



# Klamath Basin Fisheries Collaborative

---

## 2026 Annual Meeting



"If you want to go fast, go alone; if you want to go far, go together"

**Annual Meeting 19 May 2026**  
**Leadership Meeting 20 May 2026**

OIT - Mt. Bailey Room  
3201 Campus Drive  
Klamath Falls, OR 97601

# Remote Attendance Information

We look forward to having you join us online, please use the Microsoft Teams link or dial in information below to access the meeting. We request that only registered participants attend.

## Day 1: KBFC Annual Meeting 2026

### 19 May 2026 - Microsoft Teams meeting

#### Join:

<https://teams.microsoft.com/meet/26513083422752?p=3TFHTCe1ukSiMwq2kD>

Meeting ID: 265 130 834 227 52

Passcode: pG9UJ6xU

[Need help?](#) | [System reference](#)

#### Dial in by phone

+1 207-387-0436,,186693627# United States, Portland

[Find a local number](#)

Phone conference ID: 186 693 627#

For organizers: [Meeting options](#) | [Reset dial-in PIN](#)

## Day 2: KBFC Leadership Meeting

### 20 May 2026 - Microsoft Teams meeting

#### Join:

<https://teams.microsoft.com/meet/28572179381396?p=KV9smSLQE6CPwS8Xff>

Meeting ID: 285 721 793 813 96

Passcode: p57QB3gK

[Need help?](#) | [System reference](#)

#### Dial in by phone

+1 207-387-0436,,671043778# United States, Portland

[Find a local number](#)

