

# Washington Department of Fish and Wildlife

## Deep River Net Pens Annual Report

In partial fulfillment of requirements for environmental permitting  
for juvenile salmon aquaculture production under  
September 1, 2022, to August 30, 2023

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

**WASTE DISCHARGE PERMIT NO. WA0040053,**

**Lower Deep River Net Pens**

## 1. Name and contact

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Report prepared by Ann Leroux

## 2. Summary of fish during the season

Dates fish were added and released from pens.

Species	Net Pen #	# Received	Date received	# Planted	FPP*	Total LBS Planted	Date Released	Total Food fed lbs	Total Mortality
Coho	1	764,832	9/26/2022-11/7/2023	677,293	15	44,824	5/2/2023	23,092	87,539
Spring Chinook	2	94,760	11/1/2022	94,000	12	7,737	12/9/2022	1,876	760
Coho	3	36,000	11/2/2022	39,505	15	2,615	5/2/2023	719	3,893
Spring Chinook	4	129,627	4/5/2023	126,800	61	2,089	5/22/2023	1,742	2,827
* Fish per pound									

### Mortality

The high mortality in Coho pen 1 is because of longevity in the pen. The Coho are there from September until May and because of the duration they are hit by predation the hardest, Spring Chinook stocks are only at DRNP for a 1-month acclimation. Losses from otters, racoons, heron's, cormorants, and various mergansers and other fish ducks are abundant, causing shortages in the Coho populations. The mortality is not from a disease outbreak.

## 3. Feeding rates

Date	Container	Manufacturer	Feed Type	Feed	Additive	Quantity Monthly	Weekly
Oct 31, 2022	Net Pen 2 Spring Chinook	EWOS	Grower/Fry	Pacific 2.0 mm	None	1,210	303
Oct 31, 2022	Net Pen 1 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	2,940	735
Nov 30, 2022	Net Pen 2 Spring Chinook	EWOS	Grower/Fry	Pacific 2.0 mm	None	284	71
Nov 30, 2022	Net Pen 3 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	103	26
Nov 30, 2022	Net Pen 1 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	2,191	548
Dec 4, 2022	Net Pen 1 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	2,955	739
Dec 4, 2022	Net Pen 2 Spring Chinook	EWOS	Grower/Fry	Pacific 2.0 mm	None	382	96
Dec 4, 2022	Net Pen 3 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	139	43
Jan 31, 2023	Net Pen 3 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	225	56
Jan 31, 2023	Net Pen 1 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	5,446	1,362
Feb 28, 2023	Net Pen 3 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	127	32
Feb 28, 2023	Net Pen 1 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	3,212	803
Mar 31, 2023	Net Pen 3 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	125	31
Mar 31, 2023	Net Pen Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	2,999	750
Apr 30, 2023	Net Pen 2 Spring Chinook	EWOS	Grower/Fry	Pacific 1.2 mm	None	774	194
Apr 30, 2023	Net Pen 4 Sprng Chinook	Bio-Oregon	Starter	BioVita Starter #2	None	528	132
Apr 30, 2023	Net Pen 1 Coho	EWOS	Grower/Fry	Pacific 2.0 mm	None	3,349	837
May 22, 2023	Net Pen 4 Spring Chinook	EWOS	Grower/Fry	Pacific 1.2 mm	None	440	110

#### 4. Drug and pesticides

No drug or pesticide used during the season.

#### 5) Sampling of Nutrients

		Up stream			Down stream			
	Date		Turbidity NTU	DO mg/L	BOD mg/l	Turbidity NT	DO mg/L	BOD mg/L
2022	Sept							
	OCT	14	4.09	10.16	B 0	2.33	10.67	B 0
	NOV	16	4.38	14.5	B 0	4.7	14.8	B 0
	DEC	8	4.99	12.16	B 0	5.21	12.11	B 0
2023	JAN	11	4.92	10.59	B 0	4.73	10.5	2.3
	Feb	21	4.63	11.7	B 0	4.5	11.9	B 0
	Mar	6	3.39	12	B 0	3.62	12.2	B 0
	April	10	5.98	12.4	B 0	7.69	12.9	B 0
	May	12	3.17	6.97	B 0	2.62	7.08	B 0
	JUN							
	JUL							
	AUG							
	B 0 = undetected							

There were no fish fed in the net pens September 2022, and June 2023 to August 2023.

No Nutrient sampling is required for these months.

**Nutrient Sampling requirement from Permit.**

Parameter <sup>b</sup>	Units & Speciation	Minimum Sampling Frequency <sup>d</sup>	Sample Type
Turbidity (Upstream) <sup>e, f</sup>	NTU	Monthly <sup>c</sup>	Grab <sup>a</sup>
Turbidity (Downstream) <sup>e, g</sup>	NTU	Monthly <sup>c</sup>	Grab <sup>a</sup>
Dissolved Oxygen (Upstream) <sup>e, f</sup>	mg/L	Monthly <sup>c</sup>	Grab <sup>a</sup>
Dissolved Oxygen (Downstream) <sup>e, g</sup>	mg/L	Monthly <sup>c</sup>	Grab <sup>a</sup>
Biochemical Oxygen Demand (BOD <sub>5</sub> ) (Upstream) <sup>e, f</sup>	mg/L	Monthly <sup>c</sup>	Grab <sup>a</sup>
BOD <sub>5</sub> (Downstream) <sup>e, g</sup>	mg/L	Monthly <sup>c</sup>	Grab <sup>a</sup>

**6. Documentation of Spill**

No spills occurred at this location.

**7. Documentation and use of Chemical**

There were no antibiotic or chemical treatment during the season.

**8. Corrective Actions**

No corrective actions were necessary during the season.