FINAL

Conference Call Minutes

Aquatic Settlement Work Group

To: Aquatic SWG Parties Date: February 4, 2026

From: Tracy Hillman, Chair, BioAnalysts

Re: Final Minutes of the January 6, 2026, Aquatic SWG Conference Call

The Aquatic Settlement Work Group (SWG) met virtually by Microsoft Teams conference call on Tuesday, January 6, 2026, from 10:00 a.m. to 11:25 a.m. Attendees are listed in Attachment A of these conference call minutes.

Summary of Action Items

1. Washington State Department of Ecology (Ecology) will share with Douglas PUD the federal projects draft Total Maximum Daily Load Water Quality Attainment Plans (TMDL WQAPs) once these are approved by Ecology and are discoverable (Item I-C).
2. Aquatic SWG representatives will submit edits and comments on the draft Juvenile Lamprey Study Plan Memorandum to Douglas PUD by January 30, 2026 (Item II-A).
3. Douglas PUD will coordinate with Washington Department of Fish and Wildlife (WDFW) and the Confederated Tribes of the Colville Reservation (CTCR) to identify model inputs and ranges, with justifications, to consider in Douglas PUD's White Sturgeon Population Sandbox model, for discussion during the Aquatic SWG conference call on February 3, 2026 (Item II-C).
4. Douglas PUD will distribute the draft *2025 Annual Report Total Dissolved Gas Abatement Plan* (2025 TDG Annual Report) and draft *2026 Total Dissolved Gas Abatement Plan* and appended *Wells Bypass Operating Plan* (2026 GAP/BOP) next week, and Aquatic SWG representatives will be prepared to discuss these documents during the Aquatic SWG conference call on February 3, and vote via email in mid-February before submitting the final documents to the Federal Energy Regulatory Commission (FERC) and Ecology by the February 28 deadline (Item II-E). *(Note: These draft documents were distributed to the Aquatic SWG by Kristi Geris on January 16, 2026.)*
5. The Aquatic SWG meeting on February 3, 2026, will be held virtually by Microsoft Teams conference call (Item III-A).

Summary of Decisions

1. There were no decisions approved during today's conference call.

Agreements

1. There were no agreements discussed during today's conference call.

Review Items

1. A draft Juvenile Lamprey Study Plan Memorandum was distributed to the Aquatic SWG by Kristi Geris on November 14, 2025, with edits and comments due to Douglas PUD by January 30, 2026 (Item II-A).
2. The draft 2025 TDG Annual Report and draft 2026 GAP/BOP were distributed to the Aquatic SWG by Kristi Geris on January 16, and are available for a 30-day review, with edits and comments due to Douglas PUD by February 16, 2026 (Item II-E).
3. The draft statement of agreement (SOA), *Wells Reservoir White Sturgeon Supplementation 2027-2029* and Sturgeon Stocking and Harvest Scenarios document were distributed to the Aquatic SWG by Kristi Geris on January 26, 2026 (Item II-C).
4. The draft *2026 Aquatic Settlement Agreement and Workgroup Action Plan* was distributed to the Aquatic SWG by Kristi Geris on January 26, 2026.

Documents Finalized

1. The final *Total Dissolved Gas Water Quality Attainment Plan Year 10 Report* (TDG WQAP 10-Year Report), as approved by the Aquatic SWG on December 2, 2025, was distributed to the Aquatic SWG by Kristi Geris on January 6, 2026 (Item I-C).
2. The final *White Sturgeon Supplementation and Management Plan Implementation in the Wells Reservoir, 2023-24*, as approved by the Aquatic SWG on August 13, 2025, was distributed to the Aquatic SWG by Kristi Geris on January 6, 2026.

I. Welcome

A. Review Agenda (Tracy Hillman)

Tracy Hillman welcomed the Aquatic SWG and reviewed the agenda. Hillman asked for any additions or changes to the agenda. No additions or changes were requested.

B. Meeting Minutes Approval (Kristi Geris)

The revised draft December 2 conference call minutes were reviewed. Kristi Geris said edits and comments were received from Douglas PUD, which were minor clarifications that were incorporated into the revised minutes. Additional clarifying edits were received from the CTCR, and a second revised minutes were distributed on January 5. Aquatic SWG representatives present approved the December 2 conference call minutes, as revised.

