

## Klamath Basin Fisheries Collaborative Spring 2022 Meeting

| February 24, 2022, Thursday Morning |   |   |  |
|-------------------------------------|---|---|--|
|                                     | DAY ONE   | <a href="#">Day One Zoom Link</a>   | Call In: 669 900 9128 US<br>ID: 859 0593 3082  |
| Time                                | Title   | Speaker   | Abstract   |
| 10:00am                             | Greetings   | Welcome & Introductions   |  |
| 10:10am                             | Invocation  | Frankie Meyers, Yurok Tribe, Vice Chair   |  |
| 10:20am                             | Participant Introductions   |   | Share a fun fisheries fact, challenge and/or something you'd like to get out of the meeting.   |
| 10:35am                             | State of Klamath Salmon   | Morgan Knechtle is a Senior Environmental Scientist Specialist with the California Department of Fish & Wildlife. Morgan has been monitoring California salmonids for the past 21 years and has specifically been working with salmonids in the Klamath basin since 2004.   | This presentation will focus on the status and trends of adult Chinook Salmon and Coho Salmon escapement in the Klamath Basin. There will be a brief overview of the methods used to generate these estimates. The data presented for Chinook Salmon will be from the years 1978- 2020 and the Coho Salmon data presented will be from 2007- 2020. Preliminary data from the 2021 season will be discussed. A discussion of what we think we know and what additional information we would like to know will be presented. |
| 11:00am                             | Break- room will be open for networking                                   |   |  |
| 11:15am                             | The Federal Perspective on Klamath Basin Salmonid Recovery and Monitoring | Tommy Williams, Research Fishery Biologist at the Southwest Fisheries Science Center for the past 24 years. The focus of his interest and research is on the ecology of Pacific salmon and trout and how populations track changes in the environment. This interest relates to how populations (or individuals, group of populations, ESU, species, community) persist and how constraints on the ability of fish to track change limit the ability of the organizational unit to persist and directly relates to his interest in stream restoration and conservation of native fish and their habitats. | This talk will discuss how a current and proposed Klamath Basin PIT Tag Array system can aid in understanding how salmonid populations are utilizing the Klamath Basin.  |
| 11:40am                             | Upper Klamath Basin PIT Studies   | Summer Burdick. Summer Burdick is a fish biologist with USGS. For over 15 years, she has conducted research on Lost River and Shortnose suckers in the Upper Klamath Basin. In 2021, she joined the USGS Columbia River Research Lab, and her research portfolio expanded to also include telemetry studies on salmon in the lower Klamath River and Sacramento Delta.  | USGS began PIT tagging endangered suckers in the Upper Klamath Basin in 1999 and installed the first PIT antenna systems in Upper Klamath Lake in 2005. Since then, multiple entities have adopted PIT tag technology and its use have expanded throughout the Upper Klamath Basin. Presently PIT data are collected on two species of trout and three species of suckers. Data are stored in a USGS managed database and used to estimate rates of recruitment, survival, growth, and bird predation.                     |
| 11:55am                             | Lunch   |   |  |