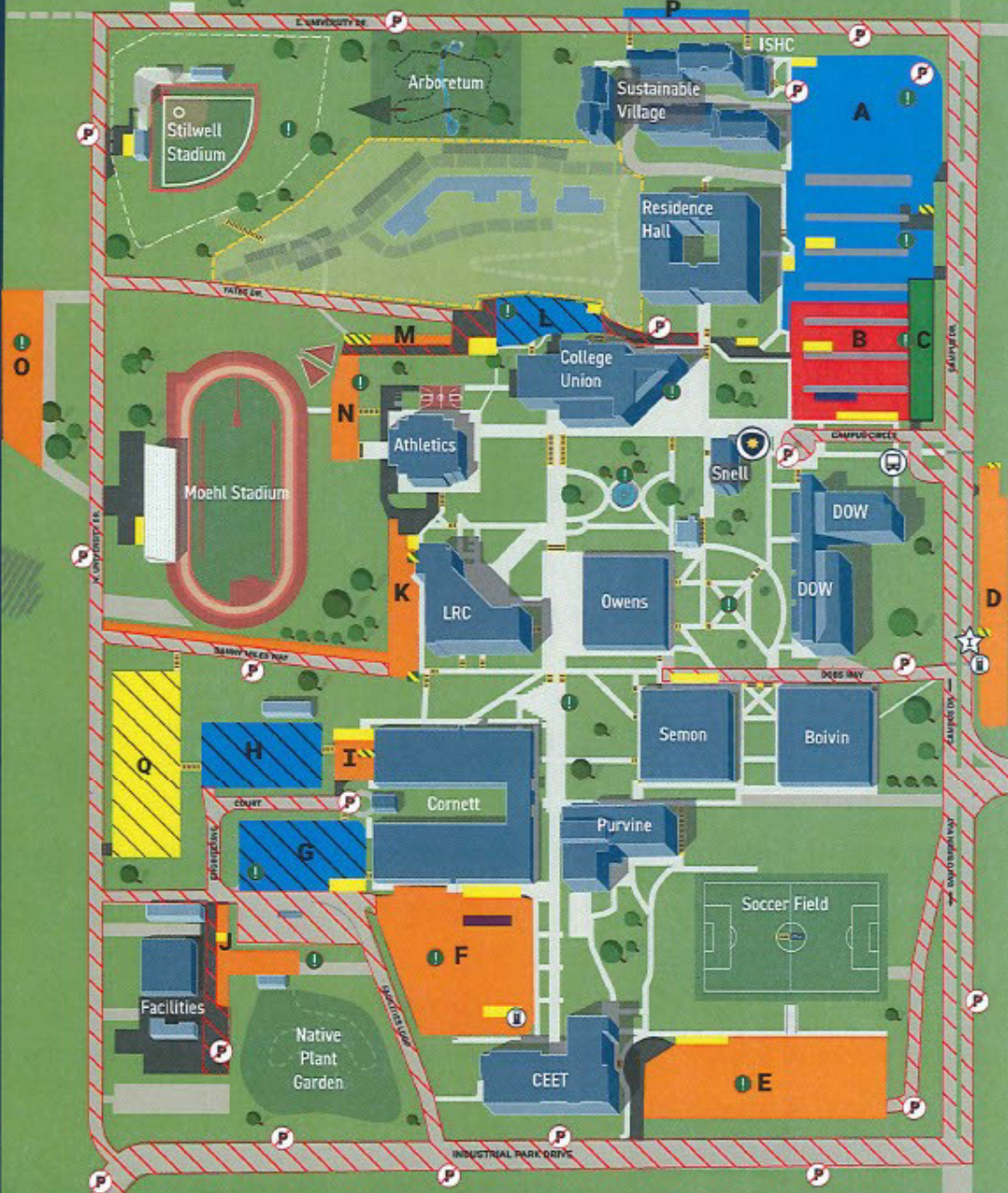
Phone conference ID: 671 043 778#

For organizers: [Meeting options](#) | [Reset dial-in PIN](#)

# In-Person Attendance Parking

**Temporary Visitor Permit Form** is required for non-government vehicles in many parking lots. **Please see attachment in your KBFC Annual Meeting email to download the permit and return it to the** Parking Information Center building located in parking Lot D which is across from the main campus.

Designated Parking Areas	
	Accessible Parking
	Resident Parking 24 Hours a Day
	Employee Parking (No Parking 2am-6am)
	Employee and Commuter Student Parking (No Parking 2am-6am)
	General Parking (No Parking 2am-6am)
	General Parking Overnight Allowed
	Discounted Employee and Resident Parking Overnight Allowed
	Motorcycle Parking
	Visitor Parking
	Dental Clinic Parking
	No Parking
<b>A</b>	Resident Parking (24 Hours a day) Residents Only
<b>P</b>	Residents Only
<b>B</b>	General Parking (No Parking 2am-6am) Employee Parking Only
<b>C</b>	Employee and Commuter Students Only
<b>D</b>	Parking Information Booth
<b>E</b>	Purvine Hall
<b>F</b>	Cornett West/CEET
<b>I</b>	Cornett North Annex
<b>J</b>	Facilities Services
<b>K</b>	Library/Learning Resource Center
<b>M</b>	College Union North
<b>N</b>	Athletics/Tech Fit
<b>D</b>	Moehl Stadium Lot (gravel)
<b>G</b>	General Parking (Overnight Allowed) Cornett North
<b>H</b>	Cornett North
<b>L</b>	College Union East
<b>Q</b>	Discounted Parking (Overnight Allowed) Employee and Residence Only
	Parking Information Booth
	Public Transit Stop
	Electric Vehicle Charging Station
	Resilience, Emergency Management and Safety (REMS) Campus Safety Center (Snell Hall, Lower Level)
	Evacuation Assembly Point



The Temporary Visitor Permit is for those who will be driving their personal vehicles (State or Federal gov't registered vehicles are exempt from the permit requirement).

Those who obtain a Temporary Visitor Permit, Gov't exempt vehicles can park in **Lot D, E, F, G, H, K**. Parking without the required permit (Gov't vehicles exempt) in these lots may result in a parking citation being issued.

**Lot Q** will be available to any attendee who does not want to obtain a Temporary Visitor Permit or those who have received a permit as well; vehicles will not be subject to parking citations in this lot.

**Lots A, B, & C are not available** to attendees and are restricted to campus student and staff parking only.

# Day 1 Annual Meeting Schedule



**Date:** 19 May 2026

**Time:** 10:00 AM - 5:00 PM

**Location:** OIT - Mt. Bailey  
Room Klamath Falls, OR

---

10:00 AM - 10:10 AM	Welcome & Overview
10:10 AM - 12:30 PM	Research & Monitoring of Fish and Other Aquatic Organisms - PIT and Telemetry Tagging
<b>12:30 PM - 1:30 PM</b>	<b>Lunch Break</b>
1:30 PM - 2:30 PM	Research & Monitoring of Fish and Other Aquatic Organisms - Life History and Population Health
2:30 PM - 2:50 PM	Suckers Discussion - Data methodologies, standardization, and needs
2:50 PM - 3:10 PM	Thermal Refugia - Temperature and Fish Behavior
<b>3:10 PM - 3:25 PM</b>	<b>Break</b>
3:25 PM - 4:25 PM	Dam Passage & Removal - Fish Monitoring Post-Dam Removal
4:30 PM - 4:50 PM	Salmon Discussion - Data methodologies, standardization, and needs
4:50 PM - 5:00 PM	Wrap-Up & Adjourn

Dinner @ The Falls Taphouse (no host, optional)

