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Lake Roosevelt Forum

NEWSletter

WINTER 2020

Carry on,
Lynne Brougher Page 2

The River Mile Receives
\$100,000 EPA
Education Grant Page 3

Columbia River System
Operations Joint Record
of Decision Released Page 4

EPA Remedial
Investigation Focusing on
Baseline Ecological Risk
Assessment Page 5

Soil Cleanup of Residential
and Common-Use Areas
in Northport Page 6

Lake Roosevelt Continues
to Support Odessa
Water Needs Page 7

Aquatic Invasive Species
Defenses Holding Page 8

Lake Roosevelt
Updates Page 9

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Upper Columbia Salmon Reintroduction Continues to Gain Momentum



Colville Confederated Tribes release salmon upstream of Chief Joseph Dam

This is a story of resilience and passion. Starring salmon in the Upper Columbia, the storyline is evolving with embers of hope that are beginning to catch fire.

In 2017, the Spokane Tribe of Indians released 753 yearling chinook in Tshimikain Creek, which is located on the eastern side of the Spokane's Reservation. As Tshimikain enters the lower Spokane River, its waters flow through Little Falls Dam, into Lake Roosevelt and the Columbia River about 26 miles downstream. Using PIT (Passive Integrated Transponder) tags, the tribe

tracked their migration to the Pacific. 89 of these fish were detected in various bypass facilities, estuary trawler nets, avian colonies, and adult fishways (ladders).

A stir occurred at the 2019 Lake Roosevelt Forum Conference when the Spokane Tribe announced one had made it to the ocean by avoiding all the nets, hooks, birds, sea lions and orcas, then travelled back up the Columbia through 9 salmon ladders and found its way into the Colville Tribes Chief Joseph Hatchery ladder. The Colville Tribes gladly returned this fish to the Spokane Tribe.

CONTINUED ON PAGE 4

Carry on, Lynne Brougher

If you turn the clock back to 1991, a young woman named Lynne Brougher traveled to Lake Roosevelt for the first time. She's been a fixture serving our communities for two federal agencies ever since. On August 1, 2020, Lynne retired from the Bureau of Reclamation.

"To know Lynne is to know what people mean when they refer to someone as *solid*," Forum Executive Director Andy Dunau said. "I just never had to worry about her being responsive, the quality of information we were receiving, or her sincerity. If she could help, she would."

Lynne first came to the area as the South District Interpreter for the National Park Service (NPS) at Lake Roosevelt National Recreation Area. By the time she joined Reclamation in 2007, she was NPS's Chief of Interpretation. For Reclamation, she was their Public Affairs Specialist stationed out of Grand Coulee Dam.

A core perspective for Lynne is "balance." At both the Reclamation and NPS, she was dedicated to their individual missions. At the same time, however, she was an equally devoted member of the community. She's found striving to balance federal vs. community perspectives and priorities is as much art as science. The Brougher method is to keep talking and finding ways to work together.

A simple example is lake levels during the Fourth of July weekend. At that time of year, the NOAA Fisheries 2008 Federal Columbia River Power System Biological Opinion required a full lake by the end of June to ensure adequate water supply in the fall and winter. This operation meant high lake levels on the busiest weekend of the year, causing beaches people count on for recreation to be underwater. Finding balance resulted in federal agencies voluntarily keeping lake levels down a couple of feet to expose beaches, then filling the lake after the holiday weekend.

"There will always be tensions," said Lynne. "There have been times in the past it was pretty stressful. When I first came, NPS had several encroachment issues (people building over the federal property line), and the community wasn't happy about the removal of private docks." Looking forward, she recognized that balancing environmental sensitivity and supporting recreation while delivering power, irrigation, and flood control benefits will continue to be challenging, but the key is to understand everyone's perspectives and work toward common goals.

Another perspective is to appreciate what you have and take advantage of opportunities that come your way. Lynne stated, "I'm a native of Detroit. But dating back to when



Lynne Brougher over the years

I spent summers on my grandparent's farm, I knew I preferred the rural lifestyle. And as I went through college, I discovered how much I enjoyed education and talking to the public and students about the environment, history, and natural resources."

