

**2021 Annual Report of Direct Take to the National Marine Fisheries Service
(NMFS)
on Mitchell Act Integrated Hatchery Programs**

Submitted to:
NMFS – Sustainable Fisheries Division
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Introduction

The Washington Department of Fish and Wildlife (WDFW) submitted Hatchery and Genetic Management Plans (HGMPs) to the National Marine Fisheries Service (NMFS) for the following hatchery programs; Kalama Hatchery wild summer steelhead, Kalama Hatchery late winter steelhead, North Toutle Hatchery fall Chinook, North Toutle Hatchery coho, Washougal River fall Chinook, Washougal River coho, and more recently Beaver Creek Hatchery coho. These programs requested direct take of natural-origin salmonids to use in integrated hatchery programs. The NMFS has determined that the seven HGMPs meet the 4(d) rule limit 5 criteria for take exemption of ESA-listed species. This report provides information to satisfy the implementation and reporting requirements of the take exemption. Additional information regarding the implementation of the HGMPs were provided to NMFS in semi-annual reports.

This report includes:

- The number of natural-origin Chinook salmon, coho salmon, and steelhead collected and used for broodstock
- The impact of broodstock integration on the respective natural-origin population, with reference to the HGMP criteria for maximum impact levels
- The total number of hatchery Chinook salmon, coho salmon, and steelhead released by brood year for the hatchery programs

Summary of Information

Goals of the integrated program contained in the HGMPs include:

- Integration is achieved by using up to 30% of the returning adult natural-origin
- Broodstock for this program will be managed with a goal of having pNOB at least twice the value of pHOS
- Broodstock are collected throughout the entire run to maintain run timing for the population

Broodstock numbers for the seven integrated programs are shown in Table 1 for brood year 2020. This table includes the numbers of hatchery origin and natural-origin fish (NOR) used in the broodstock. The adult goals for all hatchery programs vary from year to year based on average fecundity, percent females, and mortality rates. Table 2 shows the total number of natural-origin fish taken for brood (including mortalities and non-viable females) compared to the total natural-origin population. The total natural-origin population includes the natural spawners, the fish taken for brood to the hatchery, the mortalities at the hatchery, and non-viable females taken for brood at hatchery. Table 3 shows the numbers of fish released by species at Mitchell Act facilities during 2020 including the numbers marked and tagged.

Table 1. Broodstock numbers for integrated hatchery programs for 2020 brood.

Hatchery	Brood Year	Species	Stock	Spawned					
				Hatchery Adults	Hatchery Jacks	Wild Adults	Wild Jacks	Wild Total	pNOB
Beaver Creek	2020	Coho	Late	27	0	109	54	163	86%
North Toutle	2020	Coho	Early	44	0	85	2	87	66%
	2020	FCH		496	7	71	3	74	13%
Kalama Falls	2020	STHD	Winter late ^{1/}	0	0	62	0	62	100%
	2020	STHD	Summer ^{1/}	10	0	46	0	46	82%
Washougal	2020	Coho	Late	38	0	38	0	38	50%
	2020	FCH		1,054	15	104	0	104	9%

1/ Includes fish that were live spawned

Table 2. Numbers of 2020 Brood Year Natural Origin fish taken for brood compared to the total population.

Hatchery	Brood Year	Species	Stock	NOR Population ^{1/}	Number of NORs Collected ^{2/}	% of NOR Population Taken for Brood	30% of NOR Population
North Toutle	2020	Coho	Early	5,710	104	2%	1,713
	2020	FCH		490	144	29%	147
Kalama Falls	2020	STHD	Winter late	555	64	12%	167
	2020	STHD	Summer	305	72	24%	92
Washougal	2020	Coho	Late	1,054	38	4%	316
	2020	FCH		3,921	149	4%	1,176

^{1/} NOR population includes spawning population estimate, fish taken for brood, mortalities, and non-viable females

^{2/} Includes fish taken for brood, mortalities, and non-viable females

Table 3. Numbers of fish released, marked, and tagged in 2020.

