

# Cowlitz River Project Fish Passage: Current Trends 2018 - 2023

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Science and Research Biologist

Cowlitz Annual Project Review and Science Conference

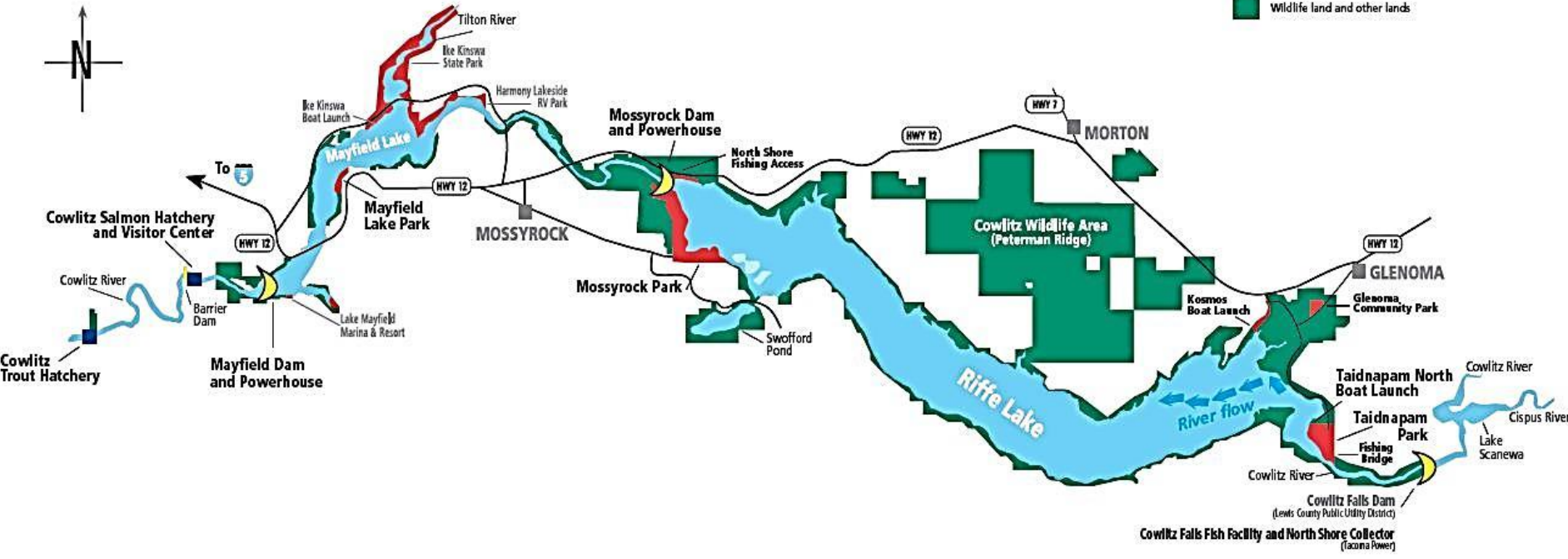
September 4th, 2024

# Outline

- Cowlitz Falls Dam Overview
- CFD Fish Collection History
- CFD Monitoring Results
- Mayfield Dam Overview
- Mayfield Monitoring Results

# Cowlitz River Project

- Dams and powerhouses
- Hatcheries
- Recreation areas
- Wildlife land and other lands



# Cowlitz River Project

- Dams and powerhouses
- Hatcheries
- Recreation areas
- Wildlife land and other lands



# Cowlitz Falls Project



## Dam Owner

Lewis County PUD

## Cowlitz Falls Fish Facility Owner Tacoma Power

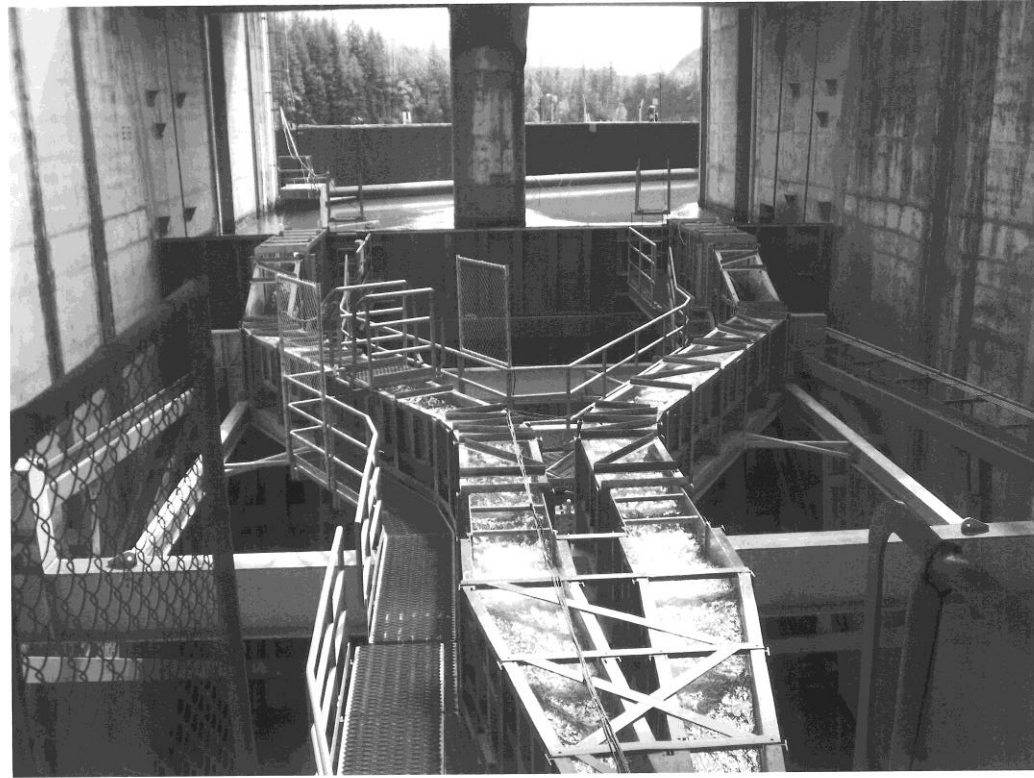
- Formerly owned by the Bonneville Power Administration
- Formerly operated by WDFW