2215 Shallock Ave, Klamath Falls, OR 97601

**6:00 PM**

# Day 2 Leadership Meeting Schedule



**Date:** 20 May 2026

**Time:** 10:00 AM - 2:00 PM

**Location:** OIT - Mt. Bailey  
Room Klamath Falls, OR

---

10:00 AM - 10:15 AM	Welcome & Overview
10:15 AM - 11:00 AM	Updates from Leadership
11:00 AM - 11:15 AM	KBFC Database Updates
11:15 AM - 12:00 PM	Budget Update
<b>12:00 PM - 1:00 PM</b>	<b>Lunch</b>
1:00 PM - 1:10 PM	Karuk Change in Leadership
1:10 PM - 1:30 PM	Updating the Leadership Roster
1:30 PM - 2:00 PM	Wrap Up, Next Steps, & Adjourn

# Day 1 Presentations

**10:15 AM**

## **Environmental and Fish-Specific Drivers of Juvenile Chinook Salmon Migration Rates and Ocean Arrival Timing in the Klamath River**

Presenter: Summer Burdick (USGS)

Co-Authors: Russ Perry, Collin Smith, Chris Pullano, Chad Martel, and Tyson Hatton

Juvenile salmon migration reflects an evolved life-history strategy that balances the energetic costs and mortality risks of movement against the benefits of reaching marine habitats, where growth potential is often greater. Faster migration rates are associated with higher in-river survival; however, rapid downstream movement may limit growth opportunities, and smaller body size at ocean entry is linked to reduced early marine survival. Ocean arrival timing also matters. Smolts that arrive before the onset of spring transition, when upwelling increases productivity and prey availability, are less likely to survive than those arriving afterward. Together, these interacting processes shape populations. To evaluate how environmental and fish-specific factors influence migration rates and population dynamics, USGS along with the Hoopa, Yurok, and Karuk Tribes conducted an acoustic telemetry study from 2022–2024 in the Klamath River. Generalized linear models with AIC-based selection identified water temperature, pool habitat proportion, fish length, and cold-water tributary density as key predictors of movement. Using estimated parameters and rotary screw trap data, we simulated migration rates and ocean arrival timing for four tributary populations. We found strong effects of water temperature and fish size and weaker effects of the proportion of pool habitat and the density of cold-water tributaries on migration rate. Migration initiation timing and tributary distance from the ocean most strongly influenced ocean arrival timing. Increases in temperature and fish size over each migration season compressed ocean arrival distributions relative to the distribution of migration initiation. The proportion of fish to arrive prior to spring transition varied among populations and years.

# Day 1 Presentations

**10:35 AM**

## **Distribution and Apparent Minimum Survival of Radio-tagged Juvenile Lost River and Shortnose Suckers in Upper Klamath Lake (2022–2025)**

Presenter: McKenzie Wasley (USFWS)

Co-Authors: Nathan Banet, Real Time Research, Inc., nate.banet@realtimeresearch.com

Allen Evans, Real Time Research, Inc., allen@realtimeresearch.com

Quinn Payton, Real Time Research, Inc., quinn@realtimeresearch.com

Mike Hawbecker, Real Time Research, Inc., mike@realtimeresearch.com

Christina Kruse, USFWS, ckruse@blm.gov

Christie Nichols, USFWS, cnichols@blm.gov

Rodger Gwiazdowski, USFWS, rgwiazdosk@umass.edu

A lack of juvenile recruitment of endangered Lost River Sucker *Deltistes luxatus* and Shortnose Sucker *Chasmistes brevirostris* into spawning populations in Upper Klamath Lake (UKL) is increasing the risk of extinction. To bolster recruitment, suckers have been reared at Klamath Falls National Fish Hatchery and released into UKL since 2018. The movement, distribution, and post-release survival of hatchery-reared juvenile suckers, however, was largely unknown. To address these uncertainties, radio telemetry and passive integrated transponder tags were implanted in 910 juvenile hatchery suckers during 2022–2023 to monitor behavior and apparent survival following release. Tagged suckers were released at different locations, seasons, and sizes. Results indicated that suckers occupied multiple lake areas following release, with fish broadly distributed across different habitat types. Estimated, minimum apparent survival varied considerably within and across release groups, ranging from 5.2% to 30.7% at 30 days post-release and from 0% to 6.0% at 360 days post release. There was some evidence that larger-sized suckers (> 300 mm, total length) had the highest apparent survival at 180 days post-release, the broadest spatial distribution, and were the most likely to be observed at spawning sites within one-year of release. Uncertainties remain regarding the degree to which release location and timing influenced fish behavior and apparent survival. Efforts to increase acclimation times of hatchery fish prior to release to reduce mortality during the first 30 days, to release suckers at larger sizes during the fall/winter, and to release suckers in central UKL may increase survival and warrant additional research.

