

Cowlitz Falls North Shore Collector Fish Collection 2017 - 2021

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Project Biologist at the Cowlitz Falls Fish Facility

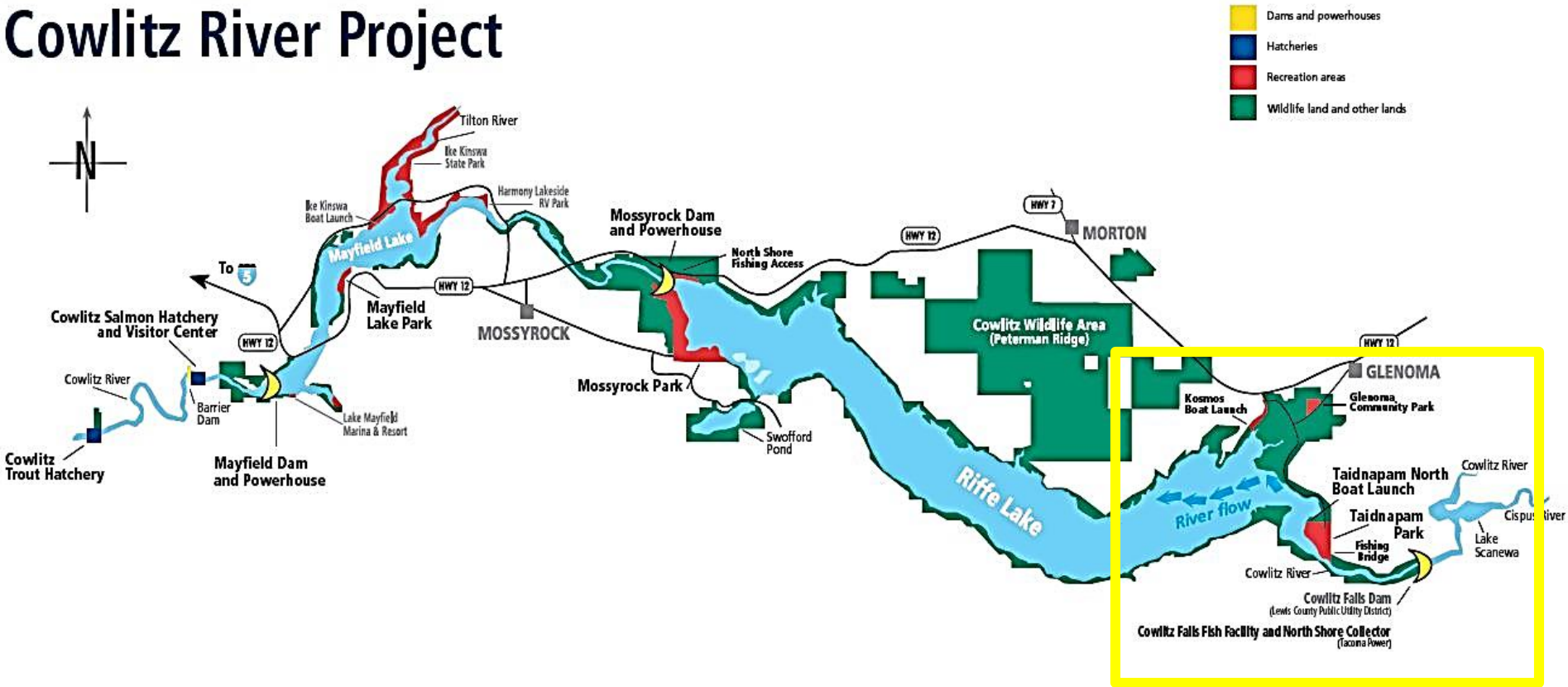
Cowlitz Annual Program Review
and Science Conference

