

Fisheries Workshop

Day 1 Discussions: Wednesday, July 17th 2019

Pelton Round Butte Fisheries Roadmap

Prepared by: Megan Hill, Portland General Electric; Jason Grant, Confederated Tribes of Warm Springs; Chandra Ferrari, Trout Unlimited - Annual Workshop 2019

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ABSTRACT:

The Pelton Round Butte Fish Committee Reintroduction Road Map is a high-level guide to past actions and future considerations that impact the goal of returning “self-sustaining and harvestable runs of spring Chinook, sockeye and summer steelhead” to the Deschutes basin upstream of the Pelton Round Butte Hydroelectric Project (the Project), co-owned by Portland General Electric (PGE) and The Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO).

BIOGRAPHY, MEGAN HILL:

Megan is the natural resources manager for Portland General Electric at the Pelton Round Butte Hydroelectric Project on the Deschutes River, Oregon. Megan has over fifteen years of experience in fisheries, including employment in academia, a federal agency, and PGE. She has a B.A. in Biology and Environmental Studies from Knox College, an M.S. in Environmental Science from Washington State University, and post-graduate fisheries work at the University of Georgia.

BIOGRAPHY, JASON GRANT:

Jason attended Oregon State University where he majored in Fisheries and Wildlife Science. He has worked in the Fisheries field for over 12 years, beginning as a Fisheries Technician with the Forest Service on the Siuslaw Ranger District, then moving to the Willamette National Forest. Upon the realization that seasonal work does not support a mortgage payment, he accepted a Fish Habitat Biologist position with the Confederated Tribes of the Umatilla – La Grande Field Office. In this position, Jason furthered his knowledge of aquatic restoration practices. In early 2011, he accepted a position with the Confederated Tribes of the Warm Springs. In both positions, he has managed many active and passive stream restoration projects, as well as coordinated and developed relationships with project partners. When he's not working, you might find Jason poorly casting his spey rod while swinging flies for steelhead, gardening or hiking with his family.

BIOGRAPHY, CHANDRA FERRARI:

Chandra has worked for Trout Unlimited for over seven years and advises the organization and its partners on policy matters, legislative issues, stakeholder negotiations and regulatory proceedings in the Pacific Northwest that affect cold-water fish populations. She has been at her current position for over five years. Previously, she was TU's California Water Policy Director where she managed TU's Central Valley Program and worked at the state level to enhance instream flows, reform water law and promote the reasonable use and public trust doctrines. Prior to joining TU, she worked for over five years as an attorney for the California Department of Fish and Wildlife where she advised the Department on

matters concerning imperiled fish and wildlife species with a particular emphasis on fishery and water issues in California’s Central Valley and the Sacramento-San Joaquin Bay-Delta. Chandra grew up in Harrisburg, Oregon and graduated from the University of Pacific School of Law and the University of California Davis with a BS in Animal Science and Management. She enjoys reading, hiking, learning cello and chasing around her four kids.



Deschutes Basin Habitat Conservation Plan

Prepared by: Bridget Moran; U.S. Fish and Wildlife Service - Annual Workshop 2019

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ABSTRACT:

Eight irrigation districts and the City of Prineville (Applicants) are working with the US Fish and Wildlife Service and the National Marine Fisheries Service on a Habitat Conservation Plan (HCP) for the Deschutes River basin. An HCP is a plan developed under the Endangered Species Act that provides non-federal entities with an incidental take permit. The purpose of the incidental take permit is to exempt non-Federal permit-holders—such as States and private landowners— from the ‘take’ prohibitions identified in the ESA. HCPs describe the anticipated effects of the proposed taking; how those impacts will be minimized, or mitigated; and how the HCP is to be funded.

The Deschutes Basin HCP addresses the impacts to the Oregon spotted frog (*Rana pretiosa*), Middle Columbia River steelhead trout (*Oncorhynchus mykiss*), bull trout (*Salvelinus confluentus*, Chinook salmon (*Oncorhynchus tshawytscha*) and the sockeye salmon (*Oncorhynchus nerka*). Through conservation measures and projects, flows will be restored to the Deschutes River and its tributaries to

address the impacts to the covered species. FWS anticipates a draft will be available for public comment in the fall of 2019.