# Day 1 Presentations

**10:55 AM**

## **Life-Stage–Specific Distribution Patterns of Endangered Suckers Inferred from a High-Density Acoustic Telemetry Array**

Presenter: Matthew Sholtis (USGS)

Co-Authors: Matthew Sholtis, USGS, msholtis@usgs.gov

Summer Burdick, USGS, sburdick@usgs.gov

Jacob Krause, USGS, jrkrause@usgs.gov

John Caldwell, USGS, jmcaldwell@usgs.gov

McKenzie Wasley, USFWS, mckenzie\_wasley@fws.gov

Josh Gondek, USFWS, joshua\_gondek@fws.gov

Ryan Bart, Klamath Tribes, ryan.bart@klamathtribes.com

Juvenile salmon migration reflects an evolved life-history strategy that balances the energetic costs and mortality risks of movement against the benefits of reaching marine habitats, where growth potential is often greater. Faster migration rates are associated with higher in-river survival; however, rapid downstream movement may limit growth opportunities, and smaller body size at ocean entry is linked to reduced early marine survival. Ocean arrival timing also matters. Smolts that arrive before the onset of spring transition, when upwelling increases productivity and prey availability, are less likely to survive than those arriving afterward. Together, these interacting processes shape populations. To evaluate how environmental and fish-specific factors influence migration rates and population dynamics, USGS along with the Hoopa, Yurok, and Karuk Tribes conducted an acoustic telemetry study from 2022–2024 in the Klamath River. Generalized linear models with AIC-based selection identified water temperature, pool habitat proportion, fish length, and cold-water tributary density as key predictors of movement. Using estimated parameters and rotary screw trap data, we simulated migration rates and ocean arrival timing for four tributary populations. We found strong effects of water temperature and fish size and weaker effects of the proportion of pool habitat and the density of cold-water tributaries on migration rate. Migration initiation timing and tributary distance from the ocean most strongly influenced ocean arrival timing. Increases in temperature and fish size over each migration season compressed ocean arrival distributions relative to the distribution of migration initiation. The proportion of fish to arrive prior to spring transition varied among populations and years.

# Day 1 Presentations

**11:15 AM**

## **Evaluating Bull Trout passage at beaver dam analogs using PIT-tag detection in Sun Creek, Upper Klamath Basin, Oregon**

Presenter: Dave Hering (NPS)

Co-Authors: Charlie Erdman, Trout Unlimited, [cerdman@tu.org](mailto:cerdman@tu.org)

Tommy Cianciolo, Trout Unlimited, [tommy.cianciolo@tu.org](mailto:tommy.cianciolo@tu.org)

Beaver dam analogs (BDAs) are an important process-based tool for river restoration, used to promote floodplain connectivity, address channel incision, and influence hydrologic and geomorphic processes. BDA installations typically use a post-line wicker weave method or a newer approach that incorporates layered mixtures of woody material and sod with a mattress on the downstream side to dissipate energy, but most studies of fish passage at BDAs have evaluated only the wicker weave style of construction. We adapted PIT-tag detection and capture data from a long-term fish monitoring study on Sun Creek in the Upper Klamath Basin to assess Bull Trout (*Salvelinus confluentus*) upstream and downstream passage across a 1.3-mile reach with 34 BDAs constructed using the layered technique with downstream mattress between 2022 and 2024. Tag detections indicated that Bull Trout moved upstream and downstream through the BDA reach during multiple flow conditions over several years following BDA installation, including immediately after construction, and there was no evidence that BDA passage slowed movement rates. This analysis demonstrates how existing fish monitoring efforts and infrastructure – in this case a program intended to assess growth and dispersal of a recovering Bull Trout population – may be re-purposed to address unanticipated resource management questions. Although such an approach has limitations compared to a-priori experimental designs, we see opportunity in the KBFC data sharing framework for insight from similar post-hoc analyses across the Klamath Basin.

# Day 1 Presentations

**11:35 AM**

**Estimating seasonal movement and survival using multi-state mark-recapture models:  
Shasta River Coho Salmon and Pilgrim River Brook Trout**

Presenter: Christopher Adams (MTU)

Multi-state mark-recapture models provide a means for estimating movement and survival probabilities using complex PIT tagging and detection data from multiple stations within a watershed. This approach was used to estimate seasonal movement and survival of juvenile coho across three brood years in the Shasta River, California. Covariates may also be added to these models to test for differences in population parameters among groups such as age/size class, which was accomplished in a study conducted on brook trout in the Pilgrim River, Michigan.