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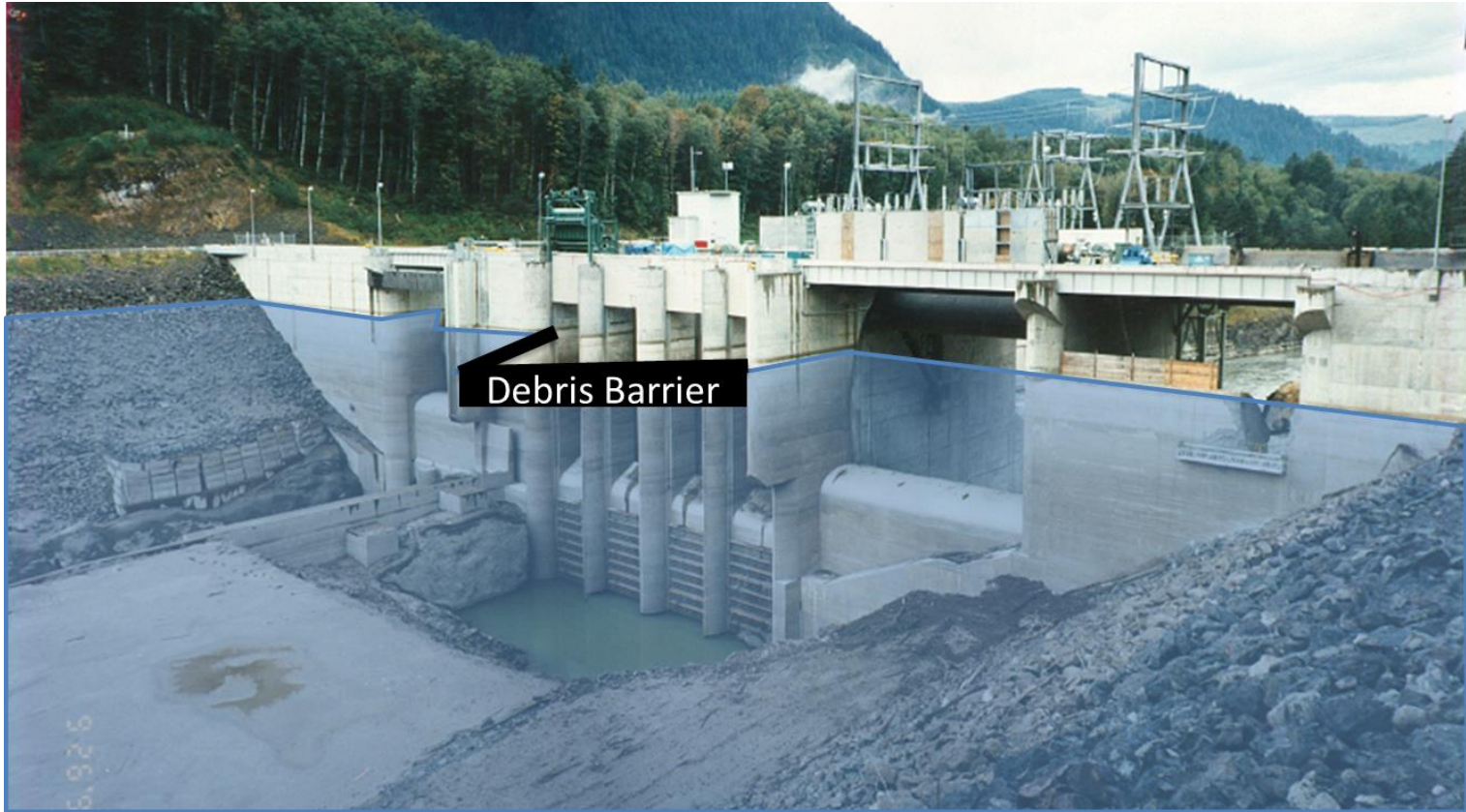
# Historic Fish Passage Survival