So, when Lynne applied for a volunteer position with the Student Conservation Association right out of college, her focus was on following her interests not the money. "I got a uniform, travel, housing, and a tiny stipend," said Lynne. "But what I really got was the doorway to a career I love."

Lynne laughed when she recalled what she thought when that career took her to Lake Roosevelt. "I was thinking I was headed to the greenery of the Cascades not the high desert." But she quickly told friends and family she found clover of a different sort. "Where else can you be in a rural area with ocean, cities, trees, rainforests, and mountains all within a 4- to 6-hour drive?"

Thankfully, Lynne and her family will continue to call Wilbur, WA their home. You may see her walking along Lake Roosevelt on one of her favorite beaches during the non-summer months. "It's quiet, open and expansive. It is not unusual to see a variety of wildlife. Why move? This is as good as it gets," said Lynne. Or you may see her volunteering. "I look forward to having the time to be of service in my community."

Carry on, Lynne. We look forward to seeing you out and about. 🌟

The River Mile Receives \$100,000 EPA Environmental Education Grant



The River Mile (TRM) network program received a two-year, \$100,000 EPA Environmental Education (EE) grant. It will support TRM's efforts to engage K-12 students in real-world STEM through scientific research, data collection, and analysis. Field activities such as studying crayfish and water quality testing enable students to consider the effect of invasive species and water quality on the health of the watershed.

TRM was started by the Lake Roosevelt National Recreation Area education specialist Janice Elvidge in 2008 and has since expanded throughout the Columbia River Watershed. Currently a network of over 200 educators, 4,200 students, and hundreds of other partners, including scientists, are exploring the essential question, "How do relationships among components of an ecosystem affect watershed health?"

A major feature of TRM is teacher training that includes curriculum, workshops, materials, kits, and scientists volunteering to provide invaluable expertise and support. Said Elvidge, "The EPA grant is an exciting opportunity to continue expanding The River Mile network's reach, and specifically that of the Crayfish Study."

Reaching schools and classrooms in Washington, Oregon, and Idaho, highlights of the EPA TRM grant include:

- providing training and workshops to assess crayfish populations and water quality to at least 50 educators,
- engaging at least 1,200 students from predominantly low-income communities in conducting field activities and research made possible through TRM teacher training and associated materials and kits,
- developing new materials such as a field guide for identifying crayfish, and an online mapping tool (ArcGIS) to collect and share data, and
- offering opportunities for teachers and students to present results to other schools and at conferences.

Supporting this effort are scientists and educators from the University of Idaho and UI Extension, the University of Washington, Oregon State University Ext., and the University of Illinois. Other partner organizations supporting the citizen-science activities include the REACH Museum in Richland, WA, Spokane Riverkeeper, and Oregon State Parks.

The program manager for the EE grant is Rick Reynolds, founder of Engaging Every Student. Based out of Oregon, Rick has worked with TRM since 2017. He has been a passionate educator and developer of educational resources

for over 25 years, including authoring or co-authoring 18 books and curriculum guides, such as TRM's Investigating Crayfish + Freshwater Ecosystems. "It is so exciting to see how engaged students are by inquiry into the native and invasive crayfish found in their local watersheds," said Reynolds. "Crayfish are also an ideal indicator species of water quality, which students can learn how to identify and submit data about that is important for researchers and wildlife managers. By providing students with opportunities to explore the health of animal communities in nearby freshwater ecosystems, we also provide them with powerful motivation to be good stewards of our land and waters."

Three other 2020 EE grants were awarded in EPA Region 10 (the Northwest). These included an Adopt-A-Stream program in Alaska; water quality and conservation literacy in the Palouse, Washington; and air quality biomonitoring in Seattle's Lower Duwamish and South Beacon Hill neighborhoods.

Started in 1992, EPA has awarded nearly 4,000 EE grants nationally to promote environmental awareness and stewardship that include providing students and the public skills to take responsible environmental protection actions.