# Day 1 Presentations

**11:55 AM**

## **Scott River Watershed Wide Restoration Project Validation Monitoring Program**

Presenter: Shari Anderson (Lazuli Ecological Services)

Co-Authors: Charnna Gilmore, Scott River Watershed Council, [charnna@scottriver.org](mailto:charnna@scottriver.org)

Betsy Stapleton, Scott River Watershed Council, [betsy@scottriver.org](mailto:betsy@scottriver.org)

Restoration efforts in the Scott River watershed have increasingly focused on reconnecting floodplains, enhancing habitat complexity, and promoting beaver coexistence to improve rearing conditions for juvenile coho salmon. While these actions are widely implemented, critical uncertainties remain regarding their effectiveness at improving freshwater productivity and population-scale outcomes. This project presents a watershed-wide monitoring framework designed to evaluate how restored and beaver-influenced habitats influence juvenile coho survival, growth, and movement.

Juvenile coho in the Scott River exhibit extensive seasonal redistribution in response to limited summer and winter refugia, a behavior associated with elevated mortality risk. We hypothesize that high-quality habitats—particularly those influenced by beaver activity and restoration—reduce the need for risky redistribution while supporting year-round occupancy and growth. This study also evaluates whether beaver dams and analogues maintain life-cycle connectivity during critical movement periods.

Using a Before–After–Control–Impact (BACI) design, the program integrates habitat monitoring, juvenile fish sampling, and PIT tag–based movement tracking across mainstem and tributary sites. By linking site-scale habitat conditions to fish performance and life-history expression, this effort moves beyond project-level evaluation to assess population-relevant outcomes.

Results from this study will address key uncertainties about refugia distribution, particularly in the mainstem Scott River. By identifying where habitat gaps force risky movement, this project will inform strategic placement of restoration actions to reduce redistribution distance and risk, increasing juvenile survival and driving population-level responses needed to meet recovery objectives

# Day 1 Presentations

**1:30 PM**

## **Endangered suckers nearing extirpation in Upper Klamath Lake**

Presenter: Jacob Krause (USGS)

Co-Authors: Brian Hayes, USGS, bshayes@usgs.gov

Rachael Paul-Wilson, Pacific States Marine Fisheries Commission,  
rpaul-wilson@contractor.usgs.gov

Maria Dzul, USGS, mdzul@usgs.gov

Lost River suckers (*Deltistes luxatus*) and shortnose suckers (*Chasmistes brevirostris*) have been federally listed as endangered for 37 years, yet populations remain in decline. We have monitored these long-lived, endemic species in Upper Klamath Lake using Passive Integrated Transponder (PIT) tags since 1999 to assess recruitment, survival, and abundance. Our mark-recapture time series (1999–2025) reveals that adult suckers have experienced minimal recruitment since the early 1990s. Survival rates have declined over the last decade and reached record lows in 2023. Since 2001, all populations have declined by more than 87%. Spring 2024 abundance estimates were approximately 4,700 shortnose suckers, 8,000 Lost River suckers spawning in rivers, and 1,100 lake-spawning Lost River suckers. These numbers are expected to drop further based on low 2025 capture data, indicating a multi-year population crash. Most Lost River suckers are now more than 12 years past their average life expectancy and may be experiencing senescence. While shortnose suckers have shown limited recruitment, it has not offset annual mortality. Juvenile monitoring programs provide no evidence that current wild or hatchery-reared cohorts will survive to adulthood in sufficient numbers to reverse population trajectories. Long-term PIT tag monitoring suggests that, without successful recruitment, extirpation of both species in Upper Klamath Lake is imminent.

# Day 1 Presentations

**1:50 PM**

## **Modeling to estimate endangered Klamath sucker abundance**

Presenter: Maria Dzul (USGS)

Co-Authors: Jacob Krause, U.S. Geological Survey, Western Fisheries Research Center, Klamath Falls Field Station, [jrkrause@usgs.gov](mailto:jrkrause@usgs.gov)

Brian Hayes, U.S. Geological Survey, Western Fisheries Research Center, Klamath Falls Field Station, [bshayes@usgs.gov](mailto:bshayes@usgs.gov)

John Caldwell, U.S. Geological Survey, Western Fisheries Research Center, Klamath Falls Field Station, [jcaldwell@usgs.gov](mailto:jcaldwell@usgs.gov)