C. Review of Action Items (Kristi Geris)

Action items from the Aquatic SWG conference call on December 2 are as follows *(Note: The following italicized item numbers correspond to agenda items from the December 2, 2025, conference call)*:

1. *Ecology will share with Douglas PUD the federal projects draft TMDL WQAPs once these are approved by Ecology and are discoverable (Item II-E).*
   Melissa Peterson said both federal projects declined to submit early drafts, and Ecology now also needs to coordinate review with the U.S. Environmental Protection Agency, so this process is taking longer than expected. This action item will be carried forward. Tracy Hillman asked about distribution of the final TDG WQAP 10-Year Report that was approved by the Aquatic SWG on December 2, 2025. Douglas PUD provided this final report for distribution after the conference call on January 6, 2026.

II. Summary of Discussions

A. Draft Juvenile Lamprey Study Plan Memorandum (Mariah Mayfield)

A draft Juvenile Lamprey Study Plan Memorandum was distributed to the Aquatic SWG by Kristi Geris on November 14. The Yakama Nation (YN) provided comments on December 2, 2025, which were reviewed and discussed last month. USFWS provided comments on January 5, 2026. Mariah Mayfield said there was a good discussion last month, and USFWS comments are straight forward. She will take the YN comments, the discussion last month, and USFWS comments, and develop a draft study plan for Aquatic SWG review. Tracy Hillman asked whether the comment period is closed. Comments were due December 31, 2025, but Mayfield said Douglas PUD would accept additional comments if there were any. Hillman suggested that Aquatic SWG representatives submit any additional edits and comments on the draft Juvenile Lamprey Study Plan Memorandum to Douglas PUD by January 30, 2026.

Mayfield said two general study topics are being discussed in other PUD Fish Forums that she wants to address in this forum. First, she has said 2027 is the earliest Douglas PUD can implement a study. This does not mean a study will take place in 2027. This study plan is being developed for a future year when the Aquatic SWG decides the study can be implemented pursuant to the requirements. It is still unclear how successful the Methow Screw Trap will be at collecting juveniles in a normal flow year. If 2026 turns out to be a normal flow year and the trap collects a significant number of juvenile lamprey, this will be a trigger for a study in 2027. If 2026 is not a normal flow year, it may make sense to hold off another year. Second, there seems to be a desire to implement all Mid-Columbia studies at the same time. This is not a requirement in Douglas PUD's Pacific Lamprey Management Plan (PLMP). Rather, Douglas PUD's PLMP just stipulates a 1-year study. Further, considering Douglas PUD's main fish source is the Methow Screw Trap, Douglas PUD cannot commit to providing fish to

the other PUDs. The Aquatic SWG should contemplate when Douglas PUD should implement a study regardless of the other PUDs' timing.

Steve Lewis (U.S. Bureau of Indian Affairs) asked whether Douglas PUD would still consider participating in a collective study even though this is not a requirement in Douglas PUD's PLMP. Mayfield said Douglas PUD will not postpone a study to wait for the other PUDs. If Douglas PUD has study fish and meets the requirements in the PLMP, a study would go forward even if the other PUDs are not ready. Part of this is fish source. Chelan and Grant PUDs have expressed concern about where to get fish. Mayfield suggested continuing discussion of a collective study within the other fish forums. Those forums will know when Douglas PUD plans to implement a study. To note, the other Mid-Columbia PUDs have expressed support for Douglas PUD to implement the first study as a pilot, and then the other PUDs can use what is learned to improve their studies.

B. PLCI Lamprey Information Exchange Recap (Ralph Lampman)

The Pacific Lamprey Conservation Initiative (PLCI) 9th Annual Lamprey Information Exchange was held from December 9 to December 11, 2025, in Portland, Oregon. Ralph Lampman shared on Microsoft Teams his notes from the event (Attachment B). Lampman reviewed his notes, and discussions were as follows.

Mariah Mayfield said the Columbia River Inter-Tribal Fish Commission (CRITFC) presented their CRITFC Tribal Lamprey Restoration Plan- 2025 Update (available at: https://critfc.org/fish-and-watersheds/columbia-river-fish-species/lamprey/lamprey-plan/). This plan demonstrates the progress made toward their goals.