The Lake Roosevelt Forum received this EE grant on behalf of TRM and will serve as its fiscal agent and provide administrative oversight. For more information about participating in TRM, check out www.therivermile.org or contact Janice at Janice_Elvidge@nps.gov 🌐



Janice Elvidge, Lake Roosevelt Recreation Area education specialist



Columbia River System Operations Joint Record of Decision Released

On September 28, the U.S. Army Corps of Engineers, Bureau of Reclamation, and Bonneville Power Administration signed a joint Record of Decision (ROD) that will support ongoing operations, maintenance, and configuration of 14 federal dams that compose the Columbia River System. The ROD memorialized the preferred alternative previously published in the nearly 5,000-page Columbia River System Operations Environmental Impact Statement (EIS). The EIS also includes new biological opinions for species currently listed under the Endangered Species Act.

This is the culmination of a process triggered by a May 2016 federal court order that rejected the NOAA Fisheries 2008/2014 Federal Columbia River Power System Biological Opinion (BiOp) and ordered a new BiOp that included direction to complete a National Environmental Policy Act process for the Columbia River System Operations. The Opinion and Order stated the operation plan should "... evaluate how to ensure that the prospective management of the CRS is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat."

Reactions to the ROD are mixed

Reclamation Regional Director Lorri Gray said, "The selected alternative meets the purpose and need of the action and a majority of the EIS objectives, balancing the co-lead agencies' abilities to meet statutory project obligations while also complying with the requirements of the ESA, Clean Water Act and other applicable laws."

Said Congresswoman Cathy McMorris Rodgers, "Based on the best available science, the Columbia River System Operations Record of Decision confirms what we already knew, our dams and river system are essential to our region."

Environmental groups immediately voiced their concerns. Said the Save Our Wild Salmon Coalition, "Salmon and fishing advocates are deeply disappointed by the Final EIS and the 2020 Biological Opinion."

Said Todd True, the Earthjustice attorney who brought the original legal challenge on behalf of conservation and fishing groups and in conjunction with the Nez Perce Tribe and the State of Oregon, "This is the final step in a four year process that has failed our region in profound ways. The differences between the plan adopted by these agencies today and the plan the court rejected in 2016 are hard to discern."

This fall, a new round of litigation began that included the State of Oregon filing a 60-day notice of intent to sue the U.S. Army Corps of Engineers and Bureau of Reclamation. Two other 60-day notices of intent to sue were also filed. One by Earthjustice representing a coalition of 11 conservation groups and the other a tribe.

The Forum's spring 2020 newsletter detailed expectations for the Columbia River EIS effect on Lake Roosevelt. 🌐



Upper Columbia Salmon Reintroduction Continues to Gain Momentum

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Although it was only one fish, it was a good start and a remarkable accomplishment for this particular fish.

In 2020, the Spokane Tribe announced three more chinook from the 2017 release made their journey to the ocean and back to the Columbia. One was detected at McNary Dam, another at Wells Dam, and the last picked up by a tribal fish processor above the Dalles Dam.

In 2019, the Colville Tribes conducted a series of ceremonial releases at Kettle Falls, Keller and in Lake

Rufus Woods between Chief Joseph and Grand Coulee Dams. The ceremonies were a powerful celebration of the spiritual connection between the tribes and the salmon and brought national attention to salmon reintroduction upstream of Grand Coulee Dam. That same year, the Upper Columbia United Tribes (which includes the Colville Tribes, Coeur d'Alene Tribe, the Kalispel Tribe, the Kootenai Tribe of Idaho and the Spokane Tribe) published the Phase I feasibility study to reintroduce salmon to the Upper Columbia.

CONTINUED ON PAGE 10

EPA Remedial Investigation Focusing on Baseline Ecological Risk Assessment

A Baseline Ecological Risk Assessment (BERA) is the next big milestone for the Upper Columbia River Remedial Investigation and Feasibility Study (RI/FS). The BERA and Human Health Risk Assessment (HHRA) are required to complete the Remedial Investigation (RI). The purpose of the RI is to fully assess the site and inform next steps to protect human health and the environment.