The Upper Klamath basin is home to two federally endangered endemic lake sucker species, Shortnose Sucker (SNS; *Chasmistes brevirostris*) and Lost River Sucker (LRS; *Deltistes luxatus*), the latter of which has two alternate life history forms (resident lake-spawning and migratory river-spawning). Monitoring of these fishes in the Upper Klamath Lake system includes two different encounter types: 1) physical captures and 2) detections from remote antennas that detect fishes marked with passive integrated transponder (PIT) tags as they swim by. For all three fish populations, antenna detection probabilities are much higher than physical capture probabilities; however, unmarked fish cannot be detected on antennas thus presenting a challenge for abundance estimation. We present methods for estimating abundance in each population. For lake-spawning LRS, physical captures and antenna detections are combined and modeled using a robust design approach. For river-spawning LRS and SNS, we use a Cormack Jolly Seber model with antenna detections to obtain abundance estimates of marked fish, then use a different model that uses physical captures to estimate the proportion of the population that is marked. The proportion marked model corrects for unmarked individuals, so that we obtain estimates of total abundance. The time series of abundance estimates of all three fishes suggest dramatic declines (i.e., between 76-92%) over the last two decades. Additionally, results support the findings of previous work that find adult survival is high, recruitment is low, and that populations are aging during this period.

# Day 1 Presentations

**2:10 PM**

## **The Klamath Tribes' c'waam and koptu assisted rearing methodology**

Presenter: Carlie Sharpes Barrera (The Klamath Tribes)

Co-Authors: Jordan Ortega, The Klamath Tribes, [jordan.ortega@klamathtribes.com](mailto:jordan.ortega@klamathtribes.com)

The c'waam (*Deltistes luxatus*) and koptu (*Chasmistes brevirostris*) are closely related endangered sucker species, endemic to the Klamath Basin. They hold deep cultural significance as First Foods for the Klamath Tribes since time immemorial. Since the late 1960's populations have declined as a result of several factors including, but not limited to: habitat loss, habitat alteration, poor water quality, and predation. Upper Klamath Lake, once eutrophic, has become hypereutrophic with annual cyanobacterial blooms and anoxic events. Early life mortality and low juvenile recruitment are key factors in these species' decline.

The Klamath Tribes' Ambodat Department, in partnership with the Klamath Falls National Fish Hatchery, works to supplement populations through assisted rearing during vulnerable life stages. The Klamath Tribes' goal to release 300 mm juveniles requires approximately 4 years of rearing. Suitable water quality optimizes growth. Nutrient loading can influence hypereutrophic challenges raising pH beyond optimal levels for juvenile success.

In 2025, the Tribes implemented a pond maintenance protocol using a lanthanum-based phosphorus binder and peroxide-based biodegradable algaecide to combat hypereutrophic conditions. Compared to 2024, this resulted in significantly lower pH and higher allometric growth rates. Traditional growth metrics like length and weight differences can be misleading do to variable starting sizes. Allometric growth rate, which uses logarithmic scaling relative to body mass, offers a more robust comparison across individuals.

These results inform improvements in rearing methods and support the Tribes' goal of releasing healthy 300 mm c'waam and koptu juveniles to their native habitat.

# Day 1 Presentations

**2:50 PM**

**Acoustic telemetry of Upper Klamath Lake redband trout: tracking migration to summer refuges to define salmonid-relevant water quality thresholds.**

Presenter: Jonathan Armstrong (OSU)

Co-Authors: Hannah Barrett, OSU, [hannah.barrett@oregonstate.edu](mailto:hannah.barrett@oregonstate.edu)

Melanie Davis, OSU, [melanie.davis@oregonstate.edu](mailto:melanie.davis@oregonstate.edu)

Jordan Ortega, Klamath Tribes Ambodat Department, [jordan.ortega@klamathtribes.com](mailto:jordan.ortega@klamathtribes.com)

Bill Tinniswood, ODFW, [william.r.tinniswood@odfw.oregon.gov](mailto:william.r.tinniswood@odfw.oregon.gov)

Mark Hereford, ODFW, [mark.e.hereford@odfw.oregon.gov](mailto:mark.e.hereford@odfw.oregon.gov)

Ben Ramirez, ODFW, [benji.s.ramirez@odfw.oregon.gov](mailto:benji.s.ramirez@odfw.oregon.gov)

Jacob Krause, USGS, [jrkrause@usgs.gov](mailto:jrkrause@usgs.gov)

Summer Burdick, USGS, [sburdick@usgs.gov](mailto:sburdick@usgs.gov)

