LAKE WISE

... a voice for quiet waters

NEWSLETTER FROM OREGON LAKES ASSOCIATION

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Theo Dreher, Newsletter Editor

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Chief Joseph Mountain overlooking Wallowa Lake
Photo: Theo Dreher, October, 2022

Conference Report

October 2022 OLA Conference at Wallowa Lake Lodge Co-hosted with the Nez Perce Department of Fisheries Resources Management

Our first in-person conference since 2019 was held at the Wallowa Lake Lodge in collaboration with the Nez Perce Department of Fisheries Resources Management. The lodge had closed its normal season, which allowed us to have the run of the building for presentations, accommodation, socializing, and dining. Located on the forested shore of the lovely lake during the last sunny week of the season, the circumstances were magical.

Friday's program was focused on efforts to return sockeye salmon runs to lakes in Oregon (Suttle Lake and Wallowa Lake), Washington (Cle Elum Lake) and Idaho (Redfish Lake). Sockeye reintroduction to Wallowa Lake is a major goal of the Nez Perce Tribe. Tribal ethnographer Nakia Williamson gave an eloquent description of the central role that the Wallowa Valley and the sockeye runs played until the forced removal of the tribe by incoming settlers.

Anadromous sockeye runs 24-30,000-strong are estimated to have existed prior to 1900, but by 1904 the runs were extinct in the lake, due to a combination of over-harvesting, installation of stream blockages, and mistaken understanding of sockeye biology (Cramer & Witty, 1998). Kokanee salmon, the sockeye's lake-bound relative, have remained in the lake, although stocking with kokanee from surrounding states occurred during the 1960's in order to buttress the failing local population. Kokanee have remained abundant since the 1980's, and we were able to witness spawning kokanee in a braid of the Wallowa River just outside the lodge (see photo). Among the uncertainties that make the reintroduction a challenge is debate about the exact relationship between sockeye and kokanee, and whether kokanee could be expected to regain an anadromous sockeye-type lifestyle, as some people believe.

Kokanee in Wallowa River beside the lodge, just upstream of the lake. Underwater photo: Richard Litts.

The keynote lecture on Friday night was delivered by Courtney Crowell, the Coordinator with the Governor's Northeast Regional Solutions Center. Courtney was the mediator who presided over wide-ranging discussions encompassing the need for costly imminent repairs to Wallowa Lake dam, habitat improvements for salmon and riverine ecological restoration, and irrigation needs of Wallowa valley farmers. The resulting Memorandum of Agreement, undoubtedly facilitated by skillful mediation, is a commitment for state support to stabilize and slightly raise the unsafe dam, which has been owned by irrigators. Dam rehabilitation will include fish passage, key to reintroducing sockeye to the lake. In return, ODFW required that up to 5000 acre-ft of water from the lake be made available each year for release to the river. Importantly, this new water allocation now has senior rights, and, further, will allow some distribution to nearby streams with irrigation rights that deplete late-summer streamflows. ***What a win for the environment!*** In mid-November, Oregon's senators announced $5M in federal funding to support this project.

Wallowa Dam tour: Jim Harbeck (Nez Perce Fisheries) & Wallowa Lake Irrigation District directors.

Friday afternoon field trips were boat rides on the ~3.5 mile-long lake that lies between its spectacular lateral moraines, and a tour of the dam led by directors of the Wallowa Lake Irrigation District. These ranchers were highly supportive of the agreement and were grateful that the collaborative discussions brought together farmers, environmentalists and Nez Perce Tribal interests.

The Saturday session featured a range of talks and posters discussing issues such as cyanobacterial blooms; Oregon's playa lakes; preventing aquatic invasives; predicting the effects of removing the lower Klamath River dams; gas releases (ebullition) from lakes, especially in areas with volcanic activity; installing solar panels on lakes or reservoirs for electric generation; the recently released results of the 2017 national lakes survey; successional changes in ponds created by the Mt. St. Helens eruption; Nez Perce Tribe activities in the Wallowa region in support of healthy fish populations.

Boat tour of Wallowa Lake. Ed Rudberg, Judi Saam, Nick Tufillaro, Theo Dreher & ODFW guides.

Conference session in the Wallowa Lake Lodge dining room: Andy Schaedel & Richard Litts in foreground.

Slide sets and recordings of both conference days will be posted to the OLA website.

OLA would like to thank Jim Harbeck and the Nez Perce Tribe Department of Fisheries Resources Management for co-sponsoring the conference, and the staff of Wallowa Lake Lodge for being fantastic hosts.