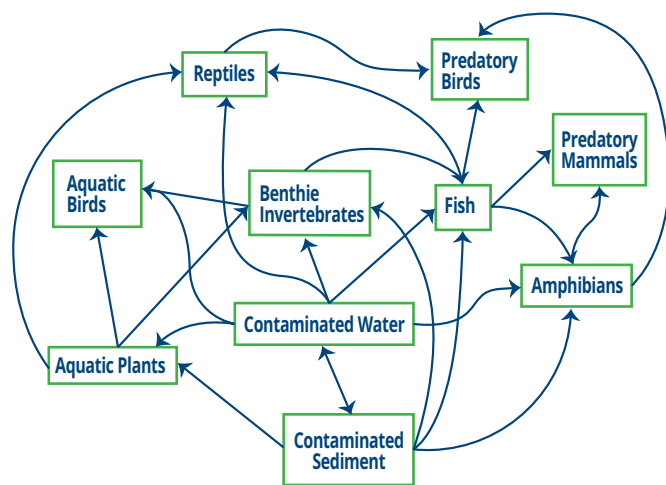
Development of the UCR RI/FS Site Baseline Ecological Risk Assessment (BERA)

The BERA evaluates risk (i.e., the potential for adverse effects) to plants and wildlife on land and in water.

As shown in Figure A, this requires examining exposure pathways for chemicals of potential concern (COPCs) that might result in plants and animals being adversely affected. COPCs found to be the cause of unacceptable ecological risks will be identified in the RI, then further evaluated in the Feasibility Study for possible cleanup or other remedial actions.

FIGURE A

Sample Ecological Risk Assessment Pathways



Although done under EPA oversight, Teck American Incorporated (TAI) is responsible for completing the BERA. Per the settlement agreement guiding this process, TAI's work is reviewed by EPA, who also works with other government parties (participating parties) to consider their review comments. Participating parties include the Colville Confederated Tribes, Spokane Tribe of Indians, State of Washington (represented by the Washington Department of Ecology), and U.S. Department of

the Interior. Interior agencies include the Bureau of Reclamation, the National Park Service, Bureau of Indian Affairs, the U.S. Fish and Wildlife Service, and the U.S. Geological Survey.

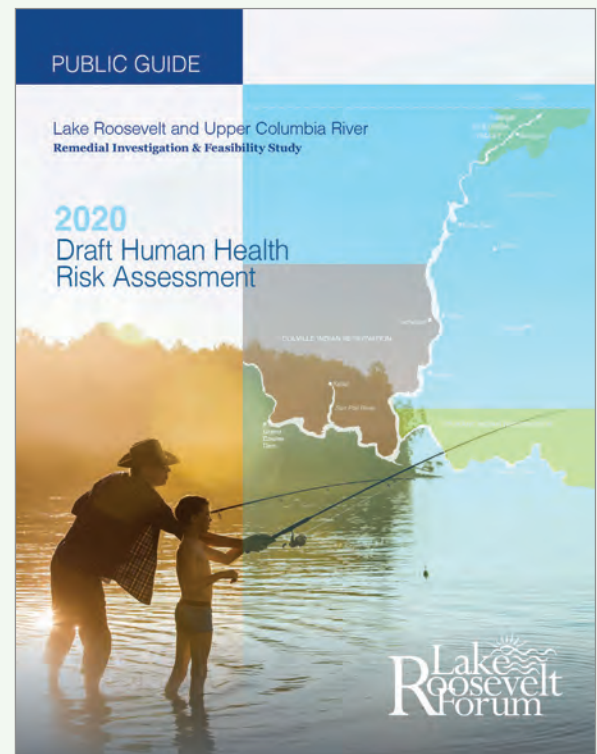
The draft BERA is not expected to be completed until sometime in 2022.

CONTINUED ON PAGE 8

LRF Public Guide

The Forum's recently released 2020 Public Guide summarized findings of EPA's Draft Human Health Risk Assessment (HHRA) for the Upper Columbia River (UCR) Site Remedial Investigation and Feasibility Study (RI/FS). The HHRA estimates the nature and probability of adverse human health effects of concern now or in the future from being exposed to chemical contaminants (primarily metals).