April 21, 2022

Outline

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

Cowlitz River Project



Cowlitz Falls Project



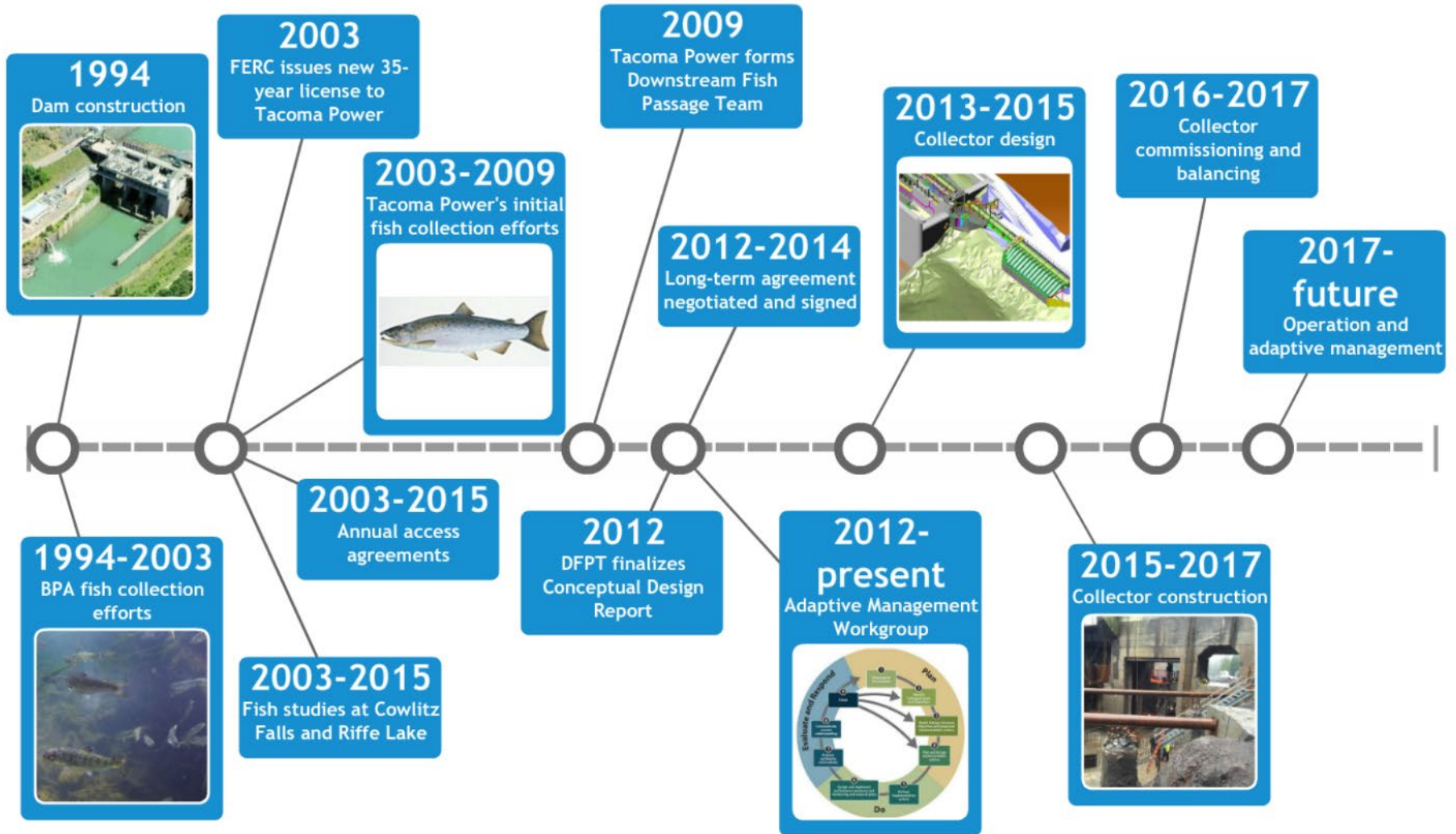
Dam Owner
Lewis County PUD

**Cowlitz Falls Fish
Facility Owner**

Tacoma Power

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