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



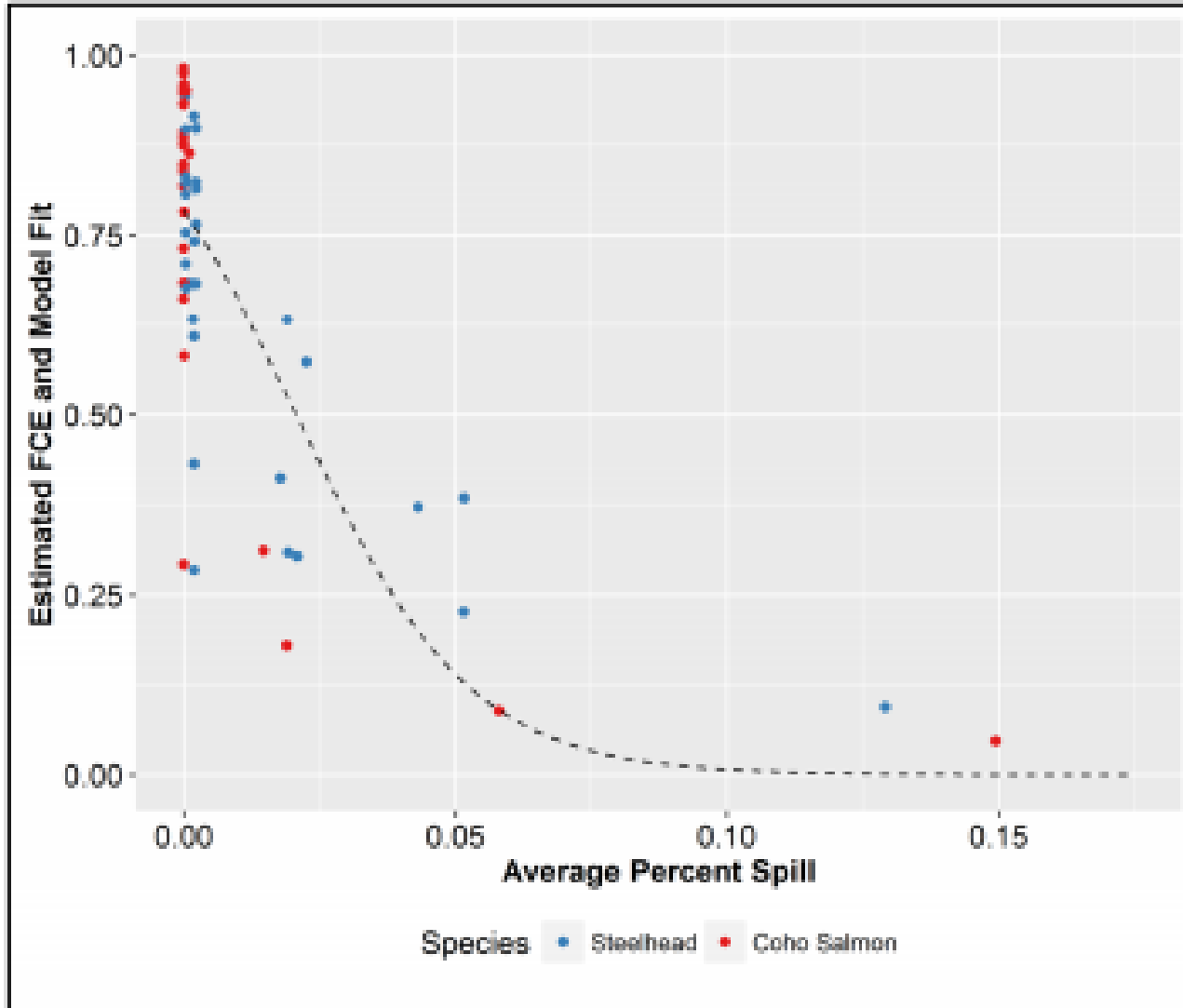
# Low Entrance Efficiency

- Behavior near debris barrier



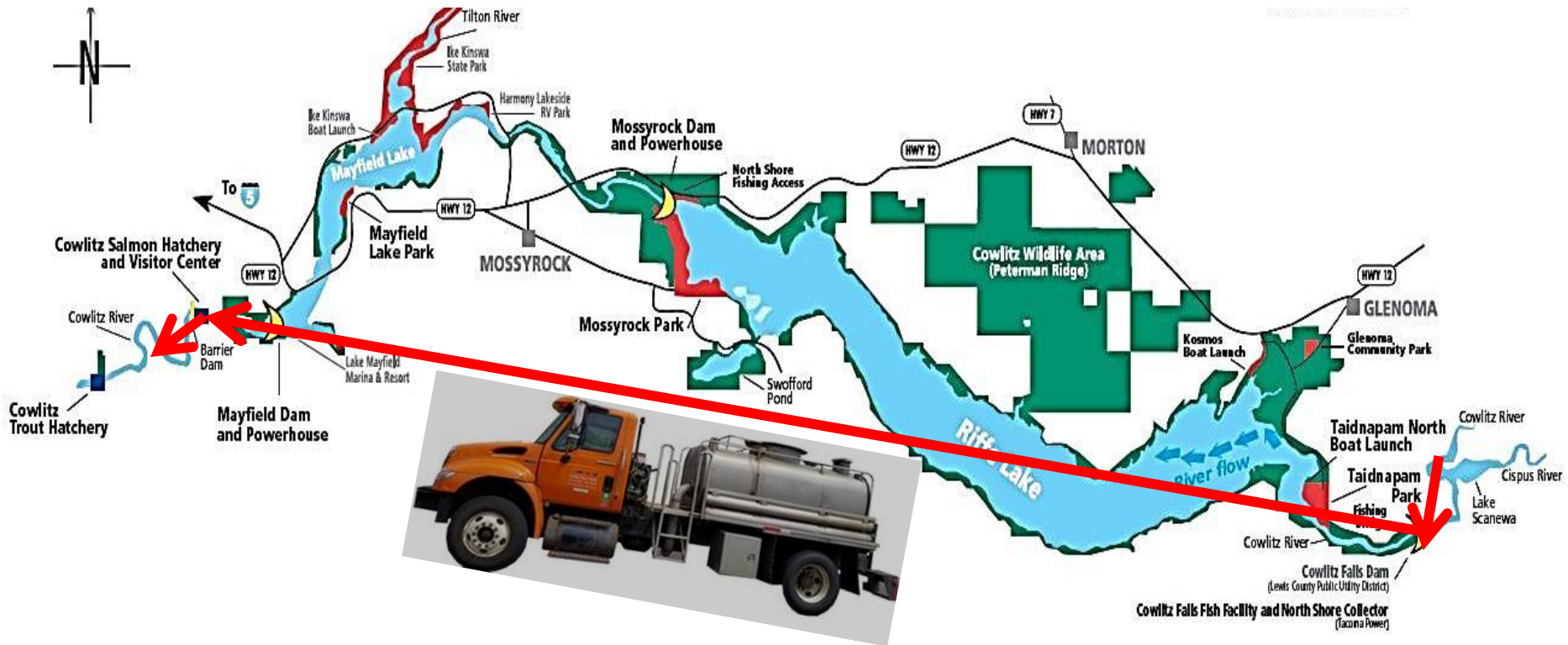


# Spill vs Fish Collection Efficiency (FCE)



# Performance Goal

## 95% Fish Passage Survival (FPS)

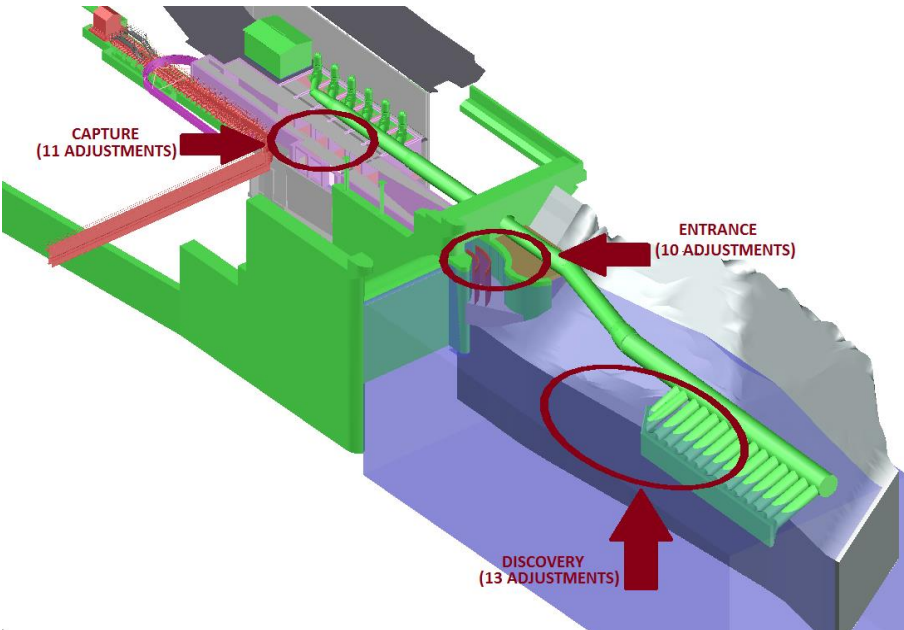


# Downstream Fish Passage Goals

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



# Cowlitz Falls North Shore Collector



# Cowlitz Falls Project



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- **Mayfield Monitoring Results**