The 2020 public guide also summarized cleanup activities that are complete or in process. To view online visit www.lrf.org/publicguides. For a print copy, email info@lrf.org.



www.lrf.org/publicguides

Soil Cleanup of Residential and Common-Use Areas in Northport, Washington



EPA and its contractor excavate and remove lead contaminated soil at Lyn Kaste Gould Memorial Park

Metals smelting dating back to the turn of the century contaminated soils in the town of Northport, putting children's health at risk. Building on work initiated in 2004, the U.S. Environmental Protection Agency (EPA) conducted another round of cleanup in the town.

EPA cleaned up soil on 15 properties within Northport town limits from August 3 through September 25, 2020. With consent of property owners, the cleanup included residential properties and common use areas at Lyn Kaste Gould Memorial Park, the lawn at the Northport Community Library, the play area at the Northport Community Garden, the lawn at the Northport American Legion vacant lot, and the lawn at the Northport Welcome Center.

EPA contractors replaced contaminated soil with clean soil in close coordination and communication with property owners. EPA controlled dust by spraying water and monitoring the air to ensure dust suppression was effective. Following the removal action, the EPA On-scene

Coordinator conducted a walk-through with each property owner or representative to describe the excavation, backfill, and restoration work.

In 2004 EPA offered voluntary soil testing to Northport residents. 191 properties were sampled, and 33 properties were eligible for emergency soil removal and replacement with lead results greater than 1,000 ppm (parts per million).

Areas for the 2020 soil removal were identified based on an October 2019 review of 2004 data reports of properties within Northport town limits with lead levels near or above 700 ppm. The threshold of 700 ppm is the same level EPA used when working with Teck American to clean up 18 residential properties outside of Northport town limits from 2015 – 2018. Use of this lower threshold represents advances in scientific understanding of the adverse developmental effects of lead to young children and babies. 🌍



Images courtesy of US EPA

Lake Roosevelt Continues to Support Odessa Water Needs

Migrating needed water to Odessa farms from deep wells to surface water irrigation continues to progress. Construction of the East Low Canal expansion is complete with only some related road construction remaining. One of the eight or more distribution systems needed to connect the canal water to farmland is also complete and design work is in process for three more.

This is all part of the multi-year Odessa Ground Water Replacement Program. State and federal efforts have secured enough water to move up to 90,000 acres of farmland from the severely declining Odessa aquifer to surface water. For a decade, infrastructure projects like this are steadily making this transition happen through

partnerships and funding from the Washington Department of Ecology, the Bureau of Reclamation, irrigation districts, and landowner participation enabled through bonds issued by the East Columbia Basin Irrigation District. Millions of dollars have been invested with millions more being sought to fully build out the potential of this effort.

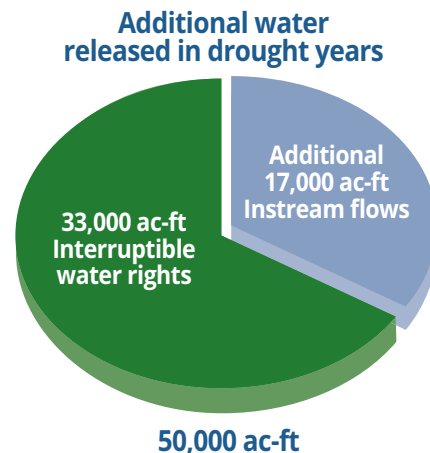
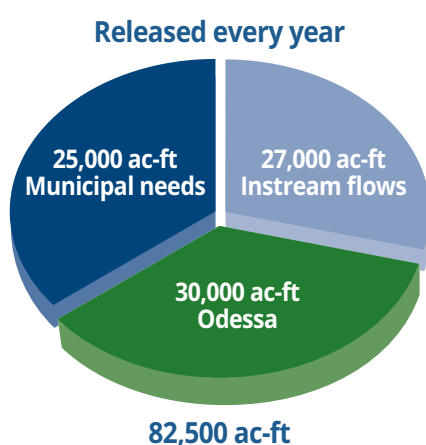
30,000 acre feet of this water—enough to support 10,000 acres of irrigation—comes from the Lake Roosevelt Incremental Storage Release Program. This results in the lake being drawn down 12 to 18 inches each August for a very brief time. Another 30,000-acre feet of water is being secured through coordinated conservation programs with Columbia River Basin irrigation districts. 🌱