Klamath dam removals receive final approval
Decommissioning activities to commence 2023

Desiree Tullos, Oregon State University & OLA Director

On November 17th, the Federal Energy Regulatory Commission (FERC) found the "surrender of the Lower Klamath Project license and removal of the project to be in the public interest and grant the Renewal Corporation's surrender application, subject to terms and conditions and acceptance of the license transfer."

This historical decision reflects a final milestone in what will be the largest dam removal and river restoration project in history. While ultimately a financial decision by PacifiCorp to unload infrastructure with an increasing financial burden and liability, the dam removals were galvanized by nearly 30 years of advocacy by Yurok and Karuk Tribes. The nearly $500M project will remove four dams on the Klamath River and address harmful algal blooms, modified flows, blocked fish passage, fish disease risk, and a host of other issues associated with the reservoirs. The project also includes significant activities for monitoring the river during dam removal and restoration of the reservoir reach following dam removal.

Decommissioning activities will involve site access, outlet modifications, and removal of the smallest dam (Copco II) during summer of 2023. Prior to January 2024, the remaining three reservoirs will be drawn down to normal low pool. On January 01, these reservoirs will be further lowered through the historical low pools at rates of 1 - 10 ft/day at different reservoirs, which is when reservoir erosion and sediment concentrations in the lower river are expected to peak. Drawdown will occur during winter months to facilitate rapid flushing of ~15M cy of nutrient-rich sediments from the reservoirs with elevated winter and spring flows. Details of the final design can be found on the Klamath River Renewal Project website.

Researchers have been coordinating to install sensors and make measurements of the river to document ecosystem changes during dam removal and to identify the next steps for recovering the ecosystem beyond dam removal. The project is catalyzing new science and new collaborations, with the expectation that dam removal is a big step, but not the only step, towards a sustainable Klamath River and Klamath communities.

Iron Gate Reservoir during the summer algal bloom (Source: Jake Marquez

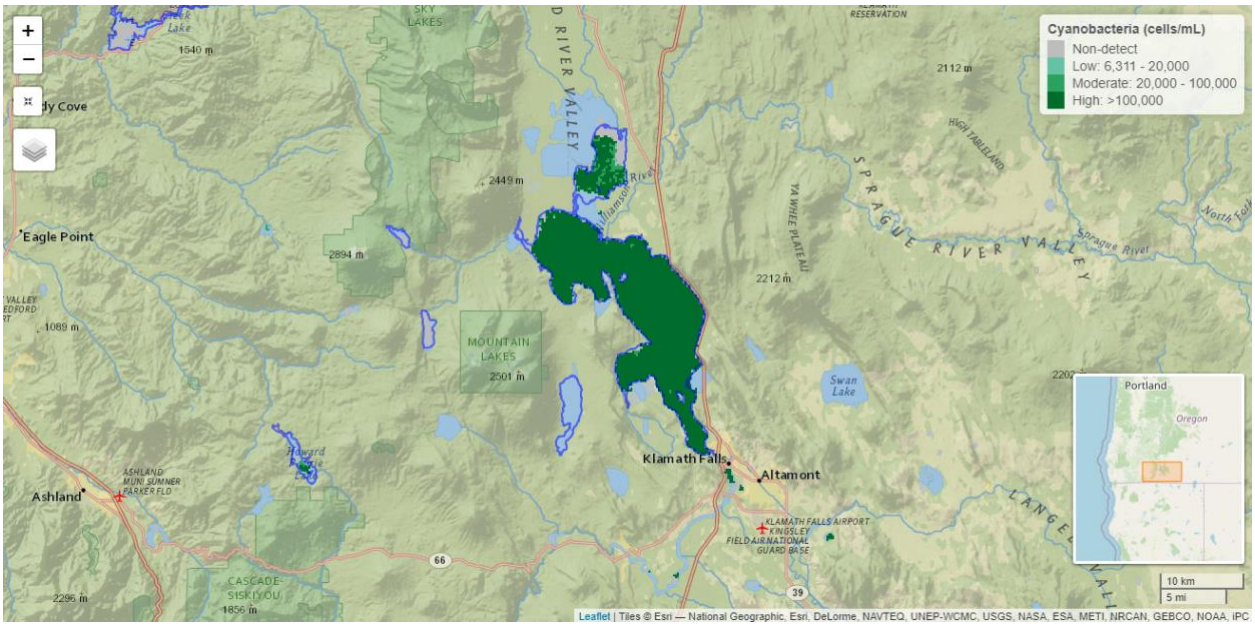
Introducing a web-based application for detecting and monitoring cyanobacterial blooms in Oregon lakes and reservoirs.

