Cowlitz Falls North Shore Collector Fish Collection 2017 - 2021

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Project Biologist at the Cowlitz Falls Fish Facility

Cowlitz Annual Program Review and Science Conference

April 21, 2022



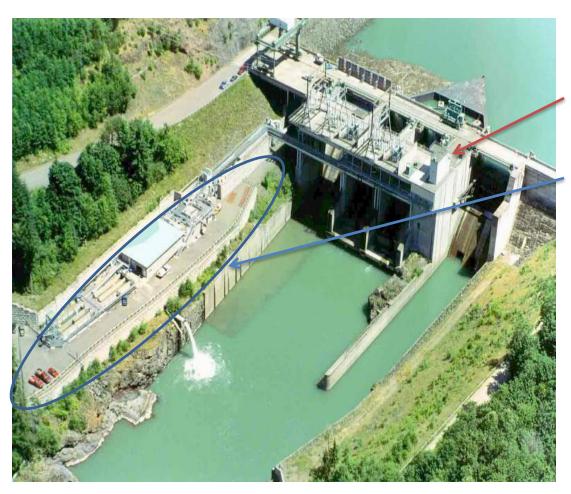
Outline

- Cowlitz Falls Overview
- Fish Collection History
- Cowlitz Falls North Shore Collector
- Monitoring Results
- Next Steps



Cowlitz River Project Dams and powerhouses Hatcheries Recreation areas Wildlife land and other lands Ike Kinswa State Park ke Kinswa Boat Launch Mossyrock Dam and Powerhouse MORTON (HWY 12) To 📆 Mayfield Lake Park Cowlitz Salmon Hatchery and Visitor Center Cowlitz Wildlife Area (Peterman Ridge) MOSSYROCK GLENOMA Cowlitz River Mossyrock Park Glenoma Community Park Marina & Resort Cowlitz **Mayfield Dam** Cowlitz River **Trout Hatchery** Taidnapam North Boat Launch and Powerhouse Taidnapam Cispu: liver Park Lake Scanewa Cowlitz Falls Dam (Lewis County Public Utility District) Cowiltz Falls Fish Facility and North Shore Collector

Cowlitz Falls Project

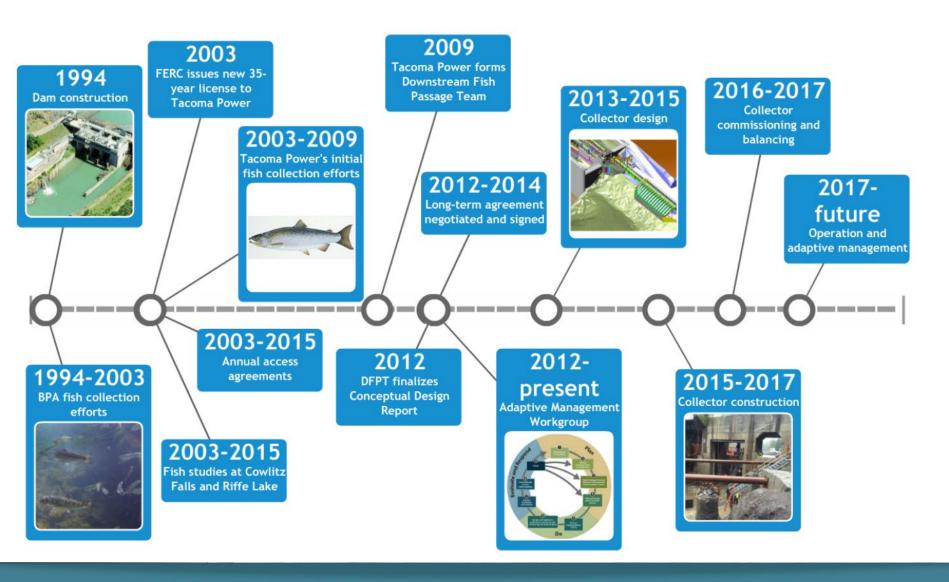


Dam Owner Lewis County PUD

Cowlitz Falls Fish Facility Owner Tacoma Power

- Formerly owned by the Bonneville Power Administration
- Formerly operated by WDFW