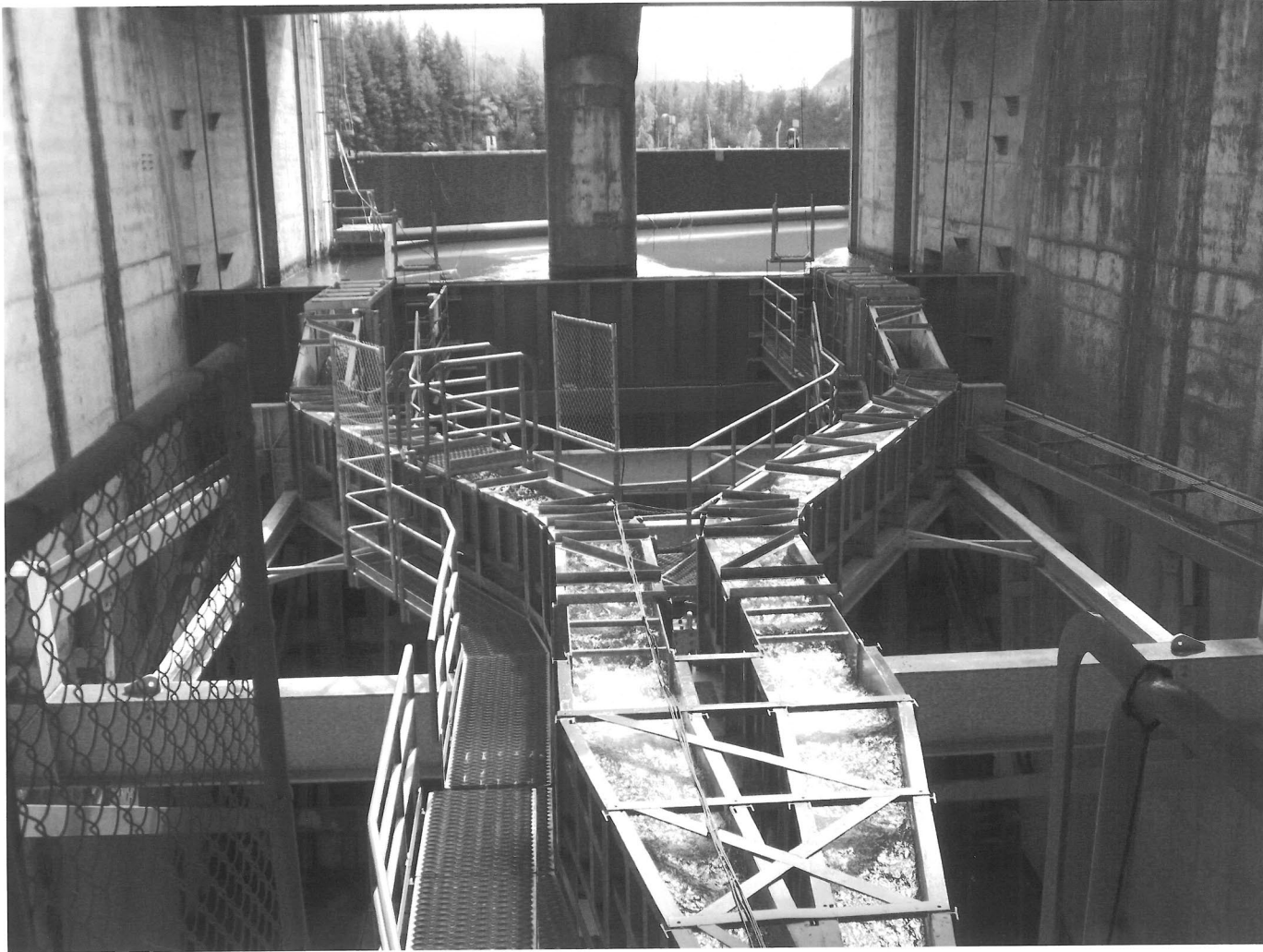
Cowlitz Falls Timeline



Outline

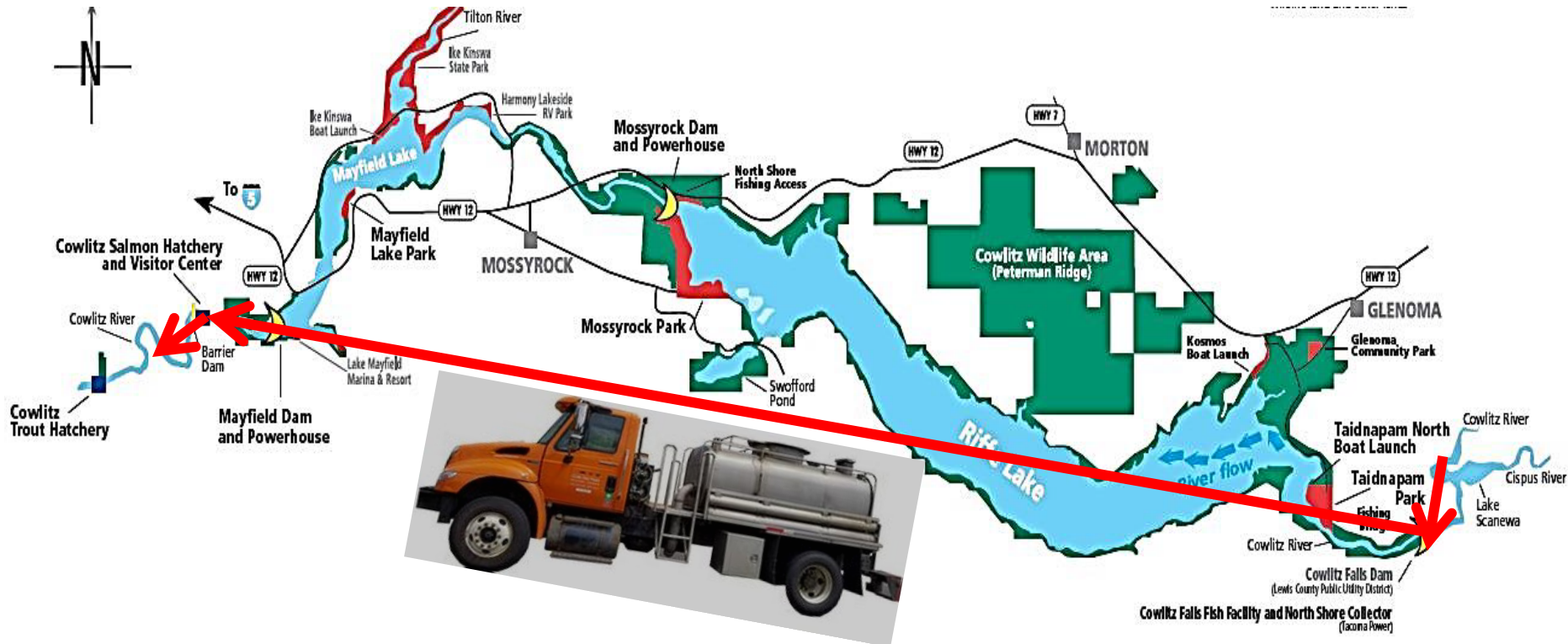
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Surface Collection System



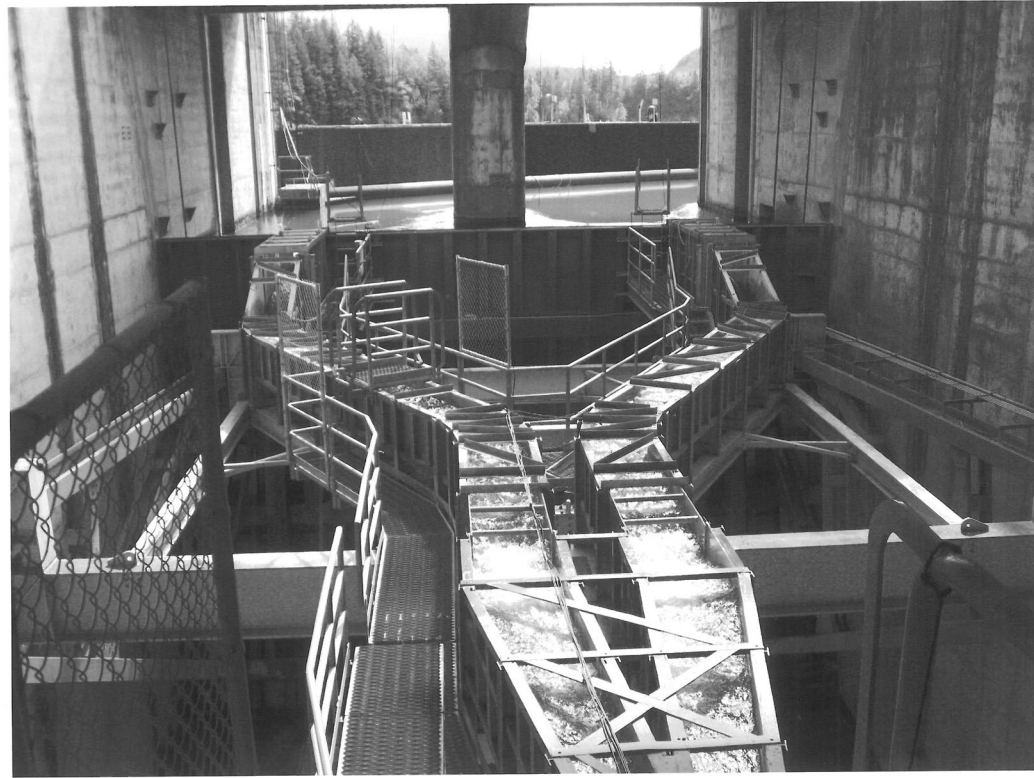
Performance Goal

95% Fish Passage Survival (FPS)