BIOGRAPHY:

Bridget Moran is the Field Supervisor for the Bend Field office of the US Fish and Wildlife Service. Bridget manages a team of biologists working on a variety of conservation efforts in Central Oregon. Currently the office is focused on water management and aquatic species' health in the Deschutes River, sagebrush and sage grouse conservation, as well as dry forest, desert fish, golden eagle permitting and other topics related to threatened and endangered species in Central Oregon.

Prior to joining the Bend office, Bridget managed a team of biologists and managers in the Lacey (Olympia), WA USFWS office working on the development and implementation of habitat conservation plans and performing over 500 Endangered Species Act Section 7 interagency consultations a year. Before joining the USFWS, Bridget worked for the State of Washington for 13 years. During that time she worked for three state agencies (Agriculture, Fish & Wildlife, and Natural Resources) where she worked at the executive level on topics including forestry, agriculture, aquatic land management, salmon recovery and a variety of other topics. Bridget has a Bachelor of Science degree in Microbiology for the University of California-Davis, and a Master of Science degree in Environmental Toxicology from the University of Wisconsin-Madison.

The Reconnection of Large Wood Transport between the Upper Deschutes River and the Lower Deschutes River

Prepared by: Micah Bennett; Portland General Electric - Annual Workshop 2019

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ABSTRACT:

After dam construction, large wood transport from the upper Deschutes basin to the Lower Deschutes River was halted due to dam construction. In 2007 large wood transport between the Upper and Lower Deschutes River was reconnected. To date 298 pieces of large wood have been moved from the Upper Deschutes River to the Lower Deschutes River. In the Metolius arm of Lake Billy Chinook, large wood found above Rattle Snake Point is anchored to shore and snorkel surveys are conducted on them twice in the spring for fish and wildlife use. All large wood found in Lake Billy Chinook in 2016, 2017 and 2018 with the exception of wood found above Rattle Snake Point is being held for incorporation into Phase II of the Gravel Study. Snorkel surveys were conducted on the Lower Deschutes River to determine fish and wildlife use of a subsample of previously placed large wood, once in the spring and once in the early summer. Wood that washed downstream from its original placement location was also tracked from the re-regulation dam to White Horse Rapids. The furthest point downstream that wood has been located is above Harpham Flats.

BIOGRAPHY:

Micah Bennett is currently a fisheries biologist for Portland General Electric at the Pelton Round Butte Project. Since 2009, he has participated in all fisheries activities conducted at PRB, including extensive time spent on the fish habitat studies. He previously worked for the USDA Forest Service doing habitat surveys, habitat restoration and the reintroduced bull trout population in the upper Willamette River; and Oregon Department of Fish and Wildlife conducting angler surveys and work on the Metolius basin bull trout population. Micah graduated from Oregon State University with Bachelors in Fisheries Biology in 2009. In his free time he enjoys fishing, camping, and water sports with his family.



Warm Springs Reservation Aquatic Restoration Strategy

Prepared by: Scott Turo; Confederated Tribes of Warm Springs, Oregon - Annual Workshop 2019

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ABSTRACT:

In 2018 the Warm Springs Tribal Fisheries Department completed an Aquatic Restoration Strategy for all watersheds supporting anadromous fish on the Reservation. The goal of the strategy is to provide actionable information to tribal policy makers, and for use as an outreach tool to communicate with a wide variety of audiences ranging from the tribal public to technical reviewers and funding sources. Limiting factors by subwatershed and life stage were analyzed for each species to assess fish benefit based on geomorphic, habitat, and water quality conditions. This analysis was formalized into a Prioritization Ranking Matrix where restoration actions can be evaluated to determine where the greatest potential exists to restore and enhance high quality ecological conditions that benefit anadromous fish populations. Through this process 40 potential projects were scored and ranked using the matrix with conceptual restoration designs provided for twelve potential projects.

Additionally, the lower six miles of Shitike Creek flowing through the community of Warm Springs was considered a focal area, where floodplain mapping and conceptual restoration planning were completed to inform future development and fish habitat potential.

BIOGRAPHY:

Scott is the Fish Habitat Program Supervisor for the Warm Springs Tribes where his work focuses on restoration and protection of aquatic habitats. He has 19 years of experience as a biologist and many more years as migrant fisheries technician working on projects from Alaska to California. Fifteen of those years have been in Warm Springs, Oregon developing and implementing restoration projects in the Deschutes and John Day Basins.



