Welcome to the 2024 Annual Meeting of the Pacific Northwest Chapter of the Society for Freshwater Science! The PNW Chapter began as the Northwest Biological Assessment Workgroup, a collaborative effort between State, Federal, Tribal, and academic bioassessment professionals in 1990. This year marks our 34th annual gathering of regional scientists advancing the understanding and practice of freshwater science in the Pacific Northwest.

A big thank you to our 2024 meeting Sponsors!

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To increase accessibility, this is a hybrid meeting with in-person and virtual access. Zoom links are provided below. You can connect with us outside of the meeting via our [website](https://freshwater-science.org/my-sfs/chapters/pacific-northwest), [Facebook](https://www.facebook.com/PNWChapterSocietyforFreshwaterScience), [Instagram](https://www.instagram.com/pacificnorthwestsfs/), and [Linked In](https://www.linkedin.com/groups/13830773/) accounts. To facilitate participation in meetings by student and early career scientists, the chapter provides travel awards to help offset attendance costs. To support future scholarships, please check-out items available in the silent auction (in-person only, closes Thursday at noon, cash or check please). Thank you for your continued support and contributions to the PNW Chapter!

This year marks the 50th anniversary of the Boldt Decision, a landmark lawsuit that reaffirmed treaty fishing rights in Washington State. Our opening plenary address from David Troutt (Natural Resources Director for the Nisqually Tribe) will discuss the history of this Decision and implications influencing today’s policy and management. In the afternoon, we will hear a keynote address on the state of bioassessment science from Charles (Chuck) Hawkins (National Aquatic Monitoring Center, Utah State University), one of the founders of current freshwater macroinvertebrate bioassessment methods. On the 2nd day, we will have a special session on ecosystem responses following the Elwha and Klamath dam removals. That afternoon there is a workshop on the use of drones in freshwater science (including an outside demonstration if the weather is decent) provided by experts from HDR Engineering, Inc.

The poster session and evening social will be at The Uptown Grill from 5:30 – 8:00 pm on Wed Oct. 23rd. The Uptown Grill is located 1 block north of the Red Lion Inn on Capitol Way S between 5th Ave SW and Legion Way SW. Posters should be set up Wednesday 5-5:30 pm in the event room of the restaurant (room to right after walking in the front door) with painter’s tape (provided).

The PNW Chapter would not exist without the efforts of a volunteer steering committee. Please consider becoming a member of the committee. We meet virtually, approximately monthly and your level of contribution is up to you. Thank you!

**2024 steering committee:** Shannon Claeson (President), David Wooster (Secretary), Oliver Miler (Treasurer), Mindy Allen, Alex Bell, Bob Danehy, Jessie Doyle, Barbara Hayford, Chad Larson, Zee Searles Mazzacano, Dorene McCoy, Francine Mejia, Rob Plotnikoff, and Emily Washburne.

Red Lion Inn/Governor Hotel, 621 Capitol Way S, Olympia, WA 98501

Parking is $6/day for non-hotel guests, or free for meeting attendees (ask for a parking pass at the front desk).

Directions from I5-North:

Take exit 105 toward State Capitol/City Center onto 14th Ave SE.

Take the 2nd exit from roundabout onto 14th Ave SE.

Turn right onto Capitol Way S.

Directions from I5-South:

Take exit 105 toward State Capitol/City Center onto 14th Ave SE.

Take the 2nd exit from roundabout onto 14th Ave SE.

Turn right onto Capitol Way S.

The above directions will have you enter the upper, open parking lot. There is also a lower parking lot that you can access from Columbia St SW. Upon entering the lower parking lot, you will see an entrance on the back wall of the parking lot. There are steps and a small ramp, when you get to the entrance door, push the button that is to the right of the door, this will alert the front desk that you have arrived, and they will buzz you through. (The buzz is not very loud) Go to the elevator, push level 1 and the front desk is around the corner to the right.