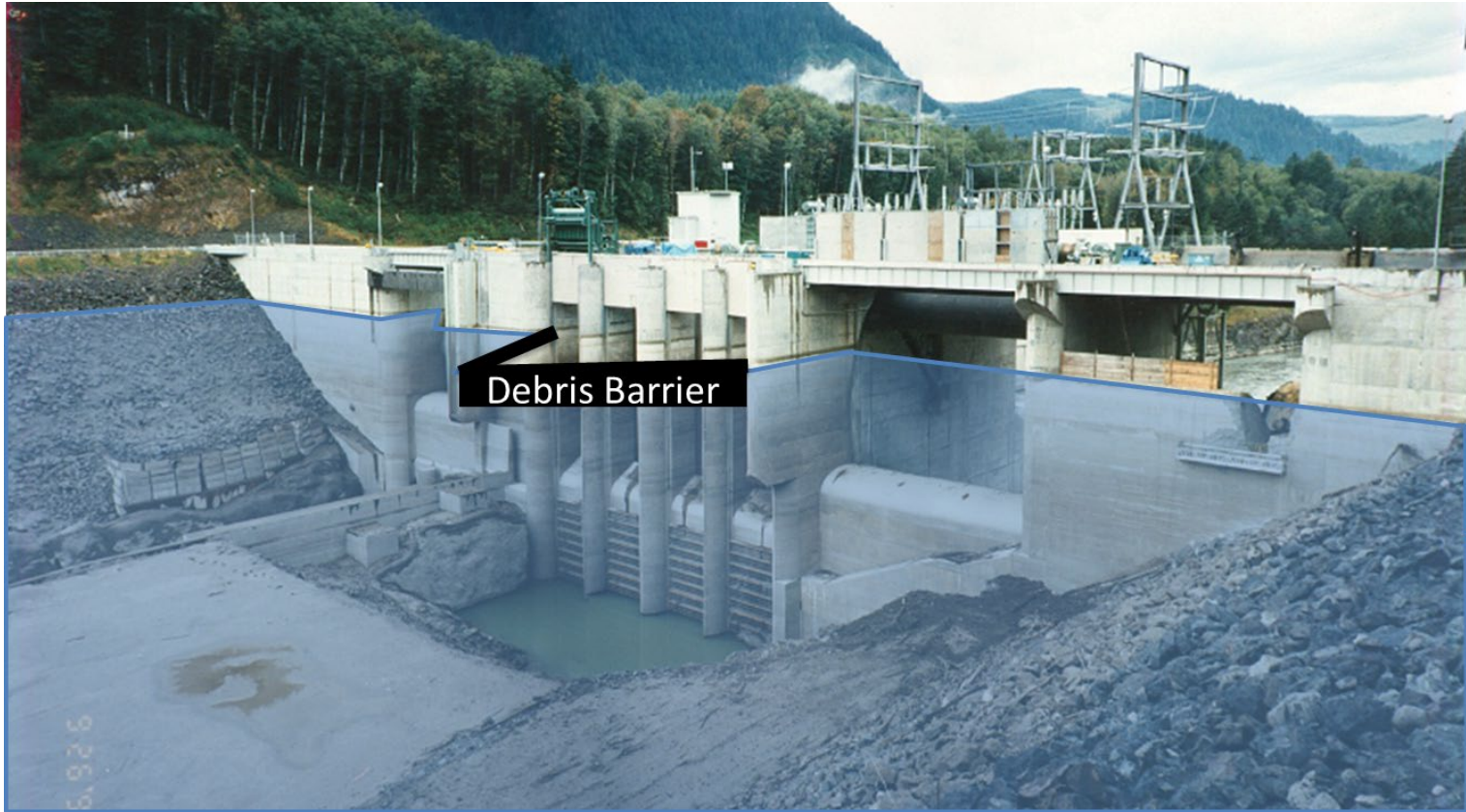
Historic Fish Passage Survival

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

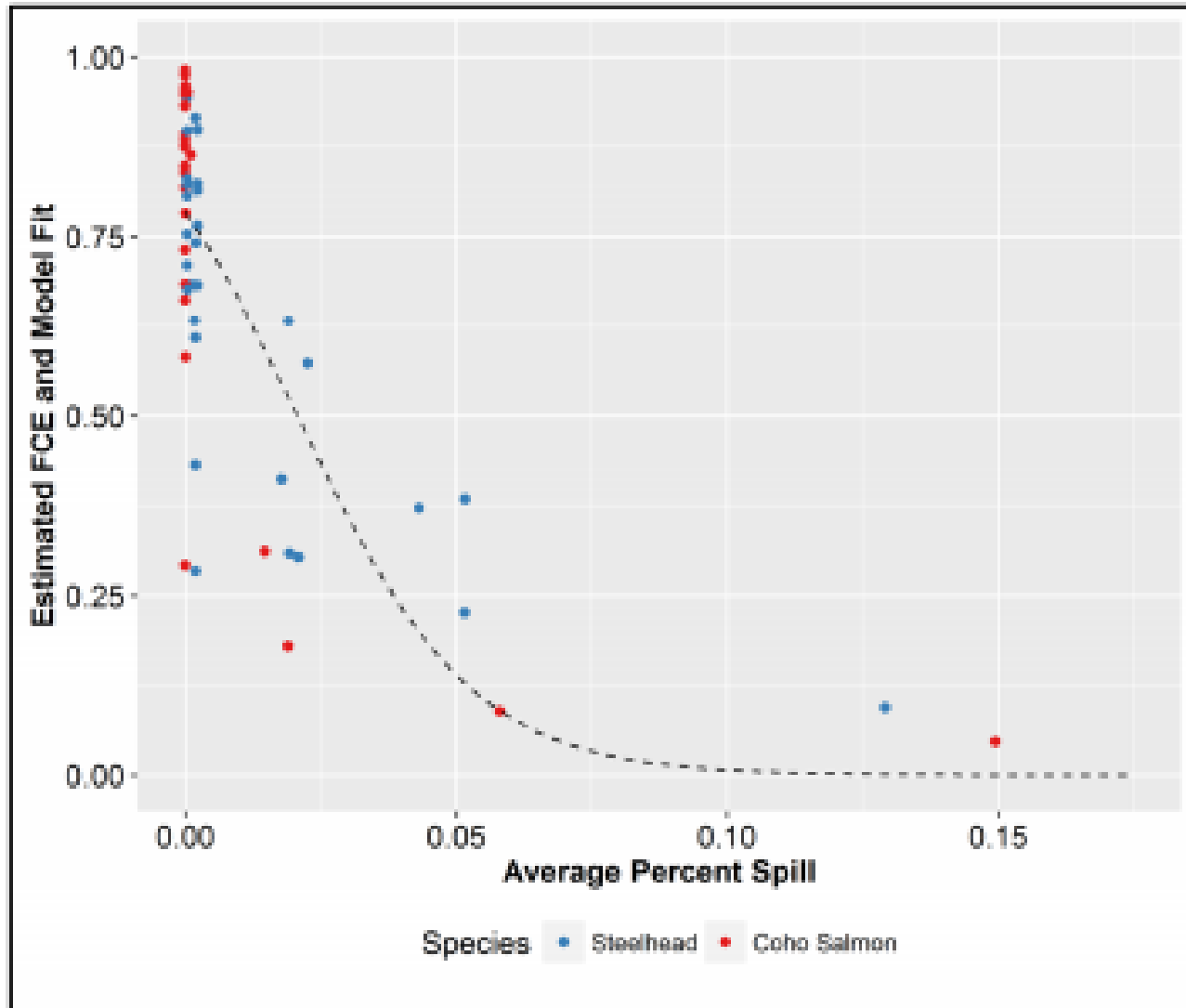


Low Entrance Efficiency

- Behavior near debris barrier



Spill vs FCE



Outline

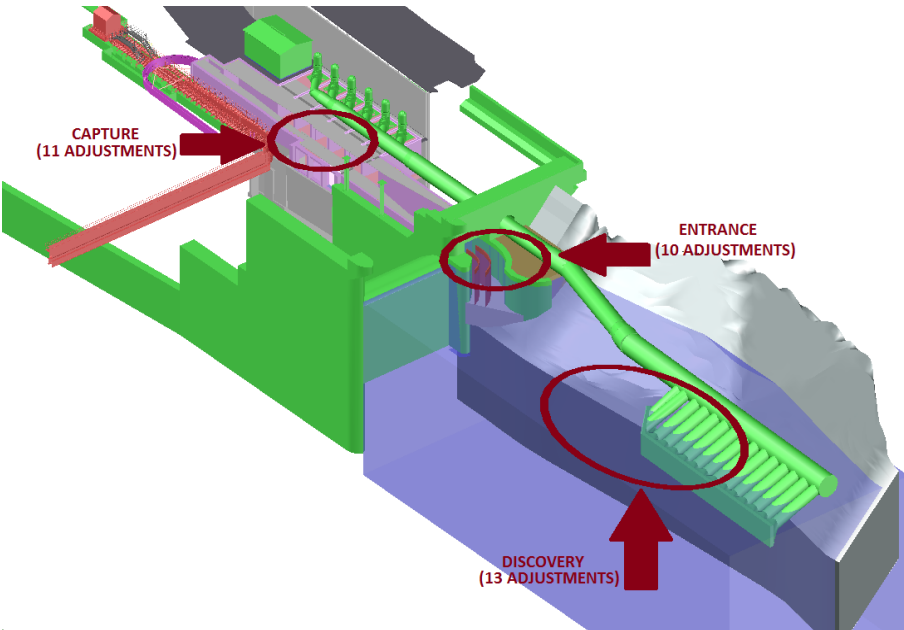
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Goals

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



Cowlitz Falls North Shore Collector



Cowlitz Falls Project



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- Cowlitz Falls Overview
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- **Monitoring Results**
- **Next Steps**