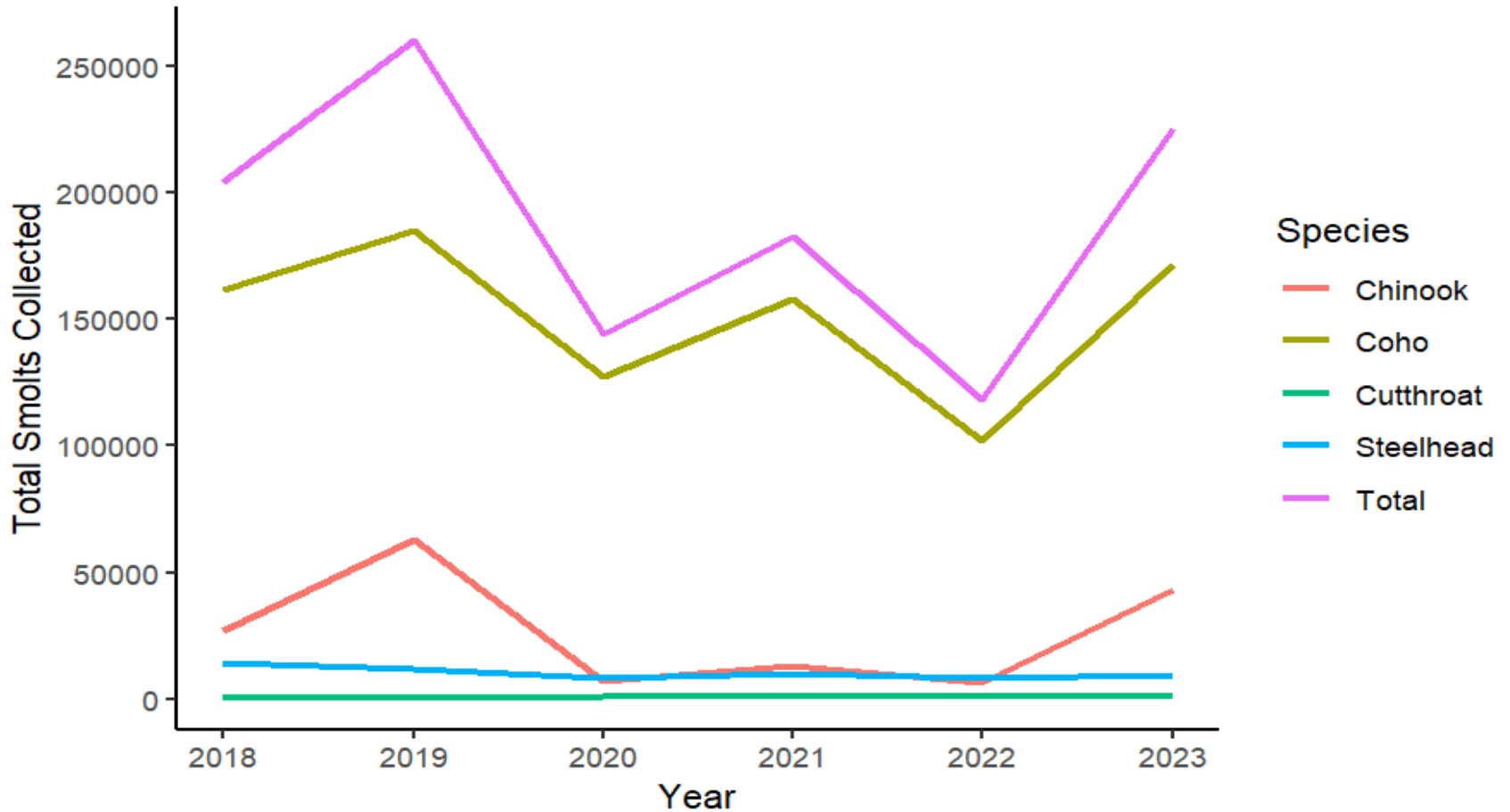
# Primary Operations

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	<b>Begin Date</b>	<b>End Date</b>
<b>2018</b>	March 1	Aug. 31
<b>2019</b>	March 1	Sept. 13
<b>2020</b>	Feb. 3	Sept. 30
<b>2021</b>	March 15	Sept. 30
<b>2022</b>	March 15	Sept. 30
<b>2023</b>	March 15	Sept. 30