Upper Klamath Lake—Oregon’s largest water body by surface area—has been a central focus of restoration efforts in the Upper Klamath Basin. With the 2024 removal of the mainstem dams on the Klamath River, the lake is poised to become critical migration and rearing habitat for future runs of reintroduced salmon and steelhead. While past research and monitoring efforts have documented the effects of lake water quality on ESA-listed endemic suckers, the effects on salmonids, which are far less tolerant of heat stress, hypoxia, and high pH, remain poorly understood. This project addresses that gap by identifying the water quality thresholds that drive salmonid emigration from the lake. These thresholds are essential for evaluating whether restoration efforts are improving conditions for salmonids and identifying which salmon life-histories are viable under current and future lake conditions. To identify thresholds, we will leverage existing water quality and redband trout telemetry data (from PIT and radio tags) and take advantage of a unique opportunity to collect unparalleled, fine-scale information on fish movement using the USGS acoustic telemetry grid, which consists of ~90 acoustic receivers across the lake. We deployed 50 acoustic tags in April 2026 and we are thrilled to learn more about redband trout migrations to water quality refuges.

# Day 1 Presentations

**3:25 PM**

## **Using Radio Telemetry to Monitor Spawning Migration and Dam Passage Success in Fall-Run Chinook Salmon, Post-Dam Removal**

Presenter: Carolyn Malecha (ODFW)

Co-Authors: Mark Hereford, OR Dept. of Fish and Wildlife, [mark.e.hereford@odfw.oregon.gov](mailto:mark.e.hereford@odfw.oregon.gov)

Bob Pagliuco, NOAA Restoration Center, [bob.pagliuco@NOAA.gov](mailto:bob.pagliuco@NOAA.gov)

Cyril Michel, University of Santa Cruz, NMFS SWFSC Affiliate, [cyril.michel@noaa.gov](mailto:cyril.michel@noaa.gov)

Jordan Ortega, Klamath Tribes, [jordan.ortega@oregonstate.edu](mailto:jordan.ortega@oregonstate.edu)

Alex Corum, Karuk Tribe, [acorum@karuk.us](mailto:acorum@karuk.us)

James Whelan, California Trout, [jwhelan@caltrout.org](mailto:jwhelan@caltrout.org)

The removal of four dams on the Klamath River in 2024 represents one of the largest river restoration efforts in North America, restoring access to historically available salmon habitat for the first time in over a century. Understanding how adult fall-run Chinook salmon (*Oncorhynchus tshawytscha*) respond to renewed connectivity is critical for guiding restoration outcomes and adaptive management in the Klamath Basin. Although four dams have been removed, Keno Dam and Link River Dam remain in place and may continue to influence anadromous fish migration.

Monitoring salmon movement across hundreds of miles of river is inherently challenging, and the Oregon sector of the Klamath River presents additional logistical constraints due to its high-gradient reaches and geologic features that limit access to certain areas. This study uses radio telemetry to evaluate adult salmon movement throughout the Klamath River and its tributaries, with objectives to characterize migration timing, assess passage success through former dam sites, document use of newly accessible spawning habitats, and identify potential barriers to migration. Adult fall-run Chinook were surgically implanted with radio transmitters during their upstream migration and monitored using a basin-wide network of fixed receiver stations, supplemented by mobile tracking and aerial surveys. Detection data were used to estimate reach-specific passage success, describe migration timing, and locate spawning activity in newly accessible and difficult-to-survey areas.

This presentation will summarize movement patterns observed during the fall 2025 migration season. Fall-run Chinook were documented migrating through former dam sites, utilizing newly restored historic spawning habitats, and moving both upstream and downstream past the remaining dams.

# Day 1 Presentations

**3:45 PM**

## **Repopulation of Chinook Salmon in Upper Klamath Lake and It's Major Tributaries**

Presenter: Jordan Ortega (The Klamath Tribes)

Co-Authors: Mark Martin, The Klamath Tribes, mark.martin@klamathtribes.com

Ryan Bart, The Klamath Tribes, ryan.bart@klamathtribes.com

Bill Tinniswood, Oregon Department of Fish and Wildlife,

William.R.TINNISWOOD@odfw.oregon.gov

Carolyn Malecha, Oregon Department of Fish and Wildlife, carolyn.j.malecha@odfw.oregon.gov

Mark Hereford, Oregon Department of Fish and Wildlife, Mark.E.HEREFORD@odfw.oregon.gov