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

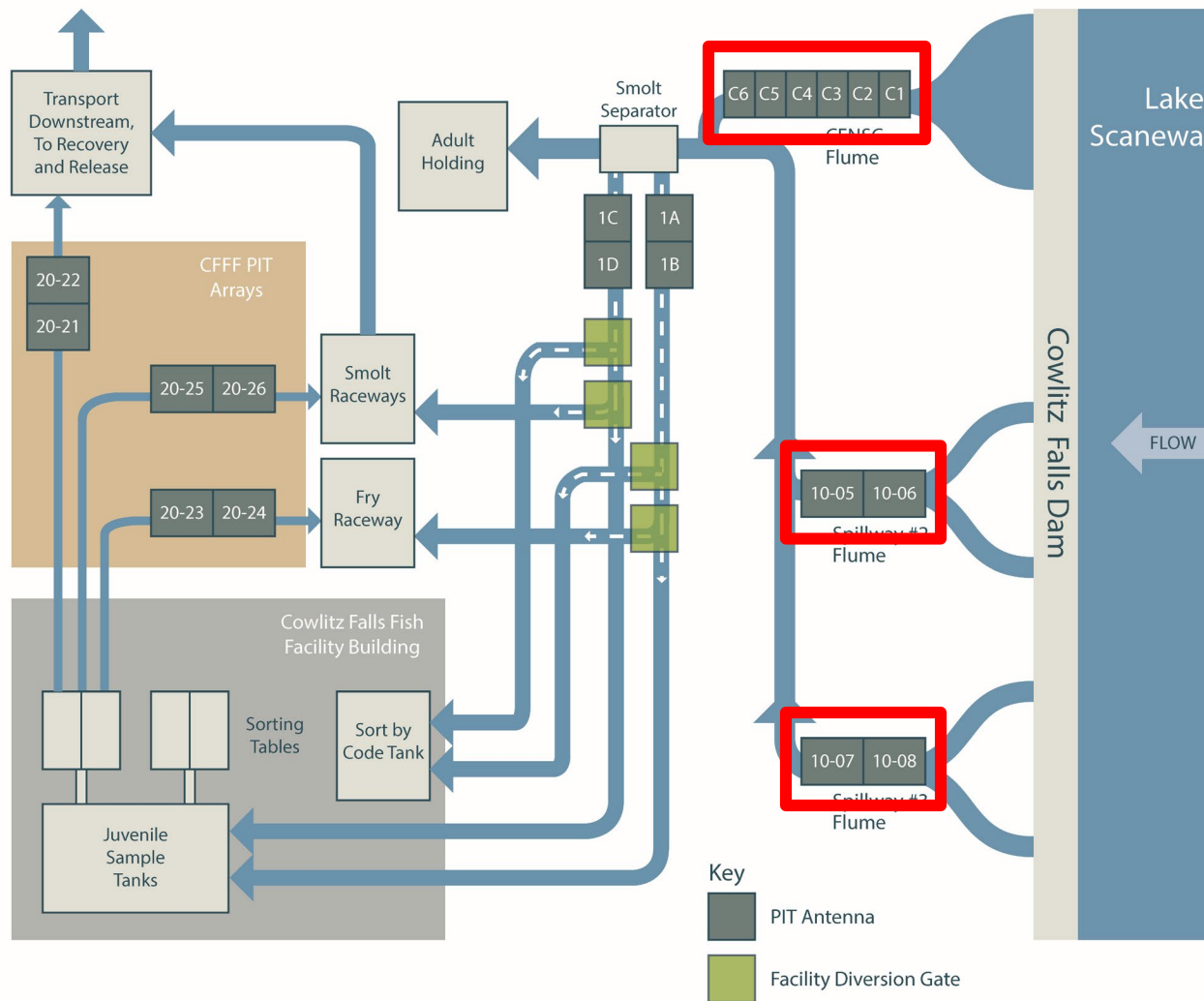
	Release Date Range	Annual Sample Size Range
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Steelhead	April 18 - June 15	476 - 837
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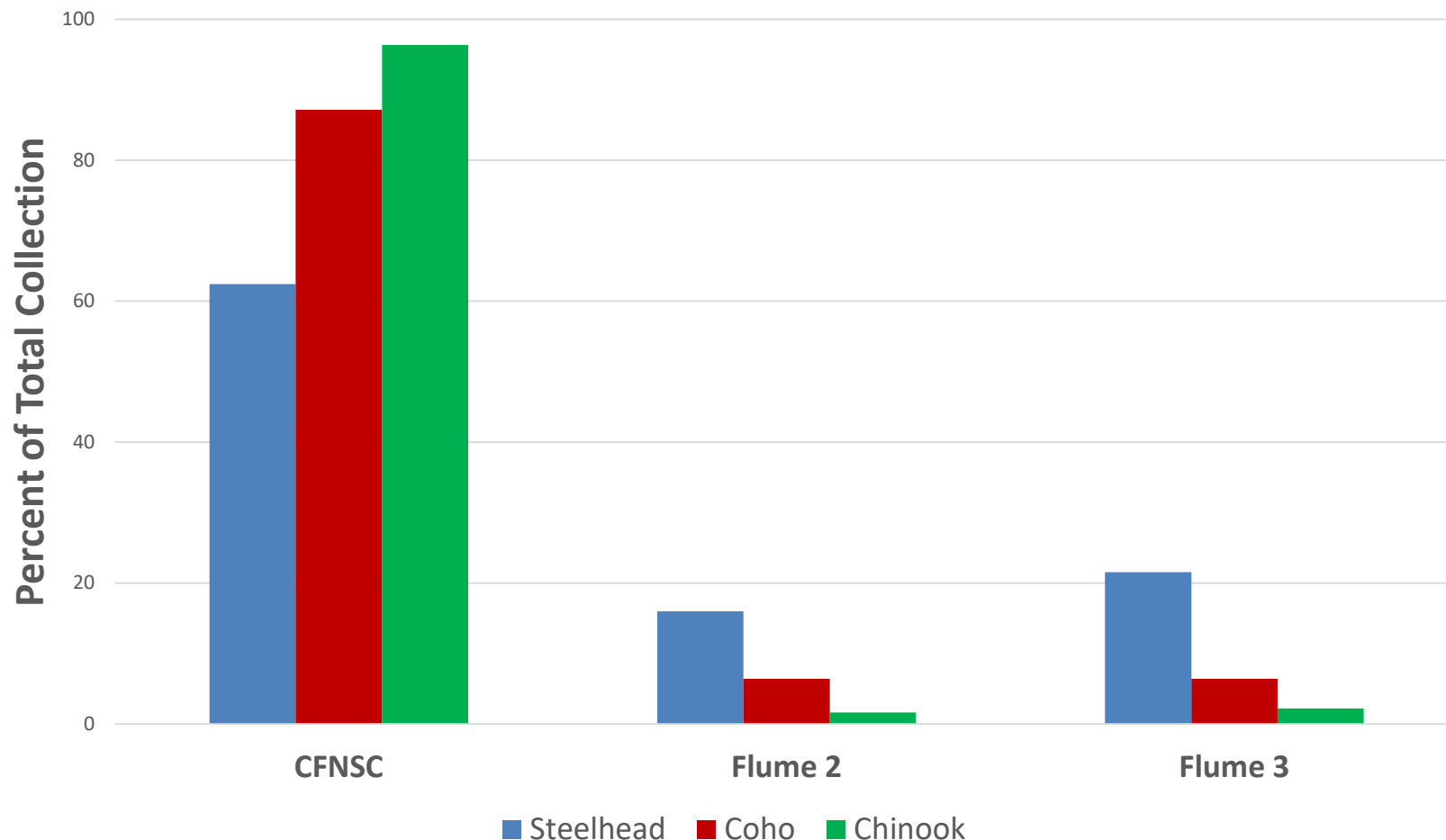