Mayfield said this annual PLCI Lamprey Information Exchange is a great event. In the future, Douglas PUD may put on an Upper Columbia River symposium as part of this meeting.

Steve Lewis left the conference call.

C. PRESENTATION: Sturgeon Stocking and Shiny Application Population Modeling (Chas Kyger)

A link to the Wells Sturgeon Population Sandbox (https://dcpud-nr.shinyapps.io/Wells-Sturgeon-Sandbox/) was distributed to the Aquatic SWG by Kristi Geris on January 5.

Chas Kyger said that while waiting on modeling results from LGL Limited (LGL), he built a tool to support discussions about a future stocking rate for the Wells Reservoir. The tool is intended for scenario comparisons and not precise forecasting. It uses some underlying data, some of which are preliminary. This tool is similar to Chelan PUD's population modeling tool that has been shared in other forums, and there are still adjustments being made to improve it. Of note, there may be some positive biases in the later cohorts that might be overestimating abundance for the more recent release groups,

partly because there are not as many data points. These were smaller release groups with less monitoring and evaluation (M&E) sampling.

Model Layout

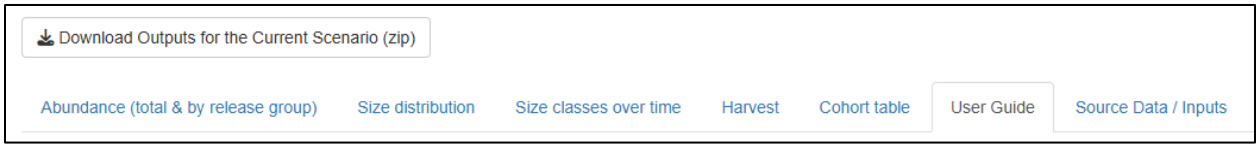
Kyger shared the tool on Microsoft Teams and reviewed the layout. Highlights were as follows.

The landing page (Snapshot 1) includes two sets of tabs. Model assumptions are on the left (Snapshot 2a). Model outputs are on the right (Snapshot 2b). The model assumptions tabs include criteria below them that can be adjusted to allow users to evaluate how changes in these assumptions influence future abundance and size structure.

Landing Page (Snapshot 1)

Model Assumptions (Snapshot 2a)

Model Outputs (Snapshot 2b)



A User Guide and Source Data/Inputs tabs are also on the right (Snapshot 1b). Kyger highly recommended reviewing the User Guide and Source Data/Inputs tabs, which explains how the data feed into the application and provides a more in-depth explanation about the source data. Kyger also recommended using the "Download Outputs" function (Snapshot 1b) to save inputs, tables, and graphs. This tool will timeout after a short while and return to default settings. Lastly, he noted that the Cohort table tab is empirical data from LGL (Snapshot 1b).

Simulations

Kyger reviewed the model assumptions and demonstrated a few example simulations. Highlights were as follows.

Stocking & Survival uses a weight-based initial survival model. LGL modeled survival in three stages: 1) initial – first year post-release; 2) early – second year post-release; and 3) long-term – all subsequent years. This is the same survival structure used in this application, and a user can adjust the confidence to increase precision.

Growth uses the von Bertalanffy Growth Function where the growth rate can be adjusted.

Harvest can target specific cohorts and fish sizes. Ralph Lampman asked whether these criteria need to be "this and that" or "this or that." Kyger said these data are inclusive if the years overlap.

Wild fish abundance and survival were not modeled directly because there are no good estimates of wild abundance.

Natural recruitment is also purely exploratory because there are no underlying empirical data informing model inputs.

Uncertainty propagation uses deterministic and Monte Carlo simulation modes.

Discussion

Kyger suggested running different simulations to see how these change the model outputs. WDFW's rulemaking for a harvest fishery is still forthcoming, but playing with this tool is a good way to look at these ideas.

Lampman asked whether multiple users can use the same link without affecting another user. Kyger confirmed that multiple users can access the application at the same time without affecting each other.

Tracy Hillman commented that this is a density independent tool, and he asked whether modifying survival and growth rates is the best way to assess effects of density dependence. Kyer said correct, and this is something to consider in the future.