**ZOOM CONNECTION INFORMATION**

October 23rd Zoom link

<https://oregonstate.zoom.us/j/94545652956?pwd=NiH49zwpppsWwz60aodU6sNmsjOap0.1>

October 24th Zoom link

<https://oregonstate.zoom.us/j/92631127344?pwd=9ZD6xysb6E0XMUycjdCFDtReF1b0O5.1>

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| **Wednesday October 23rd, 2024** | | |
| **Time** | **Topic/Title** | **Speaker** |
| 8:00 AM | Registration | PNW Chapter committee |
| 8:30 AM | Welcome and opening remarks | **Shannon Claeson** (Forest Service PNW Research Station) |
| 8:45 AM | Plenary | **David Troutt** (Natural Resources Director, Nisqually Tribe) |
| 9:35 AM | *Break (5 min.)* | |
| **Session: Fish passage** | | |
| 9:40 AM | WSDOT fish passage delivery program: protecting and restoring salmon runs | **Elizabeth Winter** (WSDOT) |
| 10:00 AM | Culvert replacement and climate change: WDFW’s path from science to policy | **George Wilhere**, Timothy Quinn, Dan Dulan, Jane Atha (WDFW), Guillaume Mauger (UW Climate Impacts Group) |
| 10:20 AM | The WSDOT fish passage "machine"”: how the DOT identifies, delivers, and monitors fish passage projects | **Erin Mathews** (WSDOT) |
| 10:40 AM | *Break (10 min.)* | |
| 10:50 AM | Lower Boise River fish passage study | **Dorene MacCoy** & Sampling and Monitoring Team (City of Boise) |
| 11:10 AM | Snohomish County fish passage program | **Daniel Howe**, Tracy Gilson, Heidi Reynolds (Snohomish County) |
| **Session: Restoration** | | |
| 11:30 AM | A flexible approach to restoration monitoring in the Clackamas River Basin, Oregon | **Matt Strickland** and Eric Bailey (ODFW) |
| 11:50 AM | *Lunch (1 hr 10 min.)* | |
| **Session: Bioassessment** | | |
| 1:00 PM | Keynote: The state of bioassessment science | **Charles Hawkins** (Utah State Univ, National Aquatic Monitoring Center) |
| 1:50 PM | *Break (10 min)* |  |
| 2:00 PM | Using Macroinvertebrates to Determine Whether Streams are Meeting Aquatic Life Uses –A Test Case in the Chehalis Basin, WA | **Chad Larson** (WA Dept. of Ecology) |
| 2:20 PM | Review of the use of Chironomid surface-floating pupal exuviae in bioassessment | **Barbara Hayford** (Aquatic Biology Associates, Univ. of Montana), William Bouchard (Univ. of Minnesota) |
| 2:40 PM | *Break (10 min.)* | |
| **Session: eDNA** | | |
| 2:50 PM | The eDNA collaborative: bringing eDNA out of the lab and into the field | **Shana Hirsch** (OSU, UW), Ryan Kelly, Aden Ip, Elizabeth Anduszkiewicz Allan  (University of Washington) |
| 3:10 PM | eDNA sampling outperforms traditional sampling concerning biodiversity detection in eastern Washington headwater streams | **Daniel Nelson**, Charles Hawkins, Torrey Rodgers (Utah State Univ.) |
| 3:30 PM | Torrent in a bottle: detecting threatened headwater-obligate torrent salamanders (*Rhyactotriton* sp.) with environmental DNA | **Chris Cousins** (OSU), Lindsey Thurman (USGS), Deanna Olson (USFS), Brooke Penaluna (USFS), Tiffany Garcia (OSU) |
| 3:50 PM | *Break (10 min.)* | |
| **Session: State agency updates** | | |
| 4:00 PM | Washington update | **Chad Larson** (WA DOE) |
| 4:15 PM | Idaho update | **Emily Washburne** (ID DEQ) |
| 4:45 PM | Oregon update | **Shannon Hubler** (OR DEQ) |
| 5:00 PM | Adjourn & evening plans | **Shannon Claeson** (Forest Service PNW Research Station) |
|  | Posters need to be setup at The Uptown Grill during this time | |
| 5:30 PM | Poster session & social at Uptown Grill (5:30-8:00 pm) | |
| Poster | Land use type influence on benthic invertebrates and leaf litter decomposition in streams | **Sylvia Leeb-Haigh**, Carri LeRoy (The Evergreen State College) |