Removal of four mainstem hydroelectric dams on the Klamath River in 2024 restored volitional fish passage to headwater habitats for the first time in more than a century. This unprecedented, basin-scale reconnection provides a rare opportunity to document the initial repopulation of previously inaccessible habitats by Chinook Salmon (*Oncorhynchus tshawytscha*). In fall 2025, The Klamath Tribes Ambodat Department, in collaboration with the Oregon Department of Fish and Wildlife, implemented a strategic, basin-wide monitoring effort to document the return of fall-run Chinook Salmon upstream of Upper Klamath Lake. In this presentation, we will describe the coordinated monitoring approach used to assess the spatial distribution, abundance, and life-history characteristics of returning adult Chinook Salmon throughout Upper Klamath Lake and its major tributaries. We conducted spatially extensive foot-based, paddle-craft, and boat visual surveys to document spawning distribution and estimate escapement using redd counts and repeated live fish observations. Carcasses recovered across the basin were used to collect biological data, including fork length, sex, age structure from scale samples, and hatchery contribution inferred from coded-wire tags. This effort represents the first comprehensive documentation of Chinook Salmon spawning in the Klamath River headwaters following dam removal and establishes a critical foundation for evaluating future population expansion and recovery.

# Day 1 Presentations

**4:05 PM**

## **Klamath River Effectiveness Monitoring: 2025-2026**

Presenter: James Whelan (California Trout)

Co-Authors: Alex Corum, Karuk Tribe, [acorum@karuk.us](mailto:acorum@karuk.us)

Damon Goodman – California Trout, [dgoodman@caltrout.org](mailto:dgoodman@caltrout.org)

Bob Pagliuco – NOAA Fisheries, [bob.pagliuco@noaa.gov](mailto:bob.pagliuco@noaa.gov)

Toz Soto – Karuk Tribe, [tsoto@karuk.us](mailto:tsoto@karuk.us)

Oshun O'Rourke – Yurok Tribe, [oorourke@yuroktribe.nsn.us](mailto:oorourke@yuroktribe.nsn.us)

Ryan Bart and Jordan Ortega - The Klamath Tribes, [ryan.bart@klamathtribes.com](mailto:ryan.bart@klamathtribes.com),  
[jordan.ortega@klamathtribes.com](mailto:jordan.ortega@klamathtribes.com)

Rosemary Romero and Crystal Robinson – California Department of Fish and Wildlife,  
[Rosemary.Romero@wildlife.ca.gov](mailto:Rosemary.Romero@wildlife.ca.gov), [Crystal.Robinson@Wildlife.ca.gov](mailto:Crystal.Robinson@Wildlife.ca.gov)

Mark Hereford – Oregon Department of Fish and Wildlife, [mark.e.hereford@odfw.oregon.gov](mailto:mark.e.hereford@odfw.oregon.gov)

Keith Denton – Keith Denton and Associates, [keith8denton@gmail.com](mailto:keith8denton@gmail.com)

Nicholas A. Som – USGS California Cooperative Fish and Wildlife Research Unit, California Polytechnic University Humboldt, [Nicholas.Som@humboldt.edu](mailto:Nicholas.Som@humboldt.edu)

Cyril Michel – UC Santa Cruz, NOAA Fisheries, [cyril.michel@noaa.gov](mailto:cyril.michel@noaa.gov)

Stephanie Quinn-Davidson – Ridges to Riffles, [squinn-davidson@ridgestoriffles.org](mailto:squinn-davidson@ridgestoriffles.org)

Thomas Williams – Fisheries Ecology Division, Southwest Fisheries Science Center, National Marine Fisheries Service, [tommy.williams@noaa.gov](mailto:tommy.williams@noaa.gov)

The removal of four dams on the Klamath River has restored hydrologic connectivity to the Upper Klamath River Basin. For anadromous fish, habitat and ecological processes not available for over 100 years are now accessible. For this reason, monitoring plans focused on evaluating the reestablishment of salmon populations as they return to their historical range in the Klamath Basin is critical. Of particular interest is how many salmon and steelhead disperse into the reconnected watershed and the timing of that dispersal. The questions of interest include what are the species and life-history specific timing of fish movement into the restoration reach (i.e., location of Iron Gate Dam and upstream throughout the upper Klamath Basin) and habitat used by fish as they move through the restoration site. Our study combines a SONAR fish counting station, species composition sampling, and radio telemetry with study designs adapted from the Elwha River and other large-scale dam removals. The project will provide a toolset to support information to inform the sequencing and prioritization of future restoration and monitoring in the Klamath River as well as other dam removals around the world.

# Feedback

KBFC 2026 Annual Meeting



<https://forms.office.com/r/wS9m0Gkwew>



# Klamath Basin Fisheries Collaborative

## 2026 Annual Meeting

"If you want to go fast, go alone; if you want to go far, go together"