Deschutes River Conservancy Updates: Streamflow Restoration Progress & Key Initiatives/Projects

Prepared by: Kate Fitzpatrick, Natasha Bellis and Ron Nelson, Deschutes River Conservancy - Annual Workshop 2019

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ABSTRACT:

For over two decades, the Deschutes River Conservancy (DRC) has partnered with local entities and irrigators to restore streamflow to rivers and streams in the Deschutes Basin while meeting agricultural and municipal needs. This presentation will 1) share the cumulative results of DRC's streamflow restoration program in key reaches in the Deschutes Basin; 2) provide a summary of key findings from the recently-completed Upper Deschutes Basin Study; 3) provide information on priority initiatives and projects including the McKay Creek Water Rights Switch; 4) share a brief video summarizing the streamflow restoration partnership and outcomes in Whychus Creek.

BIOGRAPHY, KATE FITZPATRICK:

Kate is the Program Director at the Deschutes River Conservancy where she develops and implements collaborative strategies to restore water to the rivers and streams of the Deschutes Basin. She coordinated the Basin Study Work Group, a multi-stakeholder collaborative that managed the Upper Deschutes River Basin Study to meet water needs in our rivers and community over the next 50 years. Kate joined the DRC team in 2004. She has a BA in Geology from Colgate University and a MS in Environmental Studies from the University of Oregon.

BIOGRAPHY, NATASHA BELLIS:

Natasha joined the Deschutes River Conservancy team in 2016. She provides strategic oversight of the organization’s stream flow restoration programs, including negotiating streamflow restoration agreements and convening and facilitating stakeholder processes in priority reaches. Natasha moved to Bend in 2015 from Portland, OR where she worked as the Flow Restoration Director for The Freshwater Trust. Prior to joining the Deschutes River Conservancy, Natasha developed conservation land acquisitions for the Deschutes Land Trust. Natasha holds a JD from Lewis and Clark Law School with a certificate in Environmental and Natural Resource Law.

BIOGRAPHY, RON NELSON:

Ron Nelson joined the Deschutes River Conservancy in 2019 as Executive Director. Ron was a founding DRC board member, as well as a founding member of the Oregon Water Trust, now The Freshwater Trust. A longtime progressive leader and innovator in the water conservation and irrigation sector, Ron returned to Central Oregon from California where he managed an irrigation district system that included hydroelectric projects, parks, as well as domestic water distribution systems. He also served on the Oregon Water Resources Commission helping guide statewide water policy and management. Ron brings nearly 40 years of experience in water management, leadership, public relations, development of water law and policy to the DRC, as well as a passion for the outdoors.



Whychus Creek Project Updates

Prepared by: Mathias Perle, Upper Deschutes Watershed Council - Annual Workshop 2019

Mathias Perle, Upper Deschutes Watershed Council

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ABSTRACT:

The Upper Deschutes Watershed Council actively works in Whychus Creek on habitat restoration, fish passage, fish screening and monitoring. Updates will be provided on upcoming and continuing projects including results from the last two years of monitoring at Whychus Canyon Preserve Reach 4 where a mile of habitat restoration occurred in 2016.

BIOGRAPHY:

Mathias has a diverse project management background in environmental and water resource consulting. As the Restoration Program Manager at the Upper Deschutes Watershed Council, Mathias has spent the last 11 years concentrating on forming strong ties with Deschutes Basin stakeholders and implementing projects in habitat restoration, fish passage and screening. Mathias has worked on 6 miles of habitat restoration projects along Whychus Creek which is the focus of watershed scale restoration efforts to support salmon and steelhead reintroduction in Central Oregon.

Mathias holds an M.S. in Hydrologic Sciences and an M.S. in Civil and Environmental Engineering both from the University of California, Davis and a B.S. in Geology from the University of Delaware.



Lower River Fisheries

Prepared by: Rod French; Oregon Department of Fish & Wildlife - Annual Workshop 2019

Rod French, Oregon Department of Fish and Wildlife

District Fish Biologist

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ABSTRACT:

The Oregon Department of Fish and Wildlife monitors the population status and relative health of several fish populations in the Lower Deschutes River. The 2018 fall Chinook adult escapement was down from the 2017 return numbers, and continued below the long term average. Spring Chinook returns continue to be depressed, with alarmingly low numbers in 2018, and preliminary 2019 data suggests a similar status. Summer steelhead escapement was below the 5-year average in 2017-18, and run year 2018-19 experienced some of the lowest escapement since the 1990's. Relative health, and fitness of resident rainbow trout remained stable, and showed no signs of declines. A rainbow trout abundance survey conducted in the Nena Creek area, showed a robust population of adults quite similar to numbers observed historically in the same reach. Smallmouth bass surveys continued to detect a summer migration into the Lower River, but no evidence of natural production, or population establishment has been observed.