Cowlitz Falls Timeline



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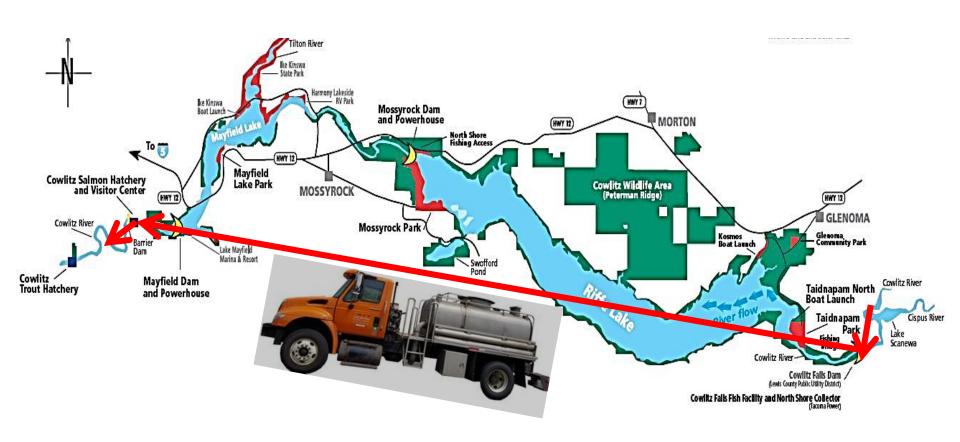
Surface Collection System





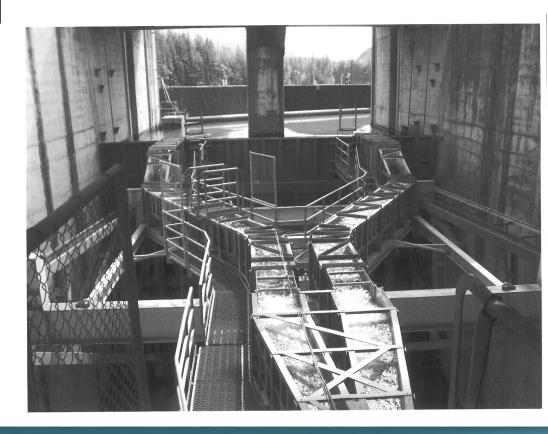
Performance Goal

95% Fish Passage Survival (FPS)