| Poster | Macroinvertebrate communities in small streams in Pierce County, WA | **Gopal Mulukutla** (Pierce County Planning & Public Works) |
| Poster | An investigation of lentic invertebrate taxa overlooked by long-term monitoring of lotic habitats in a central Idaho wilderness | **Stuart Shipley**, Colden Baxter, Sawyer Finley (Idaho State Univ.) |
| Poster | Assessing the toxicological effects of motor oil and tire particles on Zebrafish | **Madeline Thompson** (The Evergreen State College) |
| Poster | Using lanthanum modified bentonite to immobilize arsenic in lake sediments | **Sasha Vinogradova**, **Riley McElroy**, Jim Gawel (UW – Tacoma) |
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| **Thursday October 24th, 2024** \* Indicates a virtual presentation | | |
| **Time** | **Topic/Title** | **Speaker** |
| 8:00 AM | Registration | PNW Chapter committee |
| 8:30 AM | Welcome, PNW Chapter steering committee | **Shannon Claeson** (Forest Service PNW Research Station) |
| 8:45 AM | \*National SFS 2024 meeting overview and updates | **Sherri Johnson** (Forest Service PNW Research Station, SFS past-president) |
| **Session: Dam removal** | | |
| 9:00 AM | Ecosystem response to Elwha River dam removal | **Sarah Morley** (NOAA NWFSC), Jeff Duda (USGS WFRC), Mel Elofson & Mike McHenry (Lower Elwha Klallam Tribe) |
| 9:30 AM | Organic matter dynamics following dam removal on the Elwha River | **Carri LeRoy** (The Evergreen State College), Sarah Morley (NOAA NWFSC), Jeff Duda (USGS WFRC), etc. |
| 9:50 AM | *Break (10 min.)* | |
| 10:00 AM | An evaluation of the mechanisms driving dissolved oxygen downstream of the Klamath dam removal | **Kristine Alford** and Desiree Tullos (OSU), James Peterson (OSU, USGS) |
| 10:20 AM | Factors limiting filamentous algae and rooted macrophyte growth during dam removal in the Klamath River | **Isabelle Tang** (OSU), Desirée Tullos (OSU), Laurel Genzoli (Univ. of Nevada) |
| 10:40 AM | *Break (10 min.)* | |
| **Session: Contributed** | | |
| 10:50 AM | Arsenic mobilization, bioavailability, and human health risk in shallow urban lakes | **James Gawel** (UW-Tacoma), Rebecca Neumann (UW-Seattle) |
| 11:10 AM | Are riverine lowland lakes a distinct European lake type according to the EU WFD? | **Oliver Miler** (NWIFC), Magdalena Czarnecka (Nicolaus Copernicus University), Mario Brauns (Helmholtz Centre for Environmental Research) |
| 11:30 AM | \*Using the PlanktoScope, a high-throughput imaging tool to assess the diets of larval salamanders under simulated climate change | **Annika Rose-Person**, Holly A. Fijolek, Mia Mastrangelo (Gonzaga Univ.), etc. |
| 11:50 AM | *Lunch (1 hr 10 min )* | |
| 1:00 PM | Relative importance of abiotic, biotic, and spatial factors in structuring the stream macroinvertebrate metacommunity in a temperate rainforest | **Elsa Toskey** (WSU), Stehen Bollens (WSU), Peter Kiffney (NOAA), Kyle Martens (WA DNR), Gretchen Rollwagen-Bollens (WSU) |
| 1:20 PM | \* Natural disturbance regimes and community structure: Exploring vertebrate species and trait diversity in temporary and permanent ponds | **Courtney Hendrickson** (OSU), Betsy Bancroft (Gonzaga Univ.), Tiffany Garcia (OSU) |
| 1:40 PM | *Break (10 min.)* | |
| 1:50 PM | Workshop: Drone acquisition 101 - Technology and capabilities of drones for freshwater science | **Casey Stokes**, Carlos Femmer, Chad Maxwell, Chad Wiseman (HDR Inc.) |
| 5:00 PM | *End* |  |

\*Indicates virtual presentation