BIOGRAPHY:

Rod French is the District Fish Biologist for the Oregon Department of Fish and Wildlife's Mid-Columbia Fisheries District. He has worked for the department for 30 years, in a variety of positions across the state in both a research and management role. He has worked in the Lower Deschutes Basin for over 20 years.



Lower River Fire

Prepared by: Rod French; Oregon Department of Fish & Wildlife- Annual Workshop 2019

Jeremy Thompson; Oregon Department of Fish and Wildlife
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ABSTRACT:

The Deschutes River Canyon, like many areas in the west has seen a drastic change in vegetative species composition due to an extensive grazing history, changes in fire regime and invasion of exotic annual grasses. After the fire season of 2018, The Oregon Department of Fish and Wildlife (ODFW), in partnership with multiple agencies, non-profit, and private landowner partners initiated a landscape scale restoration project with the goal of reducing competition from annual grasses while increasing habitat values within the Deschutes River corridor.

BIOGRAPHY:

Jeremy Thompson is the District Wildlife Biologist and the manager of the Lower Deschutes Wildlife area for the Oregon Department of Fish and Wildlife in The Dalles. He has his B.S. in Wildlife Management from Oregon State University, and has worked for ODFW in various wildlife and habitat positions throughout the state.



Lower River Phase II Gravel Augmentation Design

Prepared by: Rebekah Burchell; Portland General Electric- Annual Workshop 2019

Rebekah Burchell; Portland General Electric

Senior Fisheries Biologist

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ABSTRACT:

Phase II gravel augmentation in the lower Deschutes River will be conducted at two sites with island and side channel locations. Augmentation will look at supplementing existing spawning and rearing habitats for fall Chinook, summer steelhead and redband trout. It will also evaluate the geomorphic and biological responses to augmentation. Two sites were chosen based on the geomorphic and biological suitability, as well as logistical and biological constraints. Site 1 (Zane Jackson property) is located on the Confederated Tribes of Warm Springs Reservation of Oregon side of the river and site 2 is located at Riffle Ranch approximately 1 mile downstream of the Zane Jackson property. Gravel augmentation will occur during September 2019. ¹

¹ Stillwater Sciences, Portland General Electric Company, and the Confederated Tribes of the Warm Springs Reservation of Oregon. 2017. Deschutes River Phase II Lower River Gravel Study Plan. Prepared by Stillwater Sciences, Arcata, California for Portland General Electric, Portland, Oregon.

BIOGRAPHY:

Rebekah Burchell is currently a fisheries biologist for Portland General Electric at the Pelton Round Butte Project. She has been with PGE for just over 10 years. She is currently a senior biologist leading the Adult Migration Study and Phase II Lower Deschutes Gravel Study. Her main focus is to ensure safe upstream passage of salmon and steelhead adults captured at the Pelton Adult Trap. She is also Project Manager for the Phase II gravel study. Prior to working for PGE, she spent nearly 9 years working for the Confederated Tribes of Warm Springs.

Deschutes Water Quality Study Results

Prepared by: Joe Eilers; MaxDepth Aquatics, Inc.

Joe Eilers; MaxDepth Aquatics, Inc.

Hydrologist

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ABSTRACT:

PGE initiated a water quality study of the Pelton Round Butte Project and the Lower Deschutes River, with sampling starting in 2015 and ending in 2017. The study design included two sampling sites in Lake Billy Chinook and Lake Simtustus, 12 sites in the Lower Deschutes River, and sites in the major tributaries. Sites were sampled for *in-situ* measurements, nutrients and plankton (in the impoundments) and periphyton (in the lower river). Results from the forebay sample sites indicate that Lake Billy Chinook has become slightly more productive, whereas Lake Simtustus has experienced a slight decrease in productivity. The Lower Deschutes River is intentionally warmer in the spring, a result of Selective Water Withdrawal (SWW) operations, which began in 2010. However, the SWW also allows for the export of surface phytoplankton from Lake Billy Chinook, through Lake Simtustus and into the lower river. The nutrient results in the lower river show slight declines in phosphorus from the ReReg Dam to the mouth, whereas nitrate concentrations are elevated at ReReg Dam and decline steadily towards the mouth. The periphyton community in the lower river is dominated by nitrogen-fixing cyanobacteria and filamentous green algae. Numerical models were applied to the impoundments and the lower river to explore watershed management, climate, and Project operations scenarios for modifying water quality and algae in the lower river. These and other results will be presented and discussed.