Andrew Gingerich recalled a goal of having a final SOA for 2027 stocking by April 2026, and he encouraged Aquatic SWG representatives to look at this tool and come prepared in February to discuss this. He acknowledged the forthcoming WDFW rulemaking, but at this point, Douglas PUD will propose continuing the same stocking rate unless other details emerge.

Jason McLellan cautioned that there is an infinite number of scenarios to run with this type of tool without setting parameters to evaluate from the start. He suggested convening a subgroup or having the Aquatic SWG line out scenarios to run that are reasonable considerations for a stocking SOA. Gingerich agreed having more focus is smart. Douglas PUD has M&E data to provide guidance, but there are still areas with a lot of uncertainty. Hillman also agreed this is a good idea and suggested identifying parameters by February, to have a draft SOA by March, and a final SOA by April. Hillman asked McLellan whether he can identify the metrics and ranges to focus on. McLellan suggested first agreeing on the model inputs. For example, the Aquatic SWG should first agree on initial and long-term survival rates—these can be fixed—then variability would be the levers to pull as managers, i.e., stocking number, weight at release, and harvest. He could propose some things, or Douglas PUD or WDFW, but he believes it may be better to have a subgroup dialogue and come back to the Aquatic

SWG. He personally does not want to make these recommendations on his own and would rather this be a collective effort. Hillman suggested it may be helpful to have something to start with. McLellan asked what the overall target(s) are. Hillman shared on Microsoft Teams the current stocking SOA,[1] which states a goal of maintaining a population of 1,000 to 1,100 adult (>165-centimeter fork length) White Sturgeon in the Wells Reservoir. Kyger offered to coordinate with WDFW and the CTCR to identify model inputs and ranges, with justifications, to consider in Douglas PUD's White Sturgeon Population Sandbox model, for discussion during the Aquatic SWG conference call on February 3.

Hillman said a subgroup can be convened, if needed. He also suggested pulling information from the other fish forums and offered to provide data from those groups if helpful.

The draft SOA, *Wells Reservoir White Sturgeon Supplementation 2027-2029* and Sturgeon Stocking and Harvest Scenarios document were distributed to the Aquatic SWG by Geris on January 26, 2026.

D. BY 2025 Wells White Sturgeon Rearing Update (Chas Kyger)

A Brood Year (BY) 2025 Wells White Sturgeon Rearing Update (Attachment B) was distributed to the Aquatic SWG by Kristi Geris this morning prior to today's conference call. Chas Kyger said there are approximately 800 fish on station at Wells Hatchery, which is plenty for the Douglas PUD program. As mentioned before, due to early losses, the Chelan PUD program will be short. Soon, Douglas PUD will begin discussing marking, PIT-tagging, and spontaneous autopolyploidy sampling these fish, which will likely occur later in the spring. Andrew Gingerich is hearing there are no surplus fish available in the basin, but if there are fish available that meet Chelan PUD's requirements, those can be accommodated at Wells Hatchery. Chelan PUD seemed supportive of this idea, if possible. Jason McLellan confirmed there are no surplus fish in the basin.

E. TMDL WQAP Update (Mariah Mayfield)

Mariah Mayfield said Douglas PUD plans to submit their first draft documents to Ecology sometime this month, including a proposal on how to evaluate projects and a list of projects. These are still on track for Aquatic SWG review in February and discussion in March.

As a reminder, Douglas PUD will distribute the draft 2025 TDG Annual Report and draft 2026 GAP/BOP next week, and Aquatic SWG representatives should be prepared to discuss these documents during the Aquatic SWG conference call on February 3 and vote via email in mid-February before submitting the final documents to FERC and Ecology by the February 28 deadline. *(Note: These draft documents were distributed to the Aquatic SWG by Kristi Geris on January 16, 2026.)*

[1] Titled *Statement of Agreement (SOA) Regarding Wells Reservoir White Sturgeon Supplementation 2023-2026*, approved and distributed on August 10, 2022.

Steve Lewis rejoined the conference call.