Coho	April 18 – July 12	601 - 1201
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Chinook	June 20 – Aug. 16	399 - 900
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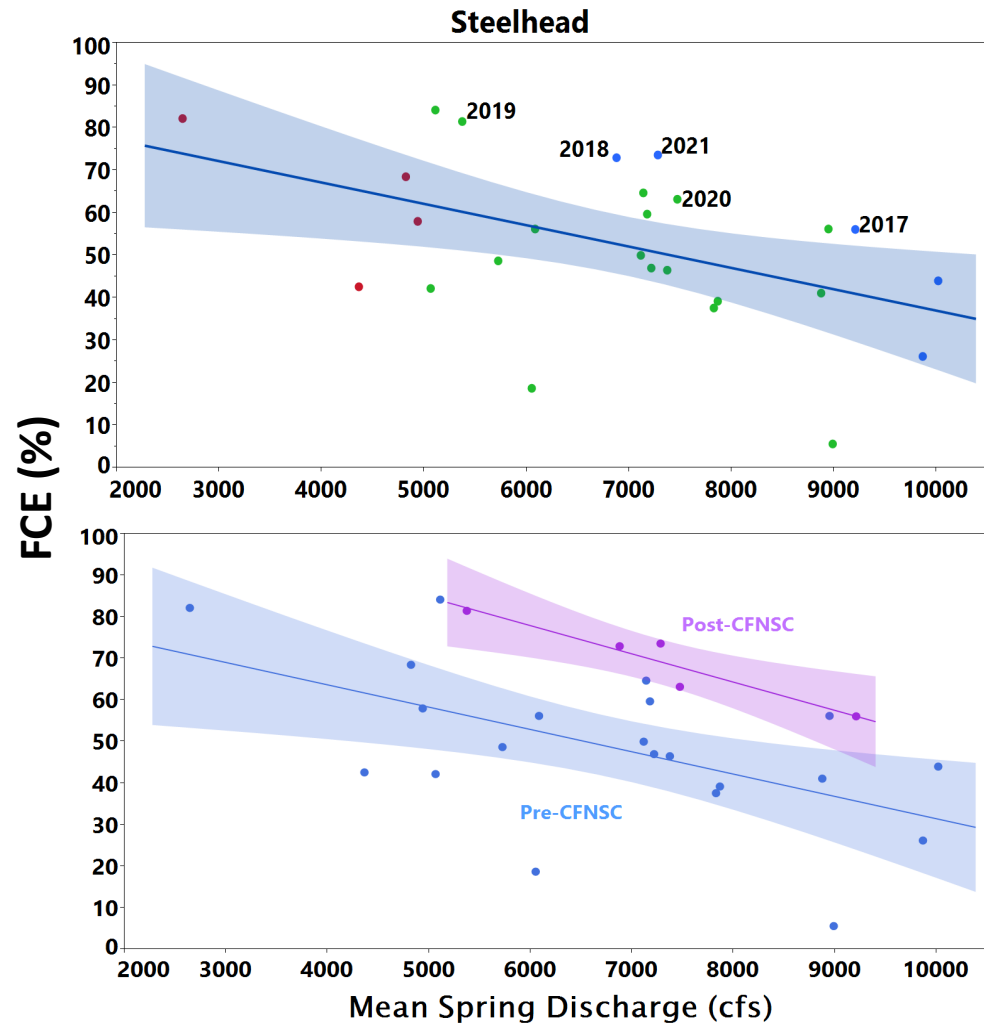
Cowlitz Falls PIT System