BIOGRAPHY:

Joe received a bachelor’s degree in biology from the University of California and a MS degree in water resources from the University of Wisconsin a long time ago. He worked for the Wisconsin Dept. of Natural Resources and was a senior scientist at the EPA lab in Corvallis. He has been consulting in water resources since 1988. He has nearly 50 peer reviewed publications and book chapters in hydrology, water chemistry and aquatic biology. He holds professional certifications in hydrology, lake management and fisheries. He also participated in water quality studies of the reservoirs and Deschutes River for the PRB licensing effort in the 1990s.

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Open House: Water Quality and Pelton Project Information

4:00-6:00pm, located in Cascades H & I- adjacent to buffet area

ABSTRACT:

In February 2015, PGE and the Confederated Tribes of Warm Springs kicked off an extensive multi-year Water Quality Study to gain a better understanding of water quality conditions in the Deschutes River. We are pleased to announce the upcoming release of this report, and invite you to join us for an open house event to learn more about the study results and our greater environmental work in the Deschutes Basin. Light refreshments will be provided. ***We look forward to seeing you there!***

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Fisheries Workshop
Day 2 Discussions: Thursday, July 18th 2019

2018 Adult Migration, Survival and Migration

Prepared by: Rebekah Burchell; Portland General Electric- Annual Workshop 2019

Rebekah Burchell; Portland General Electric
Senior Fisheries Biologist
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ABSTRACT:

Specific objectives of the Adult Migration Test and Verification Study are to determine: migration timing, spawning distribution, spawning abundance, interspecific and intraspecific competition, and survival to spawning for adult *Oncorhynchus mykiss* (steelhead), *Oncorhynchus nerka* (sockeye), and *Oncorhynchus tshawytscha* (Chinook) released upstream of the Project. We will present the results for the 2018 adult Chinook, sockeye, and steelhead returning to the Pelton Adult Fish Trap between September 2017 and November 2018.¹

¹ Burchell, R.D. 2019. 2018 Adult Migration, Survival, and Spawning Test and Verification Study. Portland General Electric Company. Portland, Oregon.

BIOGRAPHY:

Rebekah Burchell is currently a fisheries biologist for Portland General Electric at the Pelton Round Butte Project. She has been with PGE for just over 10 years. She is currently a senior biologist leading the Adult Migration Study and Phase II Lower Deschutes Gravel Study. Her main focus is to ensure safe upstream passage of salmon and steelhead adults captured at the Pelton Adult Trap. She is also Project Manager for the Phase II gravel study. Prior to working for PGE, she spent nearly 9 years working for the Confederated Tribes of Warm Springs.

2018 Juvenile Migration Test and Verification Study

Prepared by: Gonzalo Mendez; Portland General Electric - Annual Workshop 2019

Gonzalo Mendez, Portland General Electric

Fisheries Biologist

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ABSTRACT:

A total of 1,600 naturally-reared Chinook (*Oncorhynchus tshawytscha*) and 496 naturally-reared steelhead (*Oncorhynchus mykiss*) smolts were captured and PIT tagged in screw traps in 2018 on the Metolius, Crooked and Whychus. We released 1,200 PIT-tagged hatchery Chinook smolts and 800 PIT-tagged hatchery steelhead smolts at the head of the individual arms in Lake Billy Chinook (LBC). ODFW also PIT-tagged and released 3,600 hatchery Chinook and 3,200 hatchery steelhead smolts into the upper tributaries. The number of salmon and steelhead smolts entering LBC from each tributary are as follows: 2,951-4,941 naturally-reared Chinook from the Metolius River, 1,518-2,110 from Whychus Creek and 3,315-5,969 from the Crooked River, 1,638-2,894 naturally-reared steelhead from Whychus Creek and 700-4,400 from the Crooked River. Hatchery-reared Chinook and steelhead smolts released at the confluence of each tributary with Lake Billy Chinook and captured at the Selective Water Withdrawal (SWW) facility at Round Butte Dam ranged from 38.3% to 66.0% and 15.8% to 21.8% respectively. These are some of the highest percentages of PIT-tagged smolts collected at the SWW we have observed in 12 years of operation. Naturally-reared screw trap released Chinook and steelhead ranged from 11.3% to 37.7% and 12.8% to 16.8% respectively. These results are biased low as we are not able to remove the confounding effect of natural mortality in the tributaries from these results. The timing and numbers of salmon and steelhead emigrating from LBC at the SWW were as follows: Chinook migration distribution was bi-modal peaking in early-April and again in early-May, the majority migrated out by late-May with a total of 19,317 smolts. Sockeye (1+ yearling kokanee) migration was normally distributed peaking in late-April with a total of 45,309 smolts.