# Run of River Outmigration

Run of River Outmigration  
All Age Classes





# Run of River: Fall Operations

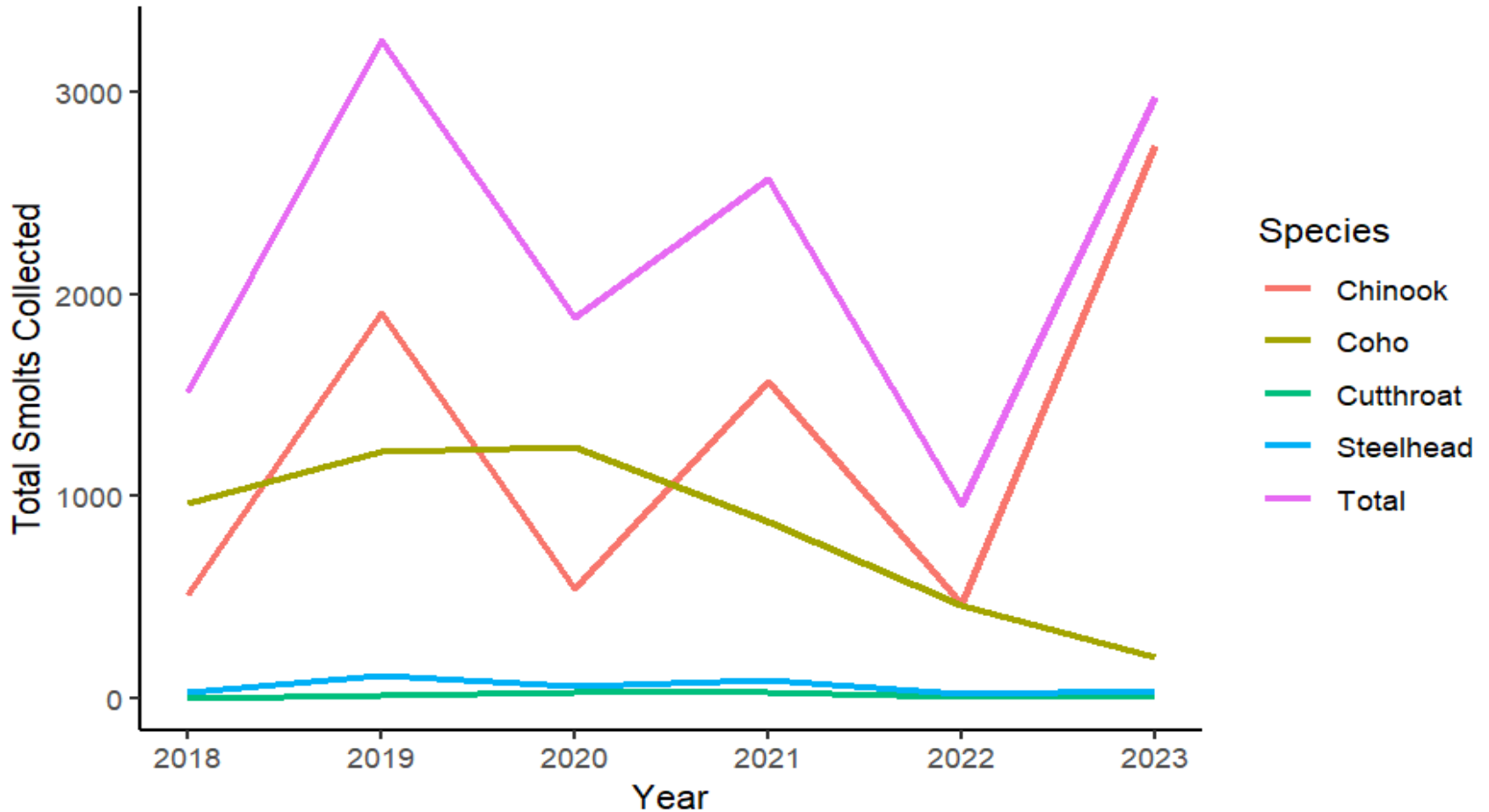
Generally operate for four consecutive weeks of three-day, 72-hour blocks.

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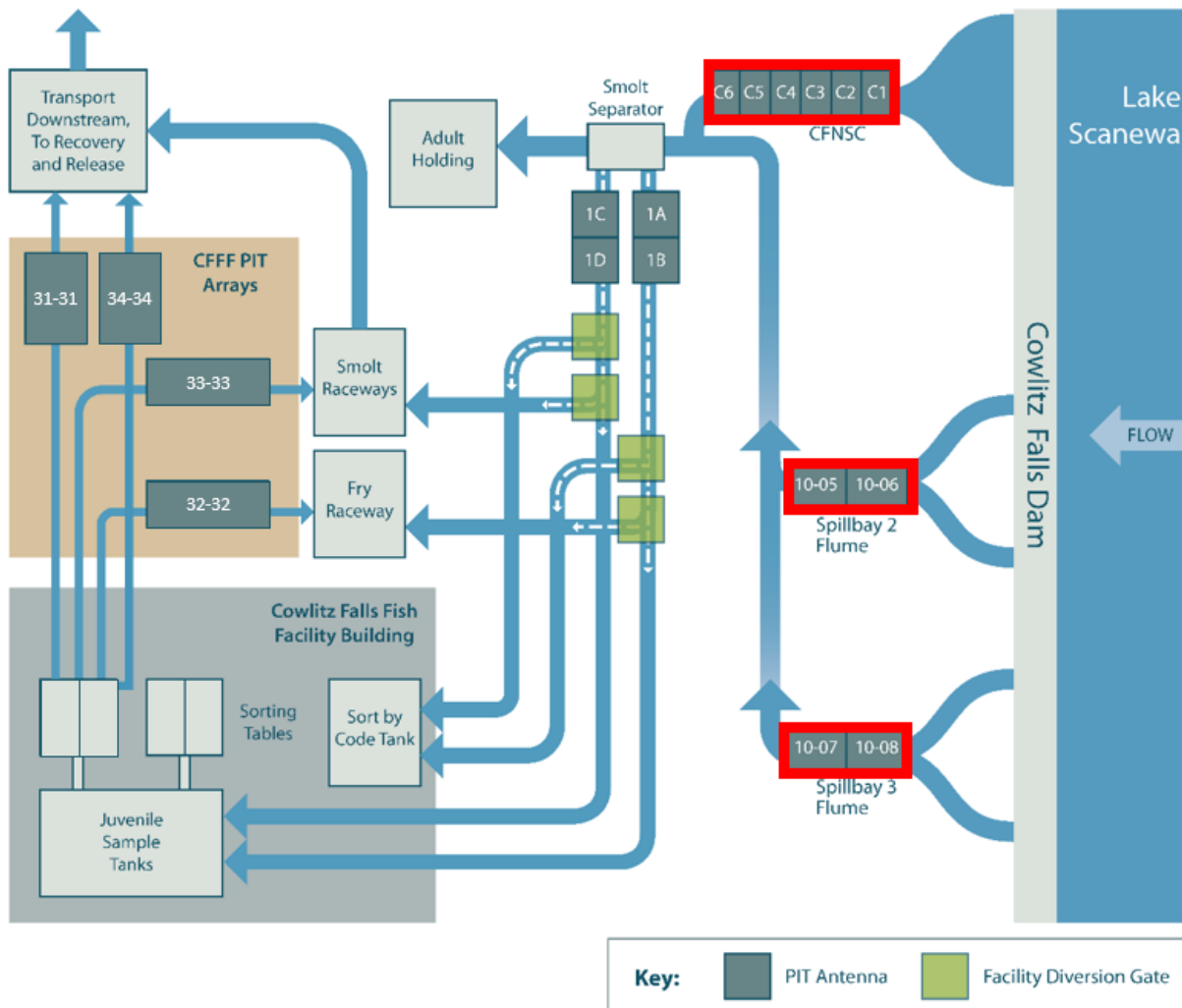
	<b>Begin Date</b>	<b>End Date</b>	<b>Hours (days)</b>
<b>2018</b>	Nov. 8	Dec. 21	203 (8.5)
<b>2019</b>	Oct. 22	Nov. 15	288 (12.0)
<b>2020</b>	Oct. 6	Oct. 30	294 (12.3)
<b>2021</b>	Oct. 5	Oct. 29	279 (11.6)
<b>2022</b>	Oct. 4	Oct. 28	288 (12.0)
<b>2023</b>	Oct. 3	Oct. 27	288 (12.0)

