



Fall is a time of transition on the Clackamas River. Adult salmon return home to spawn. Busy summer fieldwork comes to a close. A new batch of out-migrating juveniles begin their journey to the ocean, starting the cycle over again.

The 2019 run of juvenile salmon and steelhead was one for the record books, with over 618,000 fish passing through our project (up from an average of only 90,000 per year before our new license was implemented). And this fall, spawning salmon were observed taking advantage of gravel from our augmentation program. On top of it all, we recently announced our latest round of selections for the Clackamas Habitat Fund, and look forward to supporting six new projects to improve conditions for fish in the basin. Altogether, it feels like 2020 is going to be a great year for the Clackamas. Happy Holidays and a wonderful new year from all of us at PGE!

Spawning salmon spotted!

Warm-weather seasons busy with field work come and go. But here at West Side Hydro, we also appreciate fall and winter for the opportunity they provide to analyze all of that data we gathered. This year, we're especially interested in the presence of fresh spring Chinook redds on new gravel distributed downstream.

Despite an average return of fish, we counted more spring Chinook redds downstream of River Mill Dam than ever before, thanks in large part to our gravel augmentation program. You might remember that we placed 20,000 cubic yards of gravel alongside the river last year to help restore rocky material for macroinvertebrates and spawning fish. (See our [Spring 2019 newsletter](#) for a refresher). In April, the Clackamas received heavy rainfall, and the high flow carried almost the entire gravel pile downstream.

During the two spawning surveys we completed in 2019, we found a total of 156 spring Chinook

redds and 254 live fish. That's more than three times the number of redds found in 2013 or 2018, and five times the number of redds found in 2012! While the total number of spring Chinook at North Fork Dam has remained static or declined over the study period, the number of redds and spawning fish increased substantially in 2019 (see Table 1).

Additionally, redds were observed in areas where the proper material for building fish nests was largely absent prior to the gravel augmentation program. While normal variation in environmental conditions could be influencing spawning distribution, the data strongly suggest that this year's impressive movement of gravel played a large part in attracting spawning fish.



A pair of salmon spotted utilizing the new gravel. Watch a [video](#) of this by joining our [environmental community on Facebook](#).

Year	Unmarked	Marked	Redds	Redds / Fish
2012	1,833	2,132	28	0.01
2013	2,238	1,199	46	0.01
2018	2,313	92	45	0.02
2019	2,272	56	156	0.07

Table 1: Number of unmarked and marked spring Chinook adults counted at the North Fork adult sorting facility, redds surveyed in the study reach, and redds per fish passed at North Fork Dam (redds/fish).

Restoration Report: Habitat Fund 2020 Selections

This summer, PGE selected six organizations to receive \$1.84 million in funding for Clackamas Basin habitat projects. Recipients will begin their work in 2020, contributing efforts toward fish passage, habitat restoration, and improving water quality.

Recipients include partners we have worked with for many years, like the Clackamas River Basin Council, as well as organizations that are newer to the PGE family, like the Oregon Wildlife Foundation. “There’s a great deal of collaboration taking place in this basin,”

says Lindsay Smith, PGE’s License Manager for Westside Hydro. “We’re happy to work with all of our Clackamas Basin partners, and know that the work of one organization will benefit all the others as well.”

This year’s selection process was the third cycle for the Clackamas Habitat Fund, which also granted funding in 2012 and 2015. PGE will complete two more rounds of funding in 2023 and 2029, reaching a total investment of \$8 million in our Clackamas Basin community.

The selection process involved site visits, a thorough review of application materials, and consideration of potential impact. “It’s more than just a license requirement for us,” says Smith. “We take the time to ensure we’re doing our homework and funding meaningful projects.”

Organization/ Project Lead	Project to receive funding
Clackamas Soil & Water Conservation District	<ul style="list-style-type: none"> Clackamas River Invasive Species Partnership
Oregon Wildlife Foundation	<ul style="list-style-type: none"> Clackamas River Fish Habitat Enhancement Project - Upstream of North Fork Reservoir
David Bugni	<ul style="list-style-type: none"> Suter Creek Fish Habitat Restoration
Clackamas River Basin Council	<ul style="list-style-type: none"> Eagle Creek Large Wood Enhancement Kingfisher Side Channel Project Shade our Streams



Juvenile & Adult Fish Passage Updates

The median length of juvenile spring Chinook observed in the fall of 2019 was significantly larger (29 mm) than in recent years. The cause of this increase is unknown, but we hope that their larger size will lead to more adults returning in future years.

Juvenile Species	2020 Run Year Total (Oct. 1, 2019 - Sep. 30, 2020)	Run relative to 10-year average (to date)
Spring Chinook	43,091	106% (n=40,500)
Winter Steelhead	1,128	50% (n=2,260)
Coho	7,187	36% (n=19,950)

Adult Species	Run Total (to date)	Run relative to 10-year average
Spring Chinook	2,279	109% (n=2,082)
Early Run Coho	2,388	87% (n=2,754)
Late Run Coho	104	18% (n=574)

The 2019 run of spring Chinook on the Clackamas exceeded the 10-year average, while regional returns were generally depressed.