Steelhead catch was also normally distributed and peaked in mid to late-May with a total of 8,831 smolts. Lastly, travel times and relative survival of each smolt species handled at the SWW, transported to the Lower Deschutes and detected passing Bonneville Dam are the following: Chinook median travel time was 4.6 and 5.6 days in naturally and hatchery-reared smolts respectively. Sockeye median travel time was 4.9 days. Steelhead median travel time was 5.5 and 5.2 days in naturally and hatchery-reared smolts respectively. Survival of sockeye, naturally-reared Chinook and steelhead smolts were estimated to be 39.2, 35.6, and 43.5%, respectively, while hatchery-reared Chinook, and steelhead smolts were estimated to be 44.8 and 61.8%, respectively.

BIOGRAPHY:

Gonzalo Mendez works for Portland General Electric as a fisheries biologist. He has been with the company for almost five years. His main focus is to conduct Test and Verification studies associated with Juvenile Migration. On a yearly basis PGE monitors the movement and survival of released spring Chinook and summer steelhead from the major tributaries of the Deschutes basin to the Fish Transfer Facility (FTF) in Lake Billy Chinook. To accomplish this PGE deploys screw traps to capture and tag out-migrating smolts. Gonzalo earned a Bachelor’s degree in Wildlife and Fisheries Conservation at University of Massachusetts, Amherst in 2002. He has been conducting fisheries related science for over 15 years and in that time he has worked in marine environments, participated in Atlantic salmon re-introduction, conducted fish passage work, and stream habitat assessments. In his spare time he pursues a variety of outdoor activities including fly fishing, hiking, snowboarding, and watching sports.

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Reintroduction Updates

Prepared by: Taylor McCroskey; Oregon Department of Fish & Wildlife - Annual Workshop 2019

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ABSTRACT:

There are some significant changes being made to the reintroduction program in 2020. These changes include: discontinuation of fry stocking; increased smolt releases from 50,000 to 100,000; setting up acclimation facilities for smolts in the Metolius, Whychus and Crooked; Summer steelhead smolts will be reared at Wizard Falls Hatchery and spring Chinook smolts will be reared at Fall River Hatchery; Change in rearing practices of summer steelhead and spring Chinook. These adaptive management changes were agreed upon via the Fish Committee and will be implemented in the coming years. Studies will be performed in the future to determine the success related to these management changes.

BIOGRAPHY:

Taylor McCroskey is the Pelton Round Butte Mitigation Coordinator for Oregon Department of Fish and Wildlife, working primarily on the reintroduction of anadromous fish in the upper Deschutes basin and the FERC license of the Pelton Round Butte Hydroelectric Project. Taylor has a variety of fisheries experience, including working for tribal, state and private entities. He has a both a B.A. and a M.S. in Science from Eastern Washington University. Taylor is a very passionate outdoorsman and spends as much time outside chasing fin, fur or feather as he can.



The Lower Crooked River Strategic Restoration Project; Where Are We and Where Are We Going?

Prepared by: Garry Sanders; Crooked River Watershed Council - Annual Workshop 2019

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ABSTRACT:

The Crooked River has ~125 miles of potential habitat for anadromous fish and it has been a focus for restoration efforts as part of the reintroduction of anadromous fish into the Upper Deschutes Basin. To date, the primary restoration focus within the anadromous area in the Crooked River Watershed has been fish passage, including fish passage implementation at 13 of 18 sites with one project currently in construction and two additional sites in the planning phase. Our goal is full volitional fish passage throughout the reintroduction area by 2025.