Daniel Sobota, Yuan Grund, and Erin Costello
Oregon Department of Environmental Quality

The Oregon Department of Environmental Quality (DEQ) has developed a website that downloads and displays satellite images of cyanobacteria for large lakes and reservoirs in Oregon. Released in the spring of 2022, the tool represents a significant improvement in how lake managers and the general public receive information about potentially harmful algal blooms across the state.

DEQ developed the website as a cost-effective way to rapidly detect and examine cyanobacteria blooms in large waterbodies across Oregon. For each week from March through October, images from the Sentinel 3 satellites are downloaded and processed from NASA with methods consistent with the U.S. Environmental Protection Agency's CyAN project. The Oregon-specific website displays the seven-day average daily maximum cell count for each waterbody and flags those that have counts >100,000 cells/mL according to World Health Organization guidelines. For flagged waterbodies, DEQ reaches out to regional managers to encourage collection of on-the-ground information as a basis for recommending additional water quality sampling. Time series data (from 2016 onward) of cyanobacteria cell counts for specific waterbodies are also available to view and download on the website.

The tool can be accessed here. The image shows cyanobacterial distribution in Upper Klamath Lake.



Keeping our lakes free of pesticides
Renewal of DEQ 2300A Pesticide General Permit

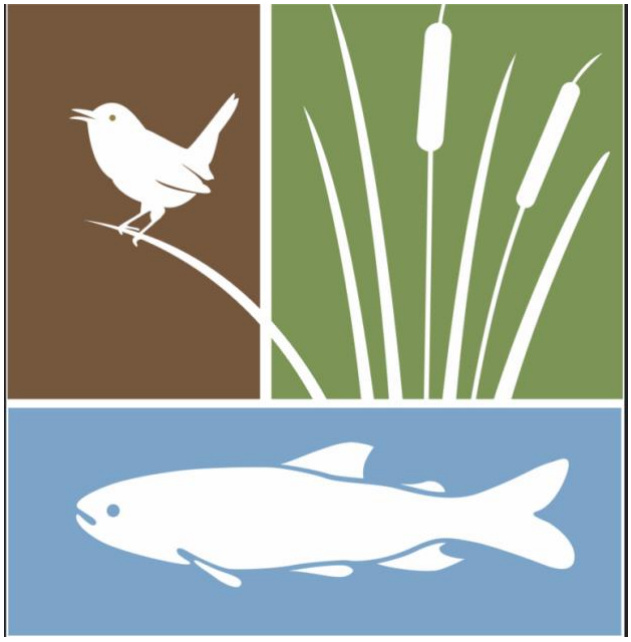
Beth Moore, Water Quality Specialist, OR Department of Environmental Quality

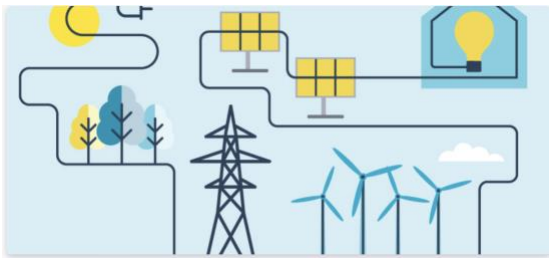
The Oregon Department of Environmental Quality's Water Quality Division has renewed its 2300A pesticide general permit. The permit, officially known as a National Pollutant Discharge Elimination System permit, provides coverage for pesticide applications under a wide variety of pest control categories that typically reach water. Examples of treatment objectives include insect control, plant and animal control, conservation, habitat

restoration, recreational and economic management. Any pesticide applied in, over or near water requires a permit. This water quality permit is one part of DEQ's approach to reducing pesticide impacts to waters of the state.

Permit coverage is required of operators, such as a property owner, a government organization, an entity that pays for and oversees a project. For example, operators can include weed control districts, vector control districts, golf courses, lake and marina managers, public utilities and federal, state and municipal agencies that apply pesticides in, over or near water.

While the permit covers a great variety of entities, most property owners or businesses with small-scale pest control needs are not required to register, pay fees or provide annual reports to DEQ. The pesticide registration and reporting requirements affect government agencies, some weed and vector control districts and large-scale pesticide treatments. Those applying pesticides to a much smaller acreage won't need to register and report to DEQ but are still required to keep a copy of the permit and follow its basic requirements. Basic requirements include minimizing a pesticide discharge, following pest management measures, maintaining records, and providing notifications when appropriate.





Changes among OLA Board of Directors

Lara Jansen. Outgoing Student Director & Secretary

Lara stepped down from the board in October, after serving as the Student Director for two years. For the last year, she served as Secretary. Lara's active participation and student perspective was greatly appreciated. In the last year, she helped to organize the 2022 Oregon CyanoHABs Stakeholder meeting and demonstrated field microscope visualization of CyanoHABs at our July event at Suttle Lake.