# Run of River Fall Migration

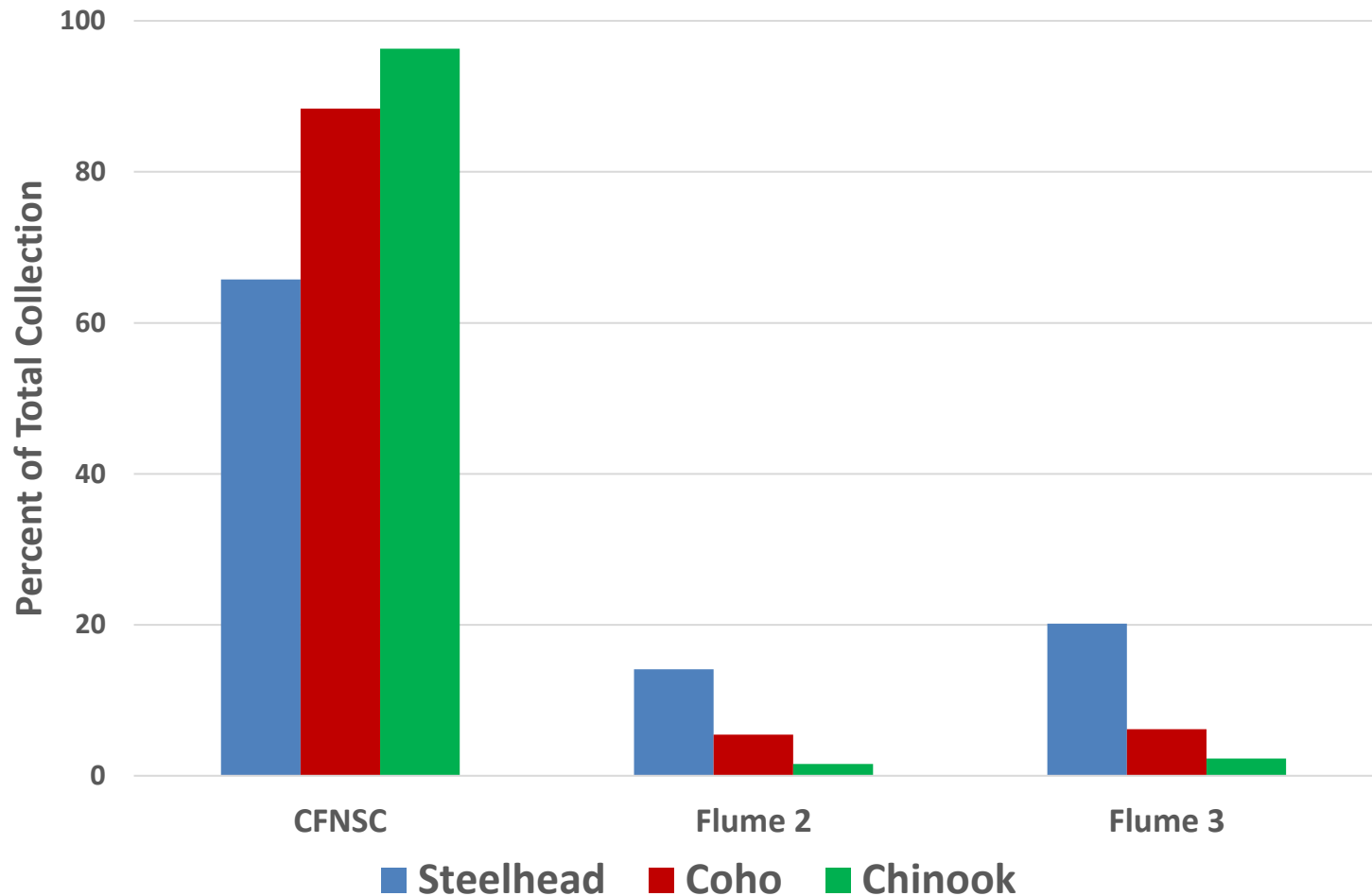
Fall Run of River Outmigration  
All Age Classes