F. Wells Dam Adult Fishway Winter Maintenance Update (Andrew Gingerich)

Andrew Gingerich recalled that last month, the east ladder was already offline for winter maintenance. This ladder was down for 2 weeks and rewatered on December 15, 2025. On January 5, 2026, dewatering of the west ladder began. This will be the longer of the two outages (out for roughly 30 days). The upper section was dewatered yesterday, and a fish rescue was performed. The lower section will be dewatered, and a fish rescue will be performed on January 8, 2026. Douglas PUD will provide a final fish salvage memorandum once it is available. Douglas PUD will have another update next month. *(Note: The final Wells Dam west ladder fish salvage memorandum was distributed to the Aquatic SWG by Kristi Geris on January 12, 2026.)*

III. Administration

Tracy Hillman reminded the Aquatic SWG that the 2025 Aquatic Settlement Agreement Annual Report review schedule is included in the final Aquatic SWG December 2, 2025, conference call minutes.

A. Upcoming Meetings (Tracy Hillman)

The Aquatic SWG meeting on February 3 will be held virtually by Microsoft Teams conference call.

The Aquatic SWG meeting on March 3 may be held in-person, to be determined. Andrew Gingerich confirmed that Douglas PUD can accommodate this meeting at Douglas PUD Headquarters in East Wenatchee, Washington.

The Aquatic SWG meeting on April 7, 2026, will be held virtually by Microsoft Teams conference call.

List of Attachments

Attachment A List of Attendees
Attachment B PLCI Lamprey Information Exchange Recap – YN Notes
Attachment C BY 2025 Wells White Sturgeon Rearing Update

Attachment A – Attendees

Name	Role	Organization
Tracy Hillman	Aquatic SWG Chair	BioAnalysts
Kristi Geris	Administration/Technical Support	Anchor QEA
Andrew Gingerich	Aquatic SWG Technical Representative	Douglas PUD
Chas Kyger	Aquatic SWG Technical Alternate	Douglas PUD
Mariah Mayfield	Aquatic SWG Technical Support	Douglas PUD
Michael Lucid	Aquatic SWG Technical Representative	U.S. Fish and Wildlife Service
Melissa Peterson	Aquatic SWG Technical Representative	Washington State Department of Ecology
Patrick Verhey	Aquatic SWG Technical Representative	Washington Department of Fish and Wildlife
Ralph Lampman	Aquatic SWG Technical Representative	Yakama Nation
Jason McLellan	Aquatic SWG Technical Representative	Confederated Tribes of the Colville Reservation
Steve Lewis*	Observer	U.S. Bureau of Indian Affairs

Notes:

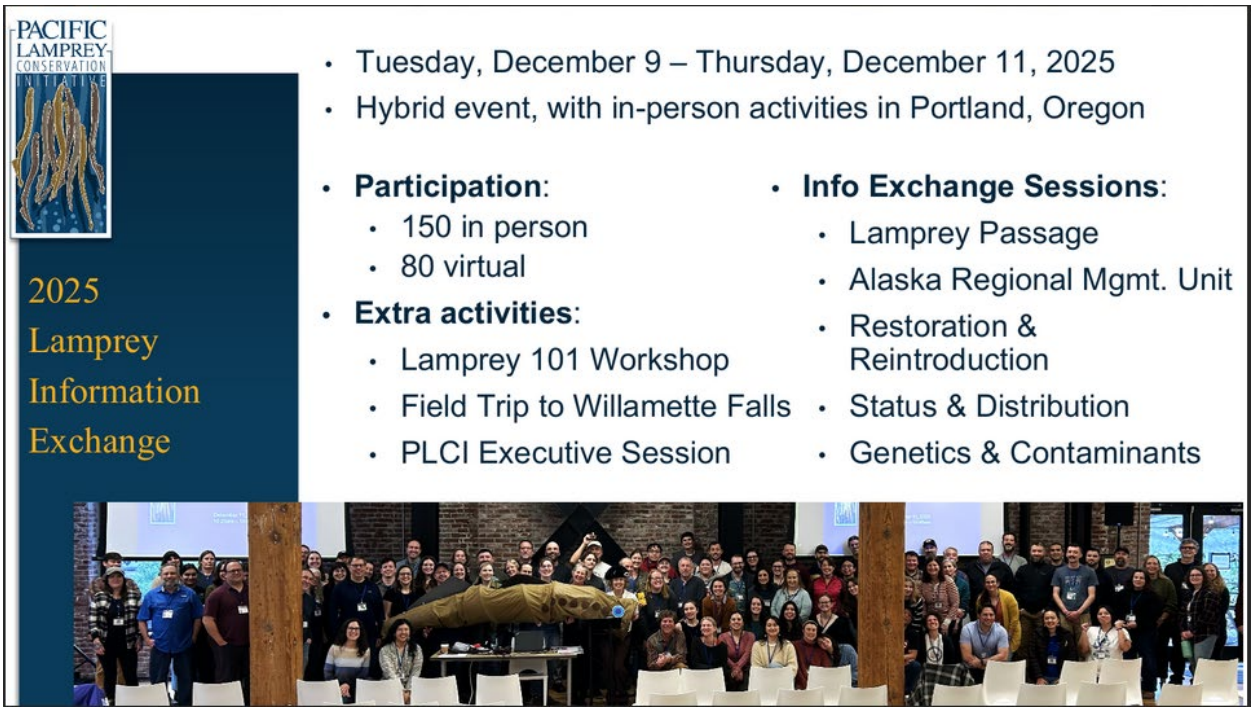
* Left the conference call from Item II-C to Item II-E.