LAKE ROOSEVELT INCREMENTAL STORAGE RELEASE PROGRAM

Water available for use under the Lake Roosevelt Supplemental Releases Program

Source:

Washington Department of Ecology



Bringing surface water to Odessa farms

Aquatic Invasive Species Defenses Holding

The Columbia River Basin is the last major watershed in the U.S. not infested by zebra and quagga mussels. An intergovernmental network continues the effort to keep these unsightly and potentially economically devastating organisms from our waterways.

For the first 11 months of 2020, the Washington Department of Fish and Wildlife's (WDFW) detected more boats than ever fouled with non-native organisms. At watercraft check stations in Spokane and Pasco, WDFW inspected more than 32,000 watercraft and found 25 carrying invasive mussels. Another 632 watercraft were decontaminated with standing water found in 168. This is particularly significant because 112 watercraft were last on waters known to be infested with aquatic invasive species.

For Lake Roosevelt, the National Park Service (NPS) reports conducting 281 boat inspections in 2020.

20 of these included plant decontaminations.

Inspections occurred between May and September, 1 to 3 times a week. With COVID 19 limited staffing, inspections took place at the busiest boat launches, e.g.—Kettle Falls, Fort Spokane and Spring Canyon.

Cassie Hagemann, LRNA's Aquatic Invasive Species specialist, also reported inspections were an excellent opportunity to educate boaters that it's mandatory to complete and post a self-certification form that their watercraft is free of aquatic invasive species. Said Hagemann, "About 50 percent of the people were familiar with the self-certification form from when it was introduced as a voluntary program. The other 50 percent were mostly cooperative, especially because we were able to answer questions and explain the importance of keeping invasive species out of our waters." 🌊



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EPA Remedial Investigation CONTINUED FROM PAGE 5

BERA Status Report

All field and laboratory studies have been performed for the BERA, including river associated surface water, beach sediment, fish tissue, mussel and crayfish, fish, sediment and porewater (water between the grains of sediment) sampling. It also includes upland soil sampling in a 100-square-mile Upper Columbia Valley area.

The river sampling is quite complex and has occurred in three phases. Essentially, investigators are continuing to evaluate how and to what extent metals and other chemicals present unacceptable risks to the benthic invertebrate community (aquatic sediment-dwelling bugs such as mayflies, mussels, and crayfish). In addition to sediment and porewater chemistry analysis, bioassays are used to evaluate risks to organisms from exposure to

contaminants in sediment or porewater. Risks in these communities can harm the benthic life directly.

These risks also may negatively affect fish and wildlife as they work their way through the food web and up the food chain.

A Phase 3 Sediment Study was the final BERA field study. This included sediment facies mapping in the entire northern section of the UCR Site (a 40-mile river reach) and additional sediment and porewater sampling in three generally representative areas of interest (AOIs): Deadman's Eddy, China Bend and Evans.

CONTINUED ON PAGE 11

Lake Roosevelt Updates

National Park Service

VISITOR USE SITE MANAGEMENT PLAN ADOPTED

The Lake Roosevelt National Recreation Area (LRNRA) Visitor Use Site Management Plan was completed in September. This effort, which began in 2017, focuses on nine priority sites.



As funding is available, NPS reports that management strategies and improvements will be made "... to address a broader spectrum of visitors' needs and interests, including diversified camping facilities and enhancements to day-use and boat launch areas as well as parking areas, roads, entrances, trails, docks, fish cleaning stations, and other visitor facilities. Implementation of management strategies and improvements will enhance visitor experience and visitor safety and reduce impacts to the national recreation area's natural and cultural resources."

PRESCRIBED BURNS

NPS conducted pile burns this fall as part of their wildland fire management activities. Focal areas in Stevens, Lincoln and Ferry counties were chosen based on the priority to decrease forest fuel loads adjacent to recreation areas, residences, and structures. Benefits include reduced small fuels, which are primary fire carriers; decreased risk and intensity of uncontrolled wildfires; increased nutrients for trees and understory, and increased understory plant diversity and natural reseeding of trees.