# Cowlitz Falls PIT System



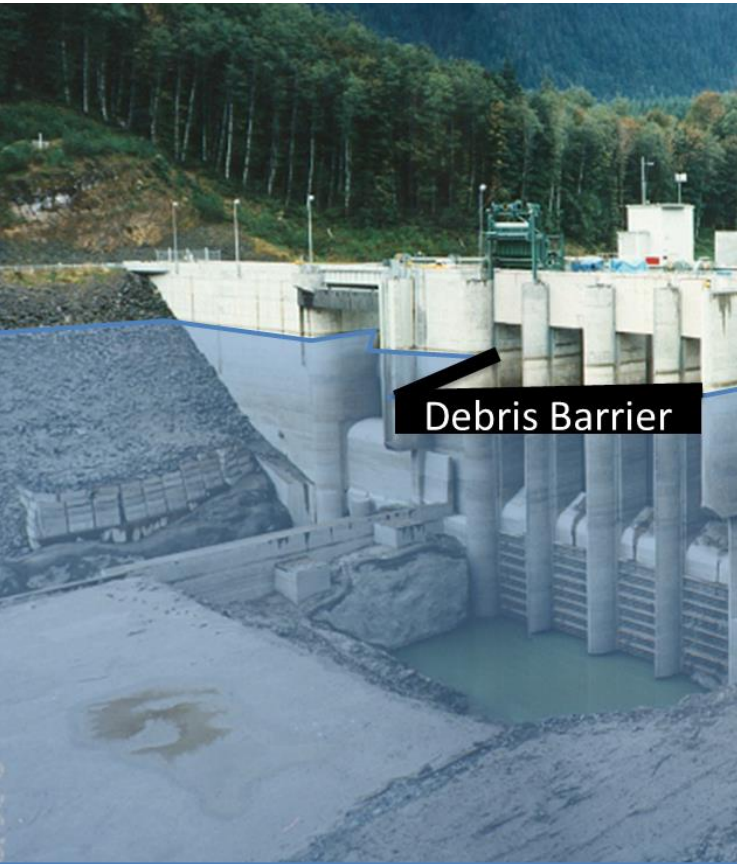
# Route Selection



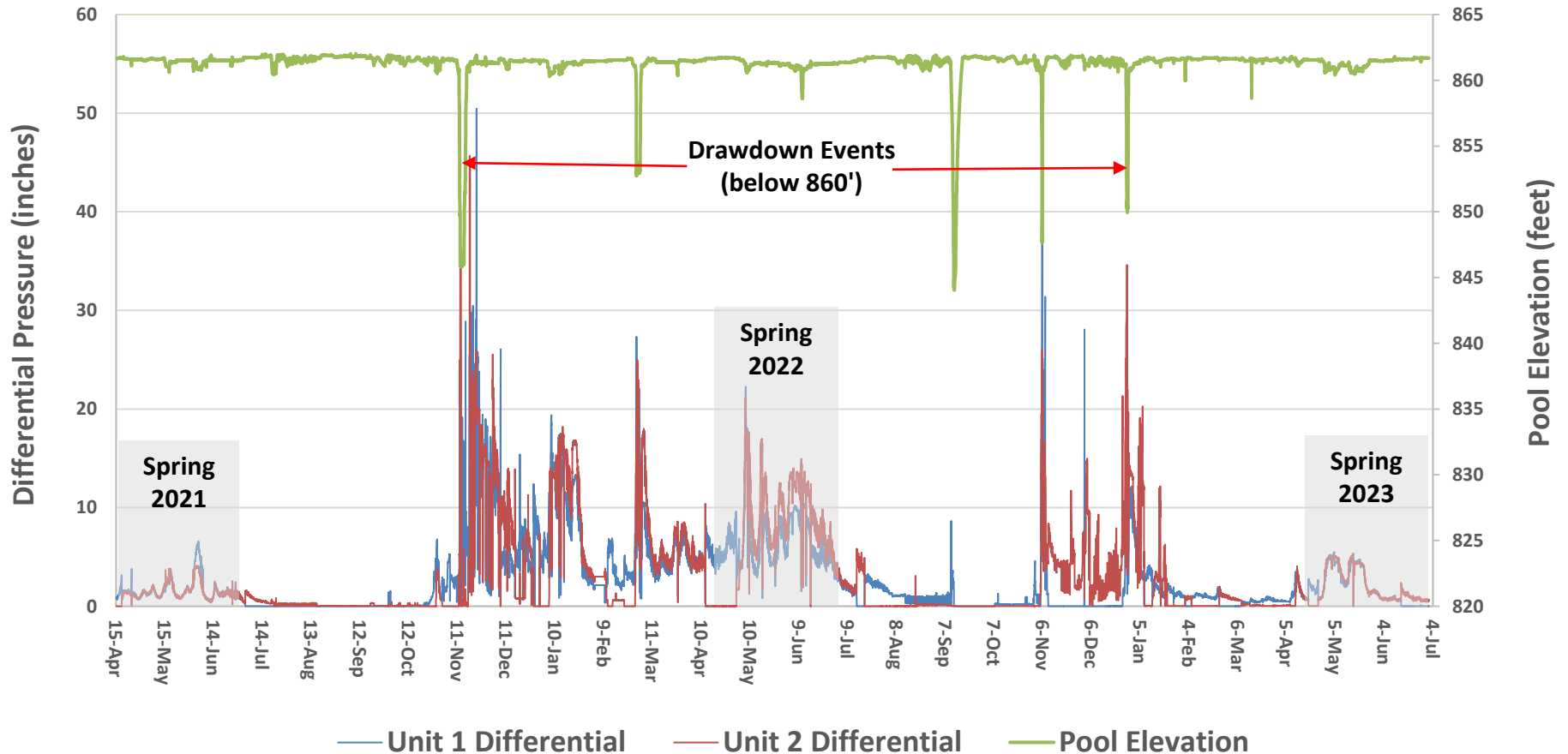
# Fish Passage Survival Summary

<b>Species</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>5-year mean</b>
<b>Steelhead</b>	83%	65%	76%	46%	68%	<b>68%</b>
<b>Coho</b>	93%	72%	68%	29%	78%	<b>68%</b>
<b>Chinook</b>	78%	54%	60%	62%	68%	<b>61%</b>