The 2019 return of early run coho more than doubled their parent brood (n=845).

Daily adult fish counts can be [found online](#).

Discover PGE Parks

PGE is working alongside the U.S. Forest Service and whitewater boating community to improve parking, construct a new trailhead, and develop a viewpoint at Carter Falls along the Clackamas River.

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Renovations are underway at Hoodview Campground on Timothy Lake. Next year, campers will find a reconfigured boat ramp, six new hike-in sites, repaved roads, an additional restroom and picnic facilities.

...

PGE Parks hosted a rest stop for the Cascading River Rides — a series of bicycling rides held in September. Riders could choose between 12, 35, 52 or 72-mile rides along the Clackamas River. Dedicated souls braved wind, rain and even some snow this year.



Whitewater rafters near Carter Falls on the Clackamas River.
Photo courtesy of the Whitewater Guidebook.



Cyclists stopped by for snacks and to *fish* for information about PGE's environmental work. Photo on left courtesy of the Estacada Development Association.



Announcements, News & Resources



This year's conference for the Association of Power Biologists (APB) was held here, in the Portland area. The conference was a great opportunity for members to share their challenges and successes in both aquatic and terrestrial biology. PGE hosted tours of our hydropower projects on the Clackamas and Willamette – a chance to highlight our best work and learn from our peers in the industry.

1. **The Clackamas Partnership** is a collaboration of Portland metro area watershed councils, government agencies, tribes, and other organizations (including PGE) committed to improving Clackamas watershed health.
→ [Learn more about the partnership](#)
2. The Willamette Falls Locks are in the process of reopening to recreational and commercial navigation. They were closed in 2011.
→ [Portland Tribune](#)
3. Information and fish counts from the Eagle Creek National Fish Hatchery in Estacada.
→ [U.S. Fish and Wildlife Service Website](#)
4. **Oregon Department of Fish and Wildlife (ODFW) Recreation Report — Willamette Zone and Clackamas River**
→ [ODFW Recreation Report](#)

Finding Fish in Faraday Lake

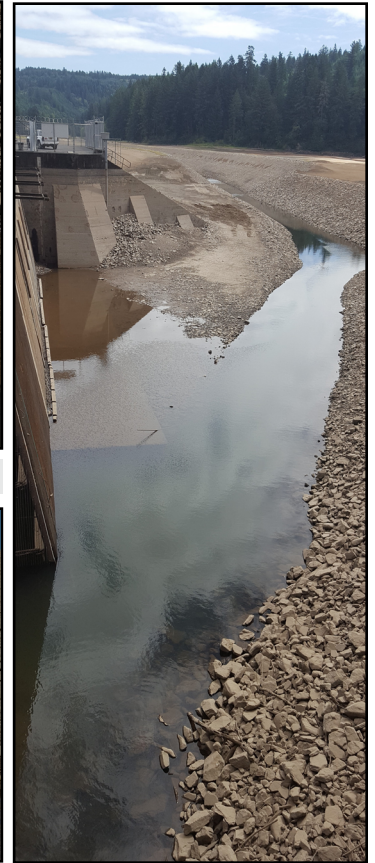
In order to demolish and rebuild Faraday Powerhouse — a multi-year project intended to improve safety and efficiency — we needed to lower the elevation of Faraday Lake. This August, after two weeks of gradually drawing down the reservoir, our biologists stepped in to collect and protect the fish that live there.

We salvaged fish through a number of methods. Most were captured through electrofishing, a process that involves using a backpack unit to temporarily stun fish. Once stunned, fish were netted, placed into five-gallon buckets and moved to a fish trailer. Fish were then hauled back to the Clackamas River for release. Juvenile lamprey were also collected, using a specialized electrofisher.

The salvage process took three days to complete, and an estimated 15,000 to 18,500 fish were collected in total.



Biologists electrofishing to collect juvenile lamprey



A nearly empty lake revealed some strange sights, like this snake snacking on a juvenile lamprey.



Estimated Fish Salvage by Day

Species	Aug. 26	Aug. 27	Aug. 28	Total
<i>Bridgelip Sucker</i>	200-250	9,000-10,000	100	9,300-10,350
<i>Largescale Sucker</i>	50-100	500-1,000	0	550-1,100
<i>Sculpin</i>	400-500	3,000-4,000	15	3,415-4,515
<i>Juvenile Chinook</i>	1	150-200	0	151-201
<i>Juvenile Coho</i>	0	500-750	10	510-760
<i>Juvenile Steelhead</i>	1	50-100	0	51-101
<i>Juvenile Pacific Lamprey</i>	60-100	100-200	50	210-350
<i>Brook Lamprey</i>	1	<10	0	≈10
<i>Mountain Whitefish</i>	>10	<25	0	≈25
<i>Longnose Dace</i>	<10	800-1,000	0	≈800-1,000
<i>Pacific Giant Salamander</i>	0	12	0	12
<i>Crayfish</i>	>100	>1,000	0	>1,100
Daily Total Fish	733-973	14,135-17,285	175	15,043-18,433

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