| February 24, 2022, Thursday Afternoon |  |  |  |
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|                                       | <b>DAY ONE</b>   | <a href="#">Day One Zoom Link</a>  | <b>Call In:</b> 669 900 9128 US<br><b>ID:</b> 859 0593 308   |
| Time                                  | Title  | Speaker  | Abstract   |
| 12:30pm                               | Klamath River Basin PIT Tagging Database Development Progress and Direction.<br><br>Applications of PIT Tag Data | Alta Harris is a database administrator and software developer at the USGS Klamath Falls Field Station. She has worked at the Klamath Falls Field Station since 2004, shifting her focus to data management in 2006. She creates and administers PostgreSQL and MS SQL Server databases and develops data access applications and visualizations using Python, Javascript, R and .Net. She is an active developer for the Klamath River Basin PIT Tagging Database and has worked to promote data sharing and access for the project since 2009.<br><br>Jimmy Faulkner, Yurok Tribe; Toz Soto, Karuk Tribe; Erich Yokel, Scott River Watershed Council | Multiple entities are collecting PIT tagging data in the Klamath Basin, in 2009 researchers joined together to create an online PIT tagging database to promote collaboration and make that data available to participants. In 2020 we formed the Klamath Basin PIT Tagging Working Group to actively seek funding and provide direction for the future of the project to USGS developers. This group has made significant progress towards their goals and will be providing a project status update. |
| 1:30pm                                | How do you want to use the database?   | Discussion   |  |
| 2:10pm                                | How Does another Basin-wide monitoring Collaborative Work? Lessons from the Columbia Basin                       | John Tenney, PTAGIS Program Manager. John also develops software systems for the program   | Overview of the PTAGIS database including regional governance and best practices to adapt for change.  |
| 2:30pm                                | Break- room will be open for networking  |  |  |
| 2:45pm                                | Tips and Tricks on Array Installation, Maintenance, and Power Supply   | Darrell Mitchell, Scott River Watershed Council  | Discussion of how to install and manage PIT Tag Array systems with remote power supplies.  |
| 3:00pm                                | Electronic Data Collection   | Alta Harris  | Options for electronic data collection for in hand tag detections.   |
| 3:15pm                                | Discussion: Array Management or Electronic DataCollection  | Breakout discussion group of your choice   |  |
| 3:45pm                                | Wrap up  |  |  |
| 4:00pm                                | <b>Adjournment</b>   |  |  |



## Klamath Basin Fisheries Collaborative Spring 2022 Meeting – Day 2

| February 25, 2022, Friday Morning |  |  |   |
|-----------------------------------|--|--|---|
|                                   | <b>DAY TWO</b>   | <a href="#">Day Two Zoom Link</a>  | Call in: 669 900 9128<br>ID: 844 5057 0165  |
| Time                              | Title  | Speaker  | Abstract  |
| 10:00am                           | Welcome  |  | .   |
| 10:10am                           | Upper Basin Monitoring   | <p>Mark Herford: Is the Klamath Fisheries Reintroduction Coordinator for ODFW in Klamath Falls. Prior to my current position I worked for USGS in the Klamath Basin, the Great Basin, and Mojave Desert on numerous fisheries research projects on species from Pupfish to Lahontan Cutthroat Trout. Mark has a Master of Science degree in Biology from the University of Nevada, Reno.</p>   | <p>The presentation will summarize the species-specific approaches that will be taken to reintroduce anadromous fishes into the Oregon portion of the Upper Klamath Basin following dam removal. It will highlight some of the strategies recommended to monitor the repopulation of historical habitat, with a focus on how telemetry technology may aid in this. ODFW and partners will be conducting a juvenile spring-run Chinook Salmon release study using multiple telemetry techniques this spring that will help inform reintroduction efforts.</p>  |
| 10:45am                           | Identified Life History Strategies of Coho Salmon  | <p>Jimmy Faulkner, Yurok Tribal Fisheries. Jimmy graduated with a bachelor's degree in Fisheries Biology from Humboldt State in 1998. He received a master's degree in aquaculture from University of Arkansas in 2012. He has worked for the Yurok Tribe since 2014 and one of his primary duties is analyzing data associated with the Klamath River juvenile Coho Ecology project. Previously he worked for U.S. Fish and Wildlife Service and focused on juvenile and adult salmon monitoring in the Sacramento River Basin.</p>   | <p>There are 14 known life history behaviors that have been documented for juvenile Coho Salmon in the Klamath River. In this presentation there will be a brief overview of them to gain momentum for a formal description of these behaviors in a single document. Doing so will require the collaboration among many entities and strengthen our ability to access and share data. Describing these life history behaviors is also important to assess how each persists over time.</p>  |
| 11:05am                           | Break- will be open for networking   |  |   |
| 11:20am                           | Using the Klamath Basin PIT Tag Database to inform the Stream Salmonid Simulator for Juvenile Coho Salmon in the Klamath River | <p>Russ Perry is a research fish biologist that leads the Quantitative Fisheries Ecology Section at the US Geological Survey, Western Fisheries Research Center. His team's research centers on developing novel statistical, simulation, and decision support models to inform water and fisheries management actions.</p> <p>Nick Som is a statistician with the US Fish and Wildlife Service, Arcata Fish and Wildlife Office. He works with partners and colleagues to design studies and then build and apply models to help inform resource management decision makers</p> | <p>The Stream Salmonid Simulator (S3) is a spatially explicit population model that simulates daily growth, survival, and movement of juvenile salmon in response to factors such as river flow, water temperature, habitat availability, and disease caused by C. shasta. The S3 model was recently adapted to model the complex life history strategies of juvenile Coho salmon in the mainstem Klamath River. We provide a brief overview of the S3 model for coho and highlight how data on PIT tagged juvenile coho salmon from the Klamath Basin PIT tag database was used to inform the S3 model by providing insights in movement rates, survival, and tributary use.</p> |