The CRWC and our partners are now transitioning our work focus to target habitat conservation and restoration. The CRWC has completed restoration action plans on both the Lower Crooked River as well as McKay Creek. These planning projects identified potential restoration actions that could be implemented in both areas that would benefit instream and riparian habitat. Building on that work, in 2018 the Crooked River Watershed Council (CRWC) signed a partnership agreement with the Natural Resources Conservation Service (NRCS) to implement a Regional Conservation Partnership Program (RCPP) on 19 miles of the Crooked River from Prineville downstream. The identified resource concerns of the RCPP are inadequate habitat for fish and wildlife habitat and water quality degradation. The Program Area includes 6,200 acres and 19 miles of the Crooked River as well as 0.5 miles of McKay Creek and 0.7 miles of Ochoco Creek. The agreement will last until 2022 and includes ~\$7 MM for planning, engineering and design, easements, and financial assistance to landowners to implement a suite of 27 potential conservation practices.

The RCPP is currently in progress and conducting conservation planning with interested landowners. In addition, we are currently completing survey, hydraulic modeling, and design work for future instream restoration work to benefit instream aquatic habitat. In addition, we are developing match funding for the project through a diverse array of grant funders, including the Portland General Electric Pelton Fund, the Oregon Watershed Enhancement Board, and the U.S. Fish and Wildlife Service Partners Program. We anticipate project planning to extend into 2020 and the implementation of restoration and conservation actions beginning in 2020 and extending through 2025.

BIOGRAPHY:

Garry Sanders is currently a Project Manager for the Crooked River Watershed Council in Prineville. He has been with the CRWC since 2010 and currently oversees all aspects of project planning and implementation for a suite of upland, riparian, and instream projects in both the lower and upper Crooked River watersheds. Garry’s academic background is a unique combination, with a M.S. in aquatic biology from Grand Valley State University in Michigan and a B.A. in geosciences from Williams College in Massachusetts. When not diving deep into watershed restoration work, Garry is usually fishing, biking, hiking or exploring the outdoors of central and eastern Oregon.

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Opal Springs Fish Passage

Prepared by: Finlay Anderson; Kleinschmidt, Chris Gannon; Crooked River Watershed Council - Annual Workshop 2019

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ABSTRACT:

After 10 years of active discussion, negotiation, and financial planning, volitional fish passage at Opal Spring is nearly complete. Anticipated to be commissioned in the fall of 2019, the facilities will connect over 120 miles of habitat for native migratory fish species. This presentation briefly reviews project history and objectives, details some of the construction challenges and achievements and previews the 1st year work plan for the District and the members of the Opal Springs Fish Passage Workgroup.

The Crooked River Watershed Council will provide an overview of construction history through photos, and video.

BIOGRAPHY, FINLAY ANDERSON:

Finlay Anderson has worked on Hydro licensing and compliance issues since 2002, and is a Senior Regulatory Consultant with Kleinschmidt Associates. Finlay has a Master of Science degree in Marine Resource Management from Oregon State University; his work emphasizes the integration of agency consultation, and strategic planning around FERC licensing and regulations. Finlay has worked on early implementation and compliance for the Pelton Round Butte Hydroelectric Project, and has facilitated the Technical Review Team process for the Pelton Fund since its first round of application in 2006, and has been the project manager for the Deschutes Valley Water District’s efforts to provide fish passage at the Opal Springs Hydroelectric Project. He serves on the boards of the Northwest Hydroelectric Association and the Multnomah Soil and Water Conservation Districts.

BIOGRAPHY, CHRIS GANNON:

After working for the US Forest Service (San Juan and Mount St Helens), The Confederated Tribes of Warm Springs, Jefferson County as the Community Development Department Director, and a limited duration project manager position at ODEQ in Portland, all over the course of 22 years, Chris started his current position at the Council in 2011. Work at the Council focuses on both upland watershed improvements and fish reintroduction in the lower Crooked River geography, primarily addressing fish passage barriers as a first priority. The Council has begun working on habitat issues and will focus future attention on water quality, both have room for improvement in the watershed. Any spare time for Chris is spent in the Central Oregon outdoors or at a Portland Timbers match.



GENETIC MONITORING OF SOCKEYE SALMON REINTRODUCTION

Prepared by: Andrew Matala; Andrew P. Matala LLC, Peter F. Galbreath; Columbia River Inter-Tribal Fish Commission- Annual Workshop 2019

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ABSTRACT:

Columbia River Tribes have recently initiated efforts to restore naturally spawning anadromous Sockeye Salmon populations to historic regions of the Columbia River Basin from which the indigenous populations were extirpated. Beginning in 2010, co-managers in the Deschutes River Basin, including The Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO), initiated an effort to generate an anadromous Sockeye Salmon run based on the local landlocked *O. nerka* (presumably kokanee) population in Lake Billy Chinook (LBC).

