystis aeruginosa</i>, and the implications for their response to climate warming. <u>Tamara Layden</u>, Maeve Kolk, Colin Kremer and Sam Fey, Reed College.</p> |
| <p>Quantifying Nutrient Loading Responsible for Hazardous Algal Blooms in Spanaway Lake, Spanaway Washington. <u>Jack Lindauer</u>. University of Puget Sound - <i>Student presentation.</i></p> |
| <p>Algal Contributions to Nitrogen Flow in Spirit Lake. <u>Angelica Lucchetto</u>, Rachel Liu, and Avery Cook Shinneman, Ph.D., University of Washington - Bothell; James Gawel, Ph.D., University of Washington – Tacoma - <i>Student presentation.</i></p> |
| <p>Invasive species early detection and rapid response efforts in Oregon. <u>Rich Miller</u>, Mark Sytsma, Angela Strecker, and Crysta Gantz. Portland State University</p> |
| <p>Diverse taxa of zooplankton inhabit hypoxic waters during both day and night in a temperate eutrophic lake. <u>Sean Nolan</u>, Gretchen Rollwagen-Bollens, and Stephen Bollens. Washington State University - <i>Student presentation.</i></p> |
| <p>Development and limitations of artificial substrate periphyton monitoring in Coeur d'Alene Lake, Idaho. <u>Randi Notte</u>, Frank Wilhelm and Craig Cooper. University of Idaho - <i>Student presentation.</i></p> |

OLA/WALPA Joint Conference, September 26-28, 2018, DoubleTree by Hilton, Portland, Oregon

Poster Presentations, September 27-28, 2018 (continued)

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| Community-based aquatic weed control at Shadow Lake, WA. <u>Ben Peterson</u> . King County Noxious Weed Program. |
| Run-of-river dams in the Columbia River: Effects of impoundment and spill on phytoplankton communities. <u>Vanessa Rose</u> , Stephen M. Bollens, and Gretchen Rollwagen-Bollens. Washington State University - <i>Student presentation</i> . |
| The thermal tolerance of freshwater zooplankton in lakes of the Sandy River Basin. <u>Margaret Slein</u> and Sam Fey. Reed College - <i>Student presentation</i> . |
| Using field and benchtop fluorometric measurements of chlorophyll and phycocyanin to detect toxic cyanobacteria blooms in Wiser Lake, Washington. <u>Kris Staples-Weyrauch</u> , Michael Hilles, and Robin Matthews. Institute for Watershed Studies, Huxley College of the Environment, Western Washington University - <i>Student presentation</i> . |
| A comparison of community structure in regulated and unregulated reaches in the Upper Eel River, CA. <u>Lara Jansen</u> and Alison O'Dowd, Department of Environmental Science & Management, Humboldt State University; Darren Ward and Margaret Wilzbach, Fisheries Biology, Humboldt State University - <i>Student presentation</i> . |