



MEMORANDUM

DEPARTMENT OF FISH AND WILDLIFE
INTRA DEPARTMENTAL

FROM: Adam Storch
TO: Files
SUBJECT: 2022 Willamette River spring Chinook Run and 2023 forecast
GEN. DATE: 13 August 2012

Summary of 2022 Willamette River spring Chinook return

The total Willamette River spring Chinook return to the Columbia River mouth during 2022 is estimated to be 57,317 fish (Table 1). An estimated 10,728 of these fish were unmarked (~19%). The 2022 total reconstructed return was approximately 109% of forecast. The Clackamas River component was approximately 137% of forecast, with 6,432 spring Chinook returning to the Clackamas River compared to 4,704 (95% credible interval: 2,321–7,201) fish expected.

The total return of adipose-fin-marked hatchery fish to the Columbia River mouth in 2022 is estimated to be 46,589, compared to 37,019 (95% credible interval: 21,561–53,649) fish expected. Counts at the Willamette Falls fishway indicate that 31,937 fin-marked hatchery fish and 6,692 unmarked fish passed the fish ladder. The full reconstruction of the 2022 return is shown in Table 2.

Table 1. 2022 forecasted and reconstructed return of Willamette River spring Chinook Salmon to Columbia River mouth.

	Age 3	Age 4	Age 5	Age 6	Total adults	Total adults+jacks
2022 Forecast	1,731	34,770	16,082	107	50,958	52,689
95% CrI	770–2,705	18,704–50,559	4,595–29,438	0–316	30,842–72,915	32,700–74,813
2022 Reconstructed Return	1,926	37,907	17,435	49	55,391	57,317

The forecast for 2022 assumed 26% of the return would be comprised of unmarked fish based on the mean percentage of unmarked fish seen in the 2017–2021 returns. The actual unmarked rate for the full 2022 return is estimated to have been approximately 19%.

Table 2. Preliminary summary of 2022 Willamette River spring Chinook Salmon return.

Catch	Age 3	Age 4	Age 5	Age 6	Total _{adults}	Total _{adults+jacks}
SAF Commercial	0	462	387	0	849	849
LCR Sport (kept catch)	6	1,264	527	0	1,791	1,797
LCR Sport (release mortality)	0	14	5	0	19	19
L. Will. Sport Fishery kept catch	53	5,738	3,055	9	8,802	8,855
L. Will. Sport Fishery release mortality	1	112	60	0	172	173
Lower Clackamas Sport (kept catch)	0	12	1	0	13	13
Lower Clackamas Sport (rel. mortality)	0	2	0	0	2	2
Grand Ronde Will. Falls platform (kept catch)	0	9	5	0	14	14
Totals	60	7,613	4,040	9	11,662	11,722
Escapement						
Willamette Falls Count	1,572	24,156	12,861	40	37,057	38,629
Mortality Below Falls	1	72	38	0	110	111
Clackamas Hatchery swim-ins	43	2,062	106	0	2,168	2,211
PGE transfers to Clack Hatchery from N.F. Dam	0	538	28	0	566	566
Eagle Creek Hatchery Return	0	0	0	0	0	0
North Fork Dam, Passed Upstream	247	3,174	211	0	3,385	3,632
North Fork Dam, Recycled Downstream	0	0	0	0	0	0
Natural Spawn Bel. N.F. Dam	0	8	0	0	8	8
California Sea Lion Predation	3	284	151	0	435	438
Totals	1,866	30,294	13,395	40	43,729	45,595
Run Entering Columbia	1,926	37,907	17,435	49	55,391	57,317
Run Entering Willamette	1,920	36,167	16,516	49	52,732	54,652
Run Entering Clackamas	290	5,796	346	0	6,142	6,432

Projected Willamette River spring Chinook Salmon return in 2023

Age-3