COVID-19

LRNA continues to monitor the pandemic and work closely with state and local public health officials. For the most current information regarding availability and services at campgrounds, marinas, and other facilities visit www.nps.gov/laro

Bureau of Reclamation

THIRD POWER PLAN RENAMED



BUREAU OF RECLAMATION

On August 12, U.S. Department of the Interior Secretary David Bernhardt announced the renaming of the Grand Coulee Dam's Third Power Plant to the "Nathaniel 'Nat' Washington Power Plant." The name change honors the father-son duo who was instrumental in the conception, construction, and implementation of operations at the dam. The announcement was made during a virtual roundtable event hosted by Representative Dan Newhouse (R-WA).

MODERNIZATION OF GRAND COULEE GENERATING UNITS

Completion of the mechanical overhaul of Unit G-22 in the third powerhouse is slated for early 2021. Previously, Units G-23 and G-24 were overhauled. Based on lessons learned, assessing modernization of Units G-19, G-20, and G-21 is in process. Reclamation, Bonneville Power Administration, and the Corps are conducting an optimization study that will take 2–3 years. As with previous overhaul projects, the goal is operating with maximum flexibility, efficiency, and durability over a 40+ year time horizon.

Go to www.usbr.gov/pn/grandcoulee/ for a fun, informative video showing time lapse images of generating unit overhauls.

TEMPORARY CLOSURES

In support of the recommended guidelines from the Centers for Disease Control and Prevention, the Bureau of Reclamation temporarily closed the visitor center, and dam tours are not available until further notice. 🌐

People's Choice #1 IN THE SPIRIT Contemporary Native Arts Exhibition

Shawn Brigman of the Spokane Tribe of Indians won People's Choice #1 at the IN THE SPIRIT Contemporary Native Arts annual juried exhibition. To view more of Shawn's work, visit www.shawn-brigman.squarespace.com

Salishan Sturgeon Nose Canoe Column, 2019, blown and hot-sculpted colored glass, 26x5x5 inches



Upper Columbia Salmon Reintroduction Continues to Gain Momentum

CONTINUED FROM PAGE 4

Mark 2019 as the year the braiding of culture and science began officially stirring imaginations.

2020 Releases

In July, the Colville Tribes released 50 chinook into Lake Roosevelt, half near Grand Coulee Dam and the other half up by Northport. The results of this study are pending, but the plan is to learn about survival, behavior, fallback below Grand Coulee Dam and if the fish will also utilize habitat in Canada.

In August, the Colville Tribal Fish and Wildlife (CTFW) department released 100 adult chinook salmon into the Sanpoil River, a tributary to the Upper Columbia. The adult salmon ranged from about 8-20 pounds and were provided by the Wells Fish Hatchery.

In a hopeful sign, CTFW Senior Research Scientist Casey Baldwin reported that “Most of the chinook stayed in the area and a lot of them spawned.” Continued Baldwin, “We were able to document 36 redds (spawning nests) in about a 6-mile reach from West Fork downstream. The fish held there through the late summer and started spawning in October. It looks like we had really good survival and conversion to spawning.”

This summer the Spokanes released 50 adult chinook in Tshimikain Creek and 50 to the Spokane River below Long Lake Dam. Like the Colvilles, they’re tracking to see if they’ll stay, survive and spawn. And like the Colville Tribes experience, the early signs are hopeful with a survey of Tshimikain in early October documenting 20 redds.

Said Conor Giorgi, Anadromous Program Manager with the Spokane Tribe of Indians, “We’re finding that the habitat can support spawning activity for adult chinook, anecdotally confirming some of our assessments from Phase 1.”

To the east, the Coeur d’Alene Tribe conducted their first cultural release of adult salmon in Hangman Creek on June 26th. The Hangman descends from Idaho before entering the Spokane River less than two miles downstream of the iconic Spokane Falls in downtown Spokane.