This approach was implemented in part to guard against disease risks from use of out-of-basin stocks, but more importantly to capture historical Deschutes River Sockeye Salmon genes which may have perpetuated in the contemporary *O. nerka* population from the pre-dam era. Results of genetic structure analysis have shown that LBC *O. nerka* are genetically distinct from the population that resides in Suttle Lake, and are also genetically distinct from other *O. nerka* populations in the Columbia River Basin. Moreover, genetic analyses indicate that the LBC population identifies more closely with extant populations of Sockeye Salmon (Wenatchee, Osoyoos, and Redfish lakes) than with Columbia Basin kokanee stocks in our reference population baseline.

In 2016 there were ~530 Sockeye Salmon that returned to the Pelton Adult Trap. Of these, we determined that 92% genetically assigned to the LBC population, of which four were confirmed to have passed Bonneville Dam during upstream migration, providing further evidence of an anadromous life history. Subsequently, however, adult returns exhibited a dramatic drop in number: 57 in 2017, and 49 in 2018.

The 2018 return included 46 fish that were genetically assigned (100% statistical likelihood) to the LBC population, 1 Suttle Lake assignment, and 1 stray Sockeye Salmon from Osoyoos Lake. Interestingly, of 1,800 Sockeye Salmon sampled by CRITFC at Bonneville Dam for genetic analysis in 2018, three (0.17%) were identified as members of the LBC population, though these fish (among the later returning fish at Bonneville Dam) were not among the 49 sampled at the Pelton Adult Trap.

Sockeye Salmon returning to the Pelton Adult Trap in 2018 had a mean fork length size that was significantly smaller ($P < 0.001$) compared to Sockeye Salmon from the Wenatchee Lake and Osoyoos Lake populations. Thus far the results of genetic monitoring remain inconclusive regarding whether or not the local population, which has been heavily influenced by kokanee stocking, retains any of the historical Deschutes River Basin Sockeye Salmon gene pool.

A proportion of smolts transported downstream at the SWW each year appear to be completing an anadromous life history, but questions remain regarding the migratory behavior of LBC fish during out-migration, and their subsequent ocean routes and duration of time at sea. A possible late return timing of LBC compared to other Columbia River stocks may significantly influence escapement of fish to the Deschutes Basin, where later returning fish may incur higher mortality as a consequence of rising summer water temperatures.

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Kokanee Abundance: Lake Billy Chinook & Suttle Lake

Prepared by: Jeff Hogle, Confederated Tribes of the Warm Springs Reservation- Annual Workshop 2019

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BIOGRAPHY:

Jeff Hogle is a fisheries biologist with CTWS in Warm Springs, Oregon. He has a B.S. and M.S. in Range Management and Water Resources from the University of Wyoming in Laramie, Wyoming.

Middle Deschutes Community Programs

Prepared by: Andy Neary, Middle Deschutes Watershed Council- Annual Workshop 2019

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ABSTRACT:

In comparison to adjoining Deschutes County, opportunities to participate in environmental education and watershed stewardship are limited in Jefferson County. Meanwhile, there is a need to foster an understanding of the wealth of natural resources present in the area. This presentation will discuss current efforts by the Middle Deschutes Watershed Council and partner organizations in Jefferson

County to engage students in environmental education programming and community members in environmental stewardship. The watershed council is currently working with partner organizations to expand programming in the area and welcomes input from conference attendees.

BIOGRAPHY:

Andy Neary is the Council Coordinator for the Middle Deschutes Watershed Council based out of Redmond, OR. Prior to joining the watershed council, Andy spent 10 years working in conservation, restoration, youth empowerment and environmental education, primarily in Central Oregon. He holds a B.A. in Environmental Studies from the University of Oregon and a M.S. in Rangeland Ecology from Oregon State University.



A big THANK-YOU to presenters for all the effort involved in sharing your Deschutes basin studies and projects.

This concludes our 25th annual PRB Workshop. We appreciate your attendance and hope to see you next year!



Thoughts on how can improve the Workshop next year?

We would love to hear from you. Please send any feedback to: Tanya.sosnowski@pgn.com