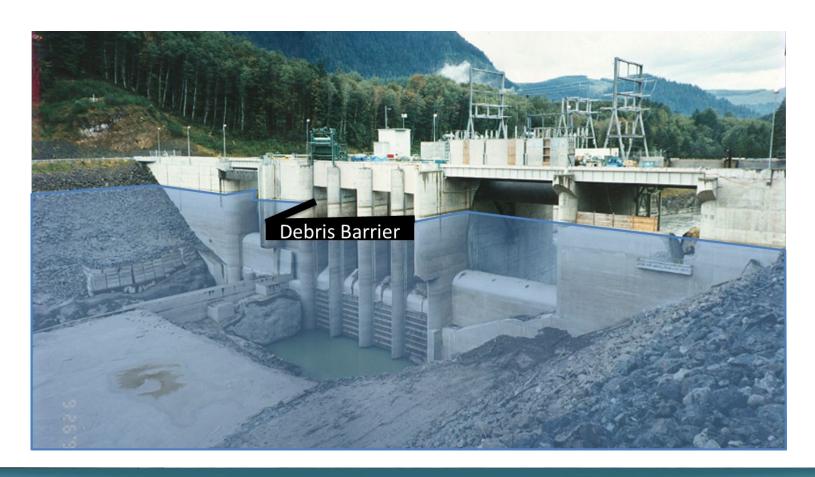
Historic Fish Passage Survival

- ~45% Steelhead
- ~50% Coho
- ~12% Chinook

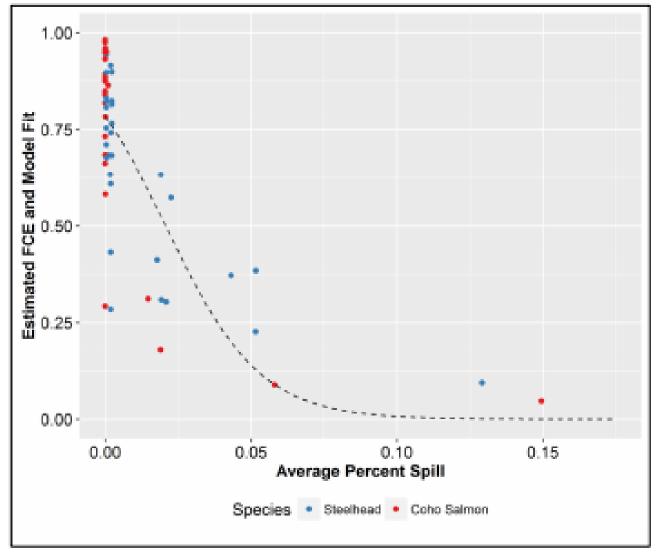


Low Entrance Efficiency

Behavior near debris barrier



Spill vs FCE



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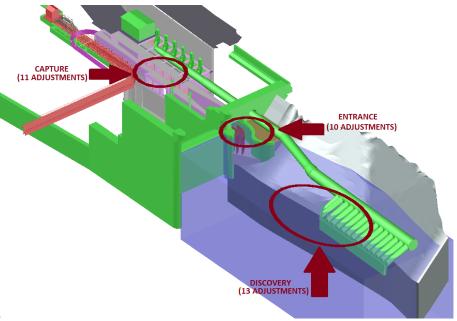
Goals

- 95% Fish Passage Survival
- Improve Fish Collection Efficiency
- Improve Entrance Efficiency



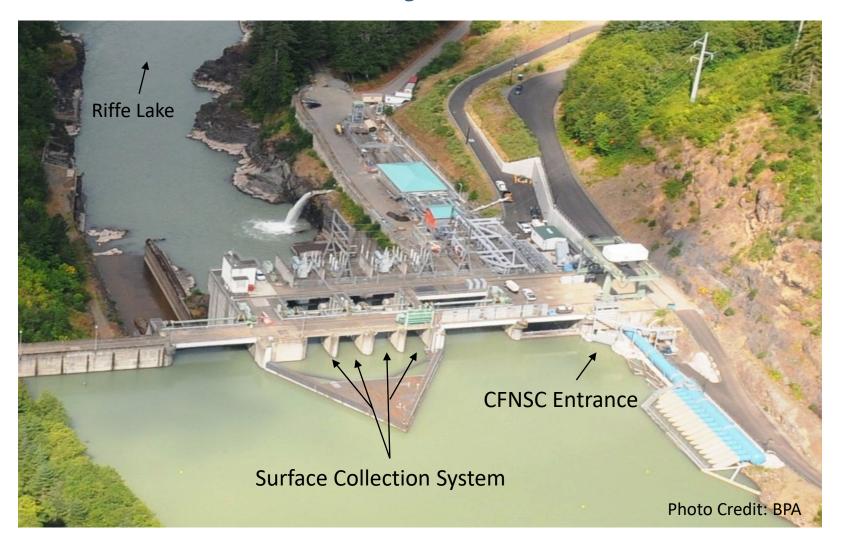
Cowlitz Falls North Shore Collector







Cowlitz Falls Project



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Run of River: Primary Operations

	Begin Date	End Date
2017	April 17	Aug. 31
2018	March 1	Aug. 31
2019	March 1	Sept. 13
2020	Feb. 3	Sept. 30
2021	March 15	Sept. 30

Run of River: Outmigration

Smolts – all age classes

	Chinook	Coho	Steelhead	Cutthroat	Total
2017	56,345	26,196	4,860	952	88,353
2018	27,070	161,529	14,450	1070	204,119
2019	62,885	184,713	11,892	684	260,174
2020	7,315	127,544	8,287	1,171	144,317
2021	13,110	158,096	9,975	1,528	182,709

Run of River: Fall Operations

Generally run for four consecutive weeks of three-day, 72-hour blocks.