75 adult chinook salmon from the Leavenworth National Fish Hatchery were released to much fanfare. Tribal Council member Hemene James captured the moment with these thoughts about the future for salmon. “Let’s enjoy today for what it is, a return of something that was at the very center of our existence. A place where political deals were made, where marriages were made, where you got to see cousins and relatives that you only see certain times of the year when the fish were running. So let’s enjoy today as much as we can and keep the fight [to bring salmon back] going tomorrow, cause I promise you as long as I have breath going, the fight will continue.”

2020 also marked the second straight year the Coeur d’Alene Tribe released juvenile salmon with help from students participating in “Smlich (Salmon) in the Classroom”. This educational program engages K-12

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Celebration of adult salmon release in Hangman Creek



Chinook salmon release at Tshimikain Creek

Upper Columbia Salmon Reintroduction Continues to Gain Momentum

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students in the science of reintroduction while revitalizing the salmon culture. Information generated through the program is helping to spawn excitement in the community.

In late March more than 1,450 yearling chinook salmon were released into upper Hangman Creek, 331 kilometers upstream of the current anadromous zone and behind five hydroelectric projects without fish passage facilities. By July, the first Coeur d'Alene fish reared on the Reservation in over 100 years were confirmed to have survived the downstream journey to the Pacific.



Coeur d'Alene Tribe student intern and fisheries technician tag chinook smolts before Hangman Creek release

The Science of Reintroduction Continues

The Phase 1 Reintroduction Plan focused on pre-assessment planning. Based on an array of research and studies, Phase 1 concluded non-ESA donor stocks are available; the disease risks identified are manageable; that sufficient habitat and other conditions exist to support their life cycle; and that technology exists to move adult and juvenile fish past Grand Coulee and Chief Joseph dams.

Scientists and researchers are now hard at work on the Phase 2 Implementation Plan. With expectations of the plan being ready for release in the spring of 2021, Phase 2 focuses on experimental, pilot-scale salmon reintroductions and interim passage facilities. Specifically, they are looking at a range of issues at various life stages such as juvenile migratory and passage survival, adult return migration behavior, and spawning success.

Tribal Commitment and WDFW Support

It's a complex, multi-year process that the Upper Columbia tribes are fully committed to. Without federal support, the tribes are largely relying on their own resources and leveraging partnerships with the Washington Department of Fish and Wildlife and others.

"The Washington Department of Fish and Wildlife (WDFW) fully supports salmon and steelhead reintroduction efforts into the Blocked Area of the Columbia River and we are eager to assist where needed with staff expertise and funding, when available," said Chris Donley, WDFW's regional fish program manager. "We've assisted with disease testing by processing samples in our Olympia Labs and subsidizing the cost of the sample processing to reduce costs to the tribes."

Tribal passion for salmon reintroduction rests on a foundation of striving to restore the physical and spiritual health of members. At the same time, they see reintroducing salmon as critical to the ecosystem and a benefit to local economies.

The journey, however uncertain, continues. It's a story of resilience and passion. 🌟

EPA Remedial Investigation

CONTINUED FROM PAGE 8

Two main objectives are to better characterize 1) sediment bed attributes (done through sediment facies mapping), and 2) sediment and porewater conditions in the three AOIs to help assess the risks to benthic organisms and the nature and extent of contamination in this portion of the Site.

To help with this, a survey also was conducted to consider the composition and diversity of the benthic community more fully.

TAI completed a data summary report, approved by EPA, for the sediment facies mapping study in September 2020 and will submit the draft data summary report for the sediment and porewater sampling in early January 2021.

Next Steps

TAI will develop a draft BERA report for terrestrial (upland) and river associated investigations in 2021. After EPA provides comments, including those they integrate from participating parties, TAI will complete a revised draft. EPA will then initiate release of the draft BERA for public comment (most likely in 2022).

Due to this timeline, the Forum does not expect the feasibility study (which requires the remedial investigation be complete) to begin before 2023. The feasibility study will evaluate potential cleanup or other alternatives to address human or ecological risks identified in the remedial investigation as potential concerns. 🌟

Lake Roosevelt Forum

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