	1-Dec		6-Jan	
Tank	Population	Grams	Population	Grams
1	--	--	98	50
2	97	45.0	83	113.5
3	64	95.4	61	191.6
4	84	81.4	88	185.3
5	60	103.4	54	200.0
6	122	33.7	99	93.4
7	69	19.0	--	--
8	56	9.3	84	24.5
9	63	50.2	67	131.6
10	57	20.0	59	13.0
11	46	8.0	25	8.8
12	79	108.4	72	218.3
Mag 1	--	--	--	--
Mag 2	--	--	--	--
Total	797	53.5	790	113.8

9TH ANNUAL

L AMPREY INFORMATION EXCHANGE

AGENDA



TUESDAY 9 DECEMBER 2025

LAMPREY 101 WORKSHOP (~50 people)

FIELD TRIP TO WILLAMETTE FALLS (25 participants)

PLCI EXECUTIVE SESSION (Lamprey Implementation Tracking System – LITS) (~25 people)

WEDNESDAY 10 DECEMBER 2025

LAMPREY SYMPOSIUM, DAY 1

WELCOME & TRIBAL INVOCATION

TRIBAL KEYNOTE

RAFFLE & ROCKSTAR AWARD VOTING

TRIBAL PACIFIC LAMPREY RESTORATION PLAN

SESSION 1: LAMPREY PASSAGE

- JUVENILE PACIFIC LAMPREY PASSAGE BEHAVIOR AND SURVIVAL IN THE LOWER COLUMBIA AND LOWER SNAKE RIVERS – Kate Deters, Pacific Northwest National Laboratory
- ADULT PACIFIC LAMPREY PASSAGE AND MIGRATION BEHAVIOR AT LOWER COLUMBIA R IVER DAMS – Daniel Deng, Pacific Northwest National Laboratory
- DEVELOPMENT OF THE F LOATING ADULT LAMPREY COLLECTOR (OPERATION NOCTURNAL) PHASE II – Ralph Lampman, Yakama Nation Fisheries

POSTER SESSION

- STATO- WHAT? A CLOSER LOOK AT ARCTIC LAMPREY STATOLITHS – Niamh Balaji, Western Washington University
- MONITORING TRANSLOCATED PACIFIC LAMPREY USING R ADIO TELEMETRY AND IDENTIFYING AMMOCOETE D ISTRIBUTIONS AND DENSITY ON THE WARM SPRINGS RESERVATION – Aldwin Keo, Confederated Tribes of Warm Springs Natural Resources, University of Idaho
- 2025 ANADROMOUS WATERS C ATALOG AND SURVEY SITES FOR ARCTIC AND PACIFIC LAMPREYS IN ALASKA – Nate Cathcart, Alaska Department of Fish and Game
- DETECTION OF PACIFIC AND BROOK LAMPREY IN NORTHERN CALIFORNIA COASTS AND ESTUARIES T HROUGHOUT THE YEAR USING EDNA METHODS – Michelle Schuiteman, Cal Poly Humboldt
- LAMPREY IMPLEMENTATION TRACKING SYSTEM – Tod Sween, Nez Perce Fisheries