	Begin Date	End Date	Hours (days)
2017	Oct. 24	Nov. 30	253 (10.5)
2018	Nov. 8	Dec. 21	203 (8.5)
2019	Oct. 22	Nov. 15	288 (12.0)
2020	Oct. 6	Oct. 30	294 (12.3)
2021	Oct. 5	Oct. 29	279 (11.6)



Run of River: Fall Migration

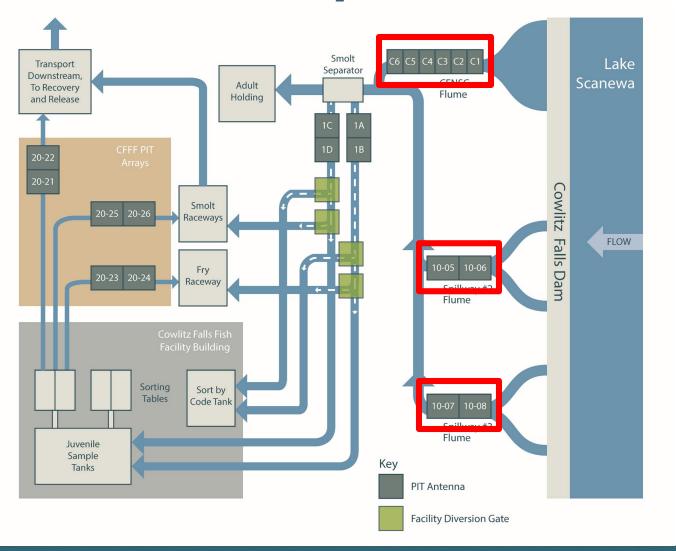
Smolts – all age classes

	Chinook	Coho	Steelhead	Cutthroat	Total
2017	327	747	186	25	1,285
2018	512	969	30	4	1,515
2019	1,905	1,223	112	18	3,258
2020	547	1,247	61	31	1,886
2021	1,572	872	93	35	2,572

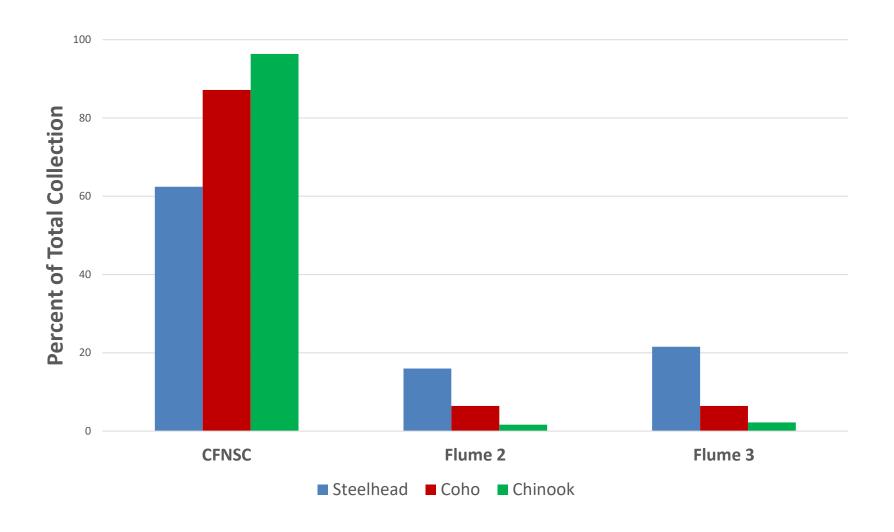
2017-2021 PIT Tag Releases

	Release Date Range	Annual Sample Size Range		
Steelhead	April 18 - June 15	476 - 837		
Coho	April 18 – July 12	601 - 1201		
Chinook	lune 20 – Aug. 16	399 - 900		