Lara expects to finish her PhD work studying Cascade Range lakes in summer 2023. Thanks and hope to see you around Oregon's lakes, Lara!

Ivan Arismendi, Director 2022-24

Dr. Arismendi is an aquatic ecologist and Associate Professor at Oregon State University. Growing up in southern Chile, his interest for aquatic ecology was sparked as he witnessed the invasion of trout and salmon in his native waters. He leads scientific research focused on global environmental change, invasion biology, and aquatic food webs. He is also interested in the people who use or study natural resources, which has led to emergent research on diversity, equity, and inclusion in science. To date, Ivan has published 94 peer-reviewed articles and book chapters and has received various awards, including the "Savery Outstanding Young Faculty Award" from the College of Agricultural Sciences at OSU and the Emmeline Moore Prize from the American Fisheries Society (AFS), a career achievement award that recognizes efforts in the promotion of demographic diversity in AFS.

Katey Queen, Student Director 2022-23

Katey is a M.Sc. candidate in Environmental Science at Western Washington University in Bellingham and current recipient of the OLA graduate student scholarship. She is studying under Dr. Angela Strecker at the Institute for Watershed Studies. Katey graduated in 2020 with a BS in Biology from UW-Bothel, where she carried out research on plant community assemblages and successional changes in the blast zone of Mount St. Helens National Volcanic Monument. She observed the debris-avalanche created ponds formed from the massive landslide following the eruption in 1980 and began to question how the aquatic communities were evolving in this heavily disturbed landscape. Katey's current research aims to investigate the terrestrial-aquatic linkages, climate change effects, and succession in this ecosystem using zooplankton community changes as a bioindicator. Katey hopes to increase the visibility of OLA, expand student engagement in the association's goals, and promote lake stewardship.

OLA committees and activities: opportunities to help

Below is a list of active OLA committees and activities the OLA Board is planning for 2023. You don't have to be a Board member to participate. We'd love and appreciate help from OLA members.

Check out OLA's activities and contact anyone you know on the board or theo.dreher@oregonstate.edu if you'd like to become involved or learn more about any activity.

- CyanoHABs Stakeholder meeting: Theo Dreher, Dan Sobota
  - Meeting is tentatively set for late March at OSU with a Zoom option.
- Annual fall meeting: Randy Jones, Tammy Wood, Desiree Tullos, Dan Sobota
  - Being planned for OSU campus, Corvallis, ~October 2023, with a Zoom option.
- Lake Appreciation event: Randy Jones, July 2023
- Lake Abert Colloquium: Theo Dreher, Ron Larson
  - Half-day Zoom colloquium, ~late January (look for notification)
- Lake Abert Conservation Committee: Trish Carroll, Theo Dreher, Ron Larson, Tammy Wood, Joe Eilers, Amy Simpson,
- Scholarship and Outreach Committee: Andy Schaedel, Dan Sobota, Lori Campbell, Wayne Carmichael, Stephen Willie
- Lake Wise newsletter (May, September, December): Theo Dreher, Randy Jones
- Social media: Katey Queen
- Website Committee: Toni Pennington, Dan Sobota

Langdon Lake, Tollgate, Blue Mountains, eastern Oregon. Photo: Theo Dreher, Oct 2022

The Oregon Lakes Association Mission

OLA, a non-profit organization founded in 1990, promote the understanding, protection, and thoughtful management of lakes and watersheds in Oregon. To fulfill this mission, OLA holds lakes conferences and workshops, publishes the Lake Wise newsletter, advocates for lakes in the legislative arena, and offers graduate student scholarships. OLA strives to be a diverse, inclusive, and welcoming community for all members, students, event participants and community partners. We encourage participation by all regardless of age, culture, disability, ethnicity, gender, national origin, color, race, religion, sexual orientation and socio-economic status. OLA recognizes a diversity of perspectives is important to tackle the complex issues facing Oregon's lakes and watersheds. Serving entirely through volunteer efforts, the Oregon Lakes Association puts on an annual conference, publishes a tri-annual newsletter, sponsors Harmful Algal Bloom trainings, and works as an advocate for lakes in the legislative arena. For additional information on OLA, write to the address above, or visit our website

OLA and *Lake Wise* welcome submissions of materials that further our goals of education and thoughtful lake management in Oregon. OLA is grateful for corporate support that helps sustain the organization. Corporate members are offered the opportunity to describe their products and services to *Lake Wise* readers. These descriptions are not OLA endorsements and opinions appearing in *Lake Wise* are not OLA policy statements.

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