# Trash Rack Occlusion



# Trash Rack Occlusion

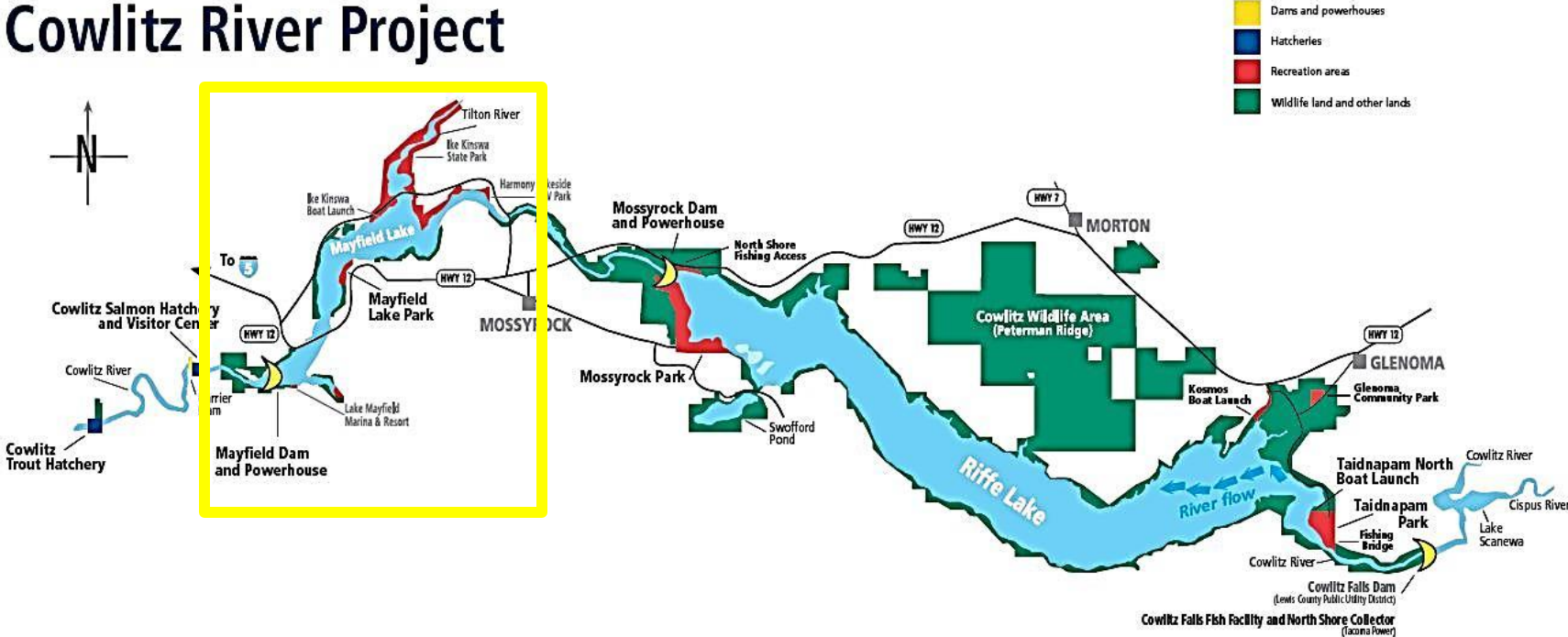


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# Cowlitz River Project



# Mayfield Dam Collection System

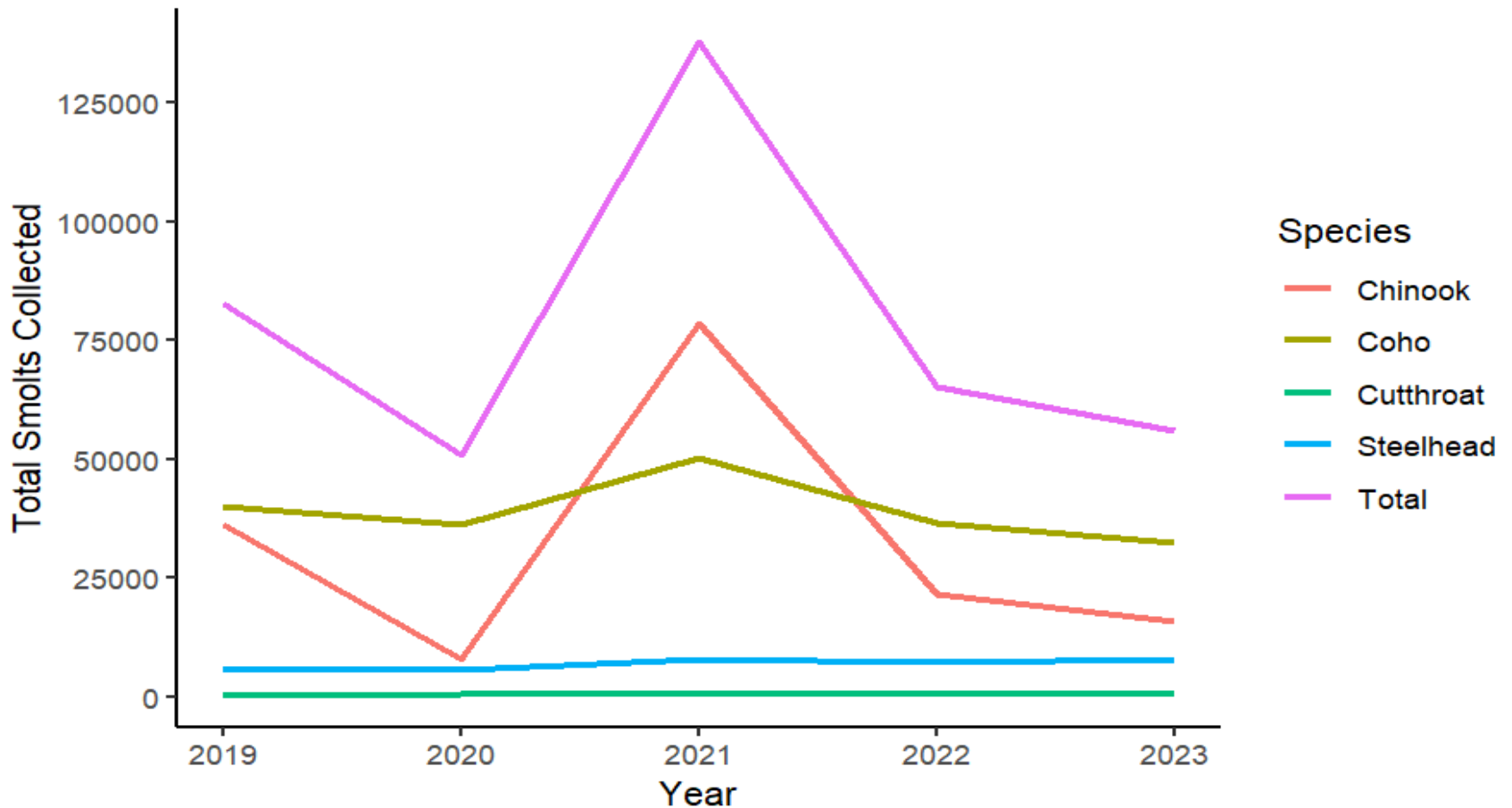


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- **Mayfield Monitoring Results**

# 5-year Run of River Outmigration

## Mayfield Run of River Outmigration All Age Classes



# 5 Year Adult Tilton River Plants

Year	Chinook	Coho	Steelhead	Cutthroat	Total
2019	647	8,258	242	52	9,199
2020	2,267	14,782	783	107	17,939
2021	863	18,352	365	125	19,705
2022	627	19,270	429	154	20,480
2023	744	10,449	163	172	11,528

# Questions?