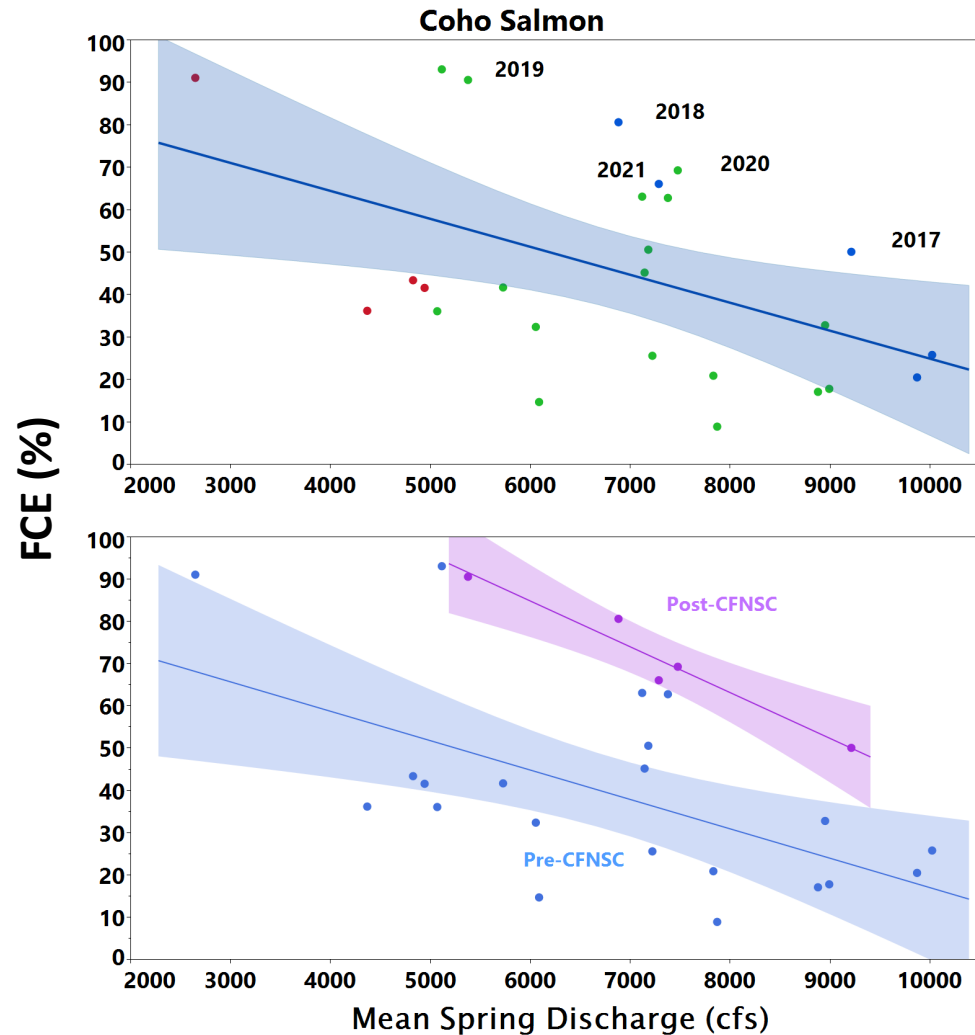
2017-2021 Route Selection



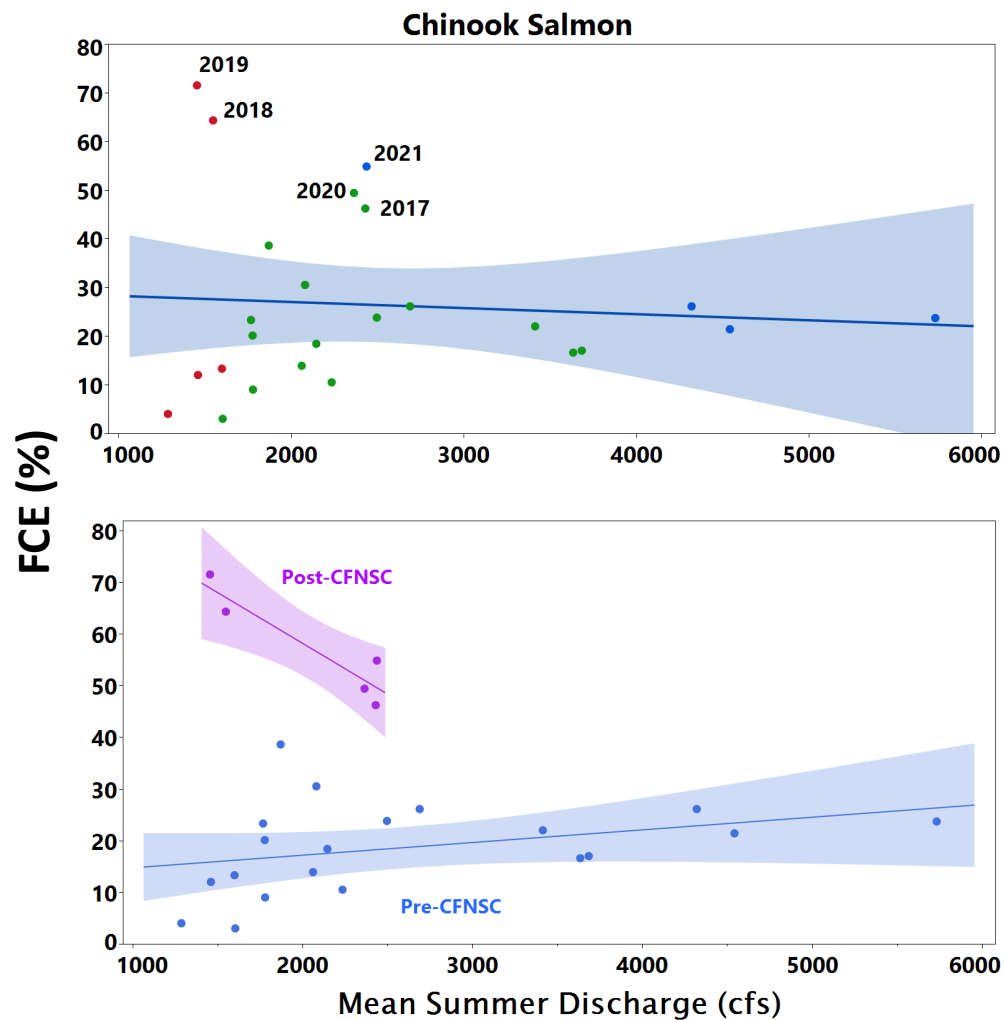
Water Year Comparison - Steelhead



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?