Cowlitz Falls PIT System

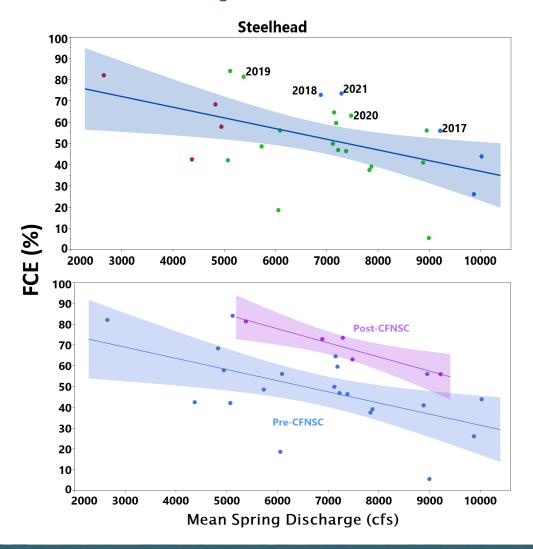


2017-2021 Route Selection

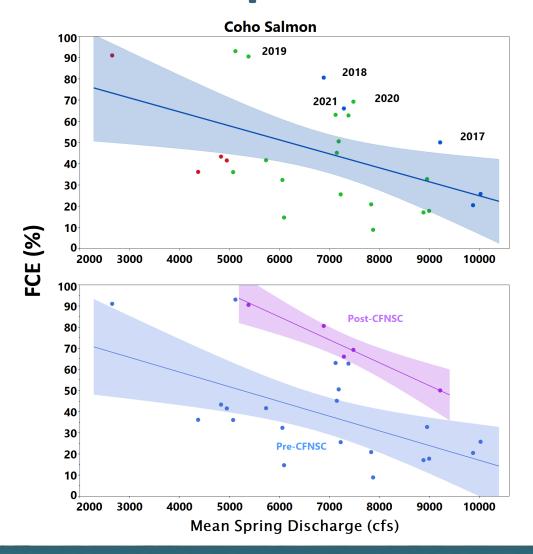




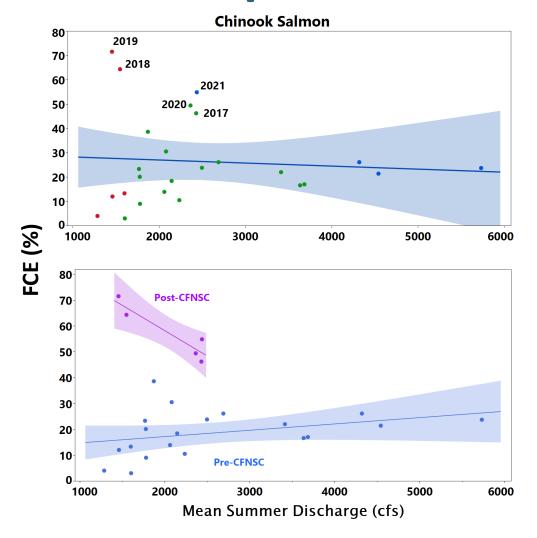
Water Year Comparison - Steelhead



Water Year Comparison - Coho



Water Year Comparison - Chinook



Fish Passage Summary

Fish Passage Survival (FPS)

Species	2017	2018	2019	2020	2021	5-year mean
Steelhead	57%	75%	83%	65%	76%	71%
Coho	52%	82%	93%	72%	68%	74%
Chinook	51%	70%	78%	54%	60%	62%

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Next Steps

- Ongoing monitoring
 - -Baseline performance monitoring
 - Directed
 - Pumpback diffuser configuration
 - Capture zone floor geometry
- Implement Adaptive Management
 Plan



Questions?