MITCHELL ACT Marking and Tagging Calendar Year 2020									
Project	Release Location	Species/Run	Release Start Date	Brood Year	Ad + CWT Marked	Ad Only Marked	CWT Only	Unmarked	Total Released
Beaver Creek Hatchery	Elochoman River	Coho	4/20/2020	2018	47,206	152,873	-	321	200,400
Beaver Creek Hatchery	Elochoman River	Winter Steelhead	4/20/2020	2019	-	131,884	-	516	132,400
Beaver Creek Hatchery	Elochoman River	Summer Steelhead	4/20/2020	2019	-	29,411	-	59	29,470
Beaver Creek Hatchery	Grays River	Chum ^{1/}	3/20/2020	2019	-	-	-	195,482	195,482
Beaver Creek Hatchery	Skamokawa Creek	Chum ^{1/}	4/6/2020	2019	-	-	-	53,658	53,658
Deep River Net Pens	Deep River Net Pens	Spring Chinook	6/5/2020	2019	224,807	2,410	18,180	403	245,800
Deep River Net Pens	Deep River Net Pens	Coho	5/4/2020	2018	46,743	655,621	89	3,547	706,000
Fallert Creek Hatchery	Kalama River	Spring Chinook	3/3/2020	2018	120,155	357,502	579	1,725	479,961
Fallert Creek Hatchery	Kalama River	Fall Chinook	5/19/2020	2019	553,308	2,551,122	4,611	74,437	3,183,478
Fallert Creek Hatchery	Kalama River	Winter Steelhead	5/13/2020	2019	-	46,495	-	-	46,495
Fallert Creek Hatchery	Kalama River	Summer Steelhead	4/21/2020	2019	-	10,179	-	45,873	56,052
Kalama Falls Hatchery	Kalama River	Fall Chinook	5/26/2020	2019	100,704	3,415,893	354	172,087	3,689,038
Kalama Falls Hatchery	Kalama River	Coho	3/21/2020	2018	34,352	266,899	166	564	301,981
Kalama Falls Hatchery	Kalama River	Winter Steelhead	4/13/2020	2019	63,944	128	282	1	64,355
North Toutle Hatchery	Green River	Fall Chinook	6/28/2020	2019	95,040	1,047,812	1,291	5,879	1,150,022
North Toutle Hatchery	Green River	Coho	4/27/2020	2018	29,576	79,680	-	212	109,468
Ringold Springs Hatchery	Springs Creek	Fall Chinook	5/20/2020	2019	362,571	3,213,985	363	6,203	3,583,122
Ringold Springs Hatchery	Springs Creek	Coho	4/16/2020	2018	54,138	196,697	136	493	251,464
Skamania Hatchery	Klickitat River	Summer Steelhead	4/20/2020	2019	-	89,537	-	749	90,286
Skamania Hatchery	Rock Creek	Winter Steelhead	5/11/2020	2019	-	19,969	-	80	20,049
Skamania Hatchery	Washougal River	Winter Steelhead	4/15/2020	2019	-	85,075	-	16	85,091
Skamania Hatchery	Salmon Creek	Winter Steelhead	5/11/2020	2019	-	35,925	-	101	36,026
Skamania Hatchery	Washougal River	Summer Steelhead	4/23/2020	2019	-	70,069	-	197	70,266
South Fork Toutle	South Fork Toutle	Summer Steelhead	3/21/2020	2019	-	40,823	-	81	40,904
Washougal Hatchery	Washougal River	Fall Chinook	6/17/2020	2019	98,423	1,784,858	1,014	18,393	1,902,688
Washougal Hatchery	Klickitat River	Coho	3/23/2020	2018	70,320	2,405,993	212	7,239	2,483,764
Washougal Hatchery	Washougal River	Coho	4/14/2020	2018	43,252	85,948	344	684	130,228

^{1/} 100% otolith marked