SESSION 2: ALASKA REGIONAL MANAGEMENT UNIT

- THE 2025 REPORT ON LAMPREY RESEARCH IN ALASKA – Nate Cathcart, Alaska Department of Fish & Game
- TRACKING PACIFIC LAMPREY: INTEGRATING TRADITIONAL KNOWLEDGE AND FIELD SURVEYS IN ALASKA – Meghan Montagne, Knik Tribe
- REPRODUCTIVE BIOLOGY OF LETHENTERON SPP. IN ALASKAN RIVER DRAINAGE – Amber Perk, University of Alaska Fairbanks

THURSDAY 11 DECEMBER 2025

LAMPREY SYMPOSIUM, DAY 2

SESSION 3: RESTORATION & REINTRODUCTION

- REINTRODUCTION OF PACIFIC LAMPREY TO UPPER WILLAMETTE TRIBUTARIES FOLLOWING DECADES OF HABITAT INACCESSIBILITY - Jon Hess, Columbia River Inter-Tribal Fish Commission
- REINTRODUCING THE MILLER LAKE LAMPREY TO MILLER LAKE FOLLOWING EXTIRPATION – Ben Clemens, Oregon Department of Fish & Wildlife
- ALA KA ZAM – BRINGING PACIFIC LAMPREY BACK TO THE TUCANNON RIVER WITH ARTIFICIALLY PROPAGATED LARVAE – Zach Seilo, Confederated Tribes of the Umatilla Indian Reservation
- DEVELOPING METHODS TO OUTPLANT LARVAL PACIFIC LAMPREY IN THE TUCANNON RIVER – Mary Moser, Moserworks LLC
- ROAD LAMPREY : GUIDELINES FOR T RAP AND HAUL OF PACIFIC LAMPREY – Ann Gray, U.S. Fish & Wildlife Service

DISCUSSION: OUTREACH

- PLCI O UTREACH INITIATIVES AND F UTURE D IRECTIONS – Sophia Troeh, U.S. Fish & Wildlife Service
- CHALLENGES TO IMPROVING THE SIGNAL WHILE R EDUCING THE N OISE IN C OMMUNICATING R ECOMMENDATIONS IN LAMPREY – Ben Clemens, Oregon Department of Fish & Wildlife

ROCKSTAR AWARD ANNOUCEMENTS
(*inducted into the Lamprey Hall of Fame, given a commemorative rock)

Lamprey Hub - Individual Award = Monica Blanchard (WDFW)

Lamprey Hub – Team Award = Nez Perce Tribe

Lamprey Spoke Award = Sophia Troeh (USFWS)

Lamprey Lifetime Award = Christina Wang (Benthos Consulting)

SESSION 4: STATUS & DISTRIBUTION

- DISTRIBUTION OF LAMPREY SPECIES WITHIN THE SALMON RIVER WATERSHED, CALIFORNIA – Sam Stroich & Kim Deniz, Salmon River Restoration Council
- E-BLIMP MAKES ITS LANDING! UPDATED DISTRIBUTION MAPS AND OCCUPANCY MODELS FOR PACIFIC LAMPREY IN THE 21ST CENTURY – Kellie Carim, U.S. Forest Service
- MODELING LAMPREY DISTRIBUTION USING FLOW, GEOMORPHOLOGY, AND ELEVATION IN A TERMINAL LAKE SYSTEM – Jacob Dickey, Oregon State University

SESSION 5: GENETICS & CONTAMINANTS

- ENVIRONMENTAL RNA (E-RNA) DISTINGUISHES SEX AND MATURITY IN PACIFIC LAMPREY – Dan Bingham, Cramer Fish Sciences
- AN INVESTIGATIVE STUDY INTO MICROPLASTIC ACCUMULATION AND ITS CORRELATION WITH MERCURY LEVELS IN A C ULTURALLY RELEVANT SPECIES OF THE COLUMBIA RIVER BASIN – Venecia Rollins, Oregon State University
- PER- AND POLYFLUOROALKYL SUBSTANCES IN PACIFIC LAMPREY AND OTHER FISH SPECIES IN THE PACIFIC N ORTHWEST – Elena Nilsen, U.S. Geological Survey