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| 11:40am | Estimating Survival of Migrating Fish with PIT Readers | Dalton Hance is a research statistician with the Quantitative Fisheries Ecology Section of the USGS Western Fisheries Research Center. His research focuses on mark recapture methods for anadromous fish. | PIT-tags can provide a wealth of information on the behavior and biology of tagged salmonids. However, moving beyond simple descriptions of the presence of PIT-tagged individuals at PIT-readers requires statistical models that account for non-detection. This brief training provides an (gentle) overview of statistical methods for estimating the survival and detection probabilities of migratory PIT tagged fish. We will cover the basics of study design, assumptions, and software for turning raw detection data into meaningful estimates of demographic parameters. |
| 12:00am | Lunch  |  |  |



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| <b>February 25, 2022, Friday Afternoon</b> |   |                                   |  |
|  | <b>DAY TWO</b>                            | <a href="#">Day Two Zoom Link</a> | <b>Call in:</b> 669 900 9128<br><b>ID:</b> 844 5057 0165   |
| <b>Time</b>                                | <b>Title</b>                              | <b>Speaker</b>                    | <b>Abstract</b>  |
| 12:30pm                                    | Existing and Potential Future Array Sites | Alta Harris                       | Multiple entities are collecting PIT tagging data in the Klamath Basin, in 2009 researchers joined together to create an online PIT tagging database to promote collaboration and make that data available to participants. In 2020 we formed the Klamath Basin PIT Tagging Working Group to actively seek funding and provide direction for the future of the project to USGS developers. This group has made significant progress towards their goals and will be providing a project status update. |
| 1:30pm                                     | Break room will be open for networking    |                                   |  |

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|--------|---|----------------|--|
| 1:45pm | Klamath River Basin PIT and Telemetry Monitoring Network: A Vision for Collaborative Fisheries Science in the Klamath Basin | Summer Burdick | Fish tracking infrastructure such as PIT tag and telemetry detection arrays were developed independently in the upper and lower basin. With the removal of dams from the mainstem Klamath, fish will be allowed to move between upper and lower basin for the first time in over 100 years. Existing collaborations in the upper and lower basins could be merged to advance a basin-wide fish tracking network and database. This network could incorporate complementary PIT tag and telemetry technologies to track fish movement in both small and large order streams, from headwaters to tide waters, and across life cycles. Data sharing will allow researchers within multiple institutions to assess the effects of dam removal and address specific local research questions. Archiving fish tracking data that spans multiple years could inform the development of strategies to combat the effects of climate change and other future perils to fish in the Klamath Basin. |
| 2:45pm | Wrap up   |                |  |
| 3:00pm | <b>Adjournment</b>  |                |  |