

TABLE I-1. Preseason
Production Source and
Stock or Stock Group

	2019	2020	2021	2022	2023	2024	Methodology for 2024 Prediction and Source
Sacramento River							
Fall (Sacramento Index)	379.6	473.2	271.0	396.5	169.8	213.6	Log-log regression of the Sacramento Index on jack escapement from
Winter (age-3 absent)	1.9	3.1	9.1	6.0	4.5	1.1	Gaussian process model applied to a time series of the SRWC age-3
Klamath River (Ocean Abundance)							
Fall	274.2	186.6	181.5	200.1	103.8	180.7	Linear regression analysis of age-specific ocean abundance estimates on river runs of same cohort. STT
Oregon Coast							
North and South/Local Migrating	--	--	--	--	--	--	None.
Columbia River (Ocean Escapement)							
Cowlitz Spring	1.3	1.4	1.8	4.1	9.0	4.7	Cowlitz, Kalama, and Lewis: Age-specific linear regressions of cohort
Kalama Spring	1.4	1.0	2.2	2.0	2.4	1.9	
Lewis Spring	1.5	1.4	2.4	2.4	4.7	3.4	
Sandy Spring	5.5	5.2	5.3	5.6	7.8	7.7	Recent 3-year average. ODFW.
Willamette Spring	40.2	40.8	50.1	51.2	71.0	48.7	Age-specific linear regressions of cohort returns in previous run years. ODFW. Forecast includes adult fish only.
Upriver Spring ^{a/}	99.3	81.7	75.2	122.9	198.6	121.0	Columbia River Upriver Spring and Summer Chinook: RMSE-weighted
Upriver Summer ^{b/}	35.9	38.3	77.6	57.5	84.8	53.0	
LRW Fall	13.7	19.7	20.0	10.8	8.6	10.5	Columbia River Fall Chinook: Root Mean Squared Error (RMSE)-
LRH Fall	54.5	51.0	73.1	73.0	77.1	85.5	
SCH Fall	46.0	46.2	46.8	91.2	136.1	129.8	
MCB Fall	64.7	79.7	86.2	78.9	52.6	63.4	
URB Fall	158.4	233.4	354.2	230.4	272.4	258.3	

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Washington Coast								
Willapa Bay Fall	Natural	4.3	2.9	3.9	3.1	2.8	3.5	Total recruit/spawner predictor
	Hatchery	23.6	28.3	30.5	30.1	27.5	27.3	Total recruit/spawner predictor
Grays Harbor Fall	Natural	18.0	15.0	15.5	17.9	15.0	14.3	Combination of geometric mean of recent year returns and linear
	Hatchery	7.7	6.9	7.6	8.6	5.9	5.3	Combination of recent year smolt return rates and log linear
Quinault Spring/Summer	Natural	NA	NA	NA	NA	NA	NA	
	Hatchery	NA	NA	NA	NA	NA	NA	
Quinault Fall	Natural	5.3	4.2	6.0	3.2	4.0	4.3	Recent 5-year mean return rates, applied to brood year natural spawning escapements of age 3-6 returns.
	Hatchery	2.7	4.5	4.9	5.6	7.6	3.4	Recent 5-year mean terminal return rates (return/smolt release) for age 3-6 adult returns.
Queets Spring/Sum	Natural	0.6	0.6	0.6	0.6	0.4	0.4	Recent 5-year (2019-2023) mean terminal run size.
Queets Fall	Natural	3.4	4.1	4.3	5.3	4.3	2.6	Recent return/spawner rates; 10-yr mean for age 3, 5-yr mean for age
	Hatchery	0.8	0.7	0.6	0.5	0.8	0.4	Recent year return/smolt release adjusted by brood performance.
Hoh Spring/Summer	Natural	1.0	0.8	1.0	0.7	1.0	1.1	Spring/Summer: 5-year mean recruit/spawner adjusted by previous
Hoh Fall	Natural	2.5	2.6	2.6	3.4	2.6	3.5	Fall: Recent 3-year mean recruit/spawner adjusted by previous performance.
	Hatchery							Recent 2-year mean returns per smolt for age 3-4 and adjusted mean for age 5-6.
Quillayute Spring		2.1	2.4	2.6	3.0	2.8	2.5	
Quillayute Sum/Fall	Natural	7.9	9.8	9.6	8.8	11.3	10.1	Summer: Recent 5-year mean adjusted by previous brood
Hoko ^{cl}	Natural	2.8	2.6	1.3	0.9	2.8	3.9	Escapement without fishing, includes supplemental. Sibling regressions
<i>North Coast Totals</i>								
Spring/Summer	Natural	1.7	1.4	1.5	1.3	1.4	1.5	
Fall	Natural	19.2	20.6	22.5	20.7	22.1	20.5	
Spring/Summer	Hatchery	2.1	2.4	2.6	3.0	2.8	2.5	
Fall	Hatchery	3.5	5.2	5.5	6.1	8.4	3.8	

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Puget Sound summer/fall^{d/}								
Nooksack/Samish	Hatchery	21.3	18.2	18.9	28.1	41.2	40.9	Three year average return rate
East Sound Bay	Hatchery	0.3	0.3	0.6	0.4	0.2	0.2	Three year average return rate
Skagit	Natural	13.6	12.9	10.5	12.5	12.2	10.4	Natural: Hierarchical Bayesian model to estimate the spawner-recruit
	Hatchery	0.3	0.5	0.5	0.5	0.5	0.6	
Stillaguamish	Natural	0.9	0.9	0.9	0.9	1.2	0.9	Natural plus hatchery. Multiple regression environmental model
Snohomish ^{e/}	Natural	3.2	3.0	2.9	2.4	3.4	2.7	Natural fingerling and yearling age-specific return rates predicted with multiple regression environmental models (EMPAR).
	Hatchery	7.0	6.8	6.1	6.0	7.5	8.4	Average return rates by age and life history type of the three most
Tulalip ^{e/}	Hatchery	12.5	6.0	5.8	7.7	5.5	5.9	Age-specific return rates predicted with multiple regression environmental model (EMPAR).
South Puget Sound	Natural	8.4	5.8	7.0	6.9	7.0	7.3	Natural: Lake Washington; 4-yr avg recruit per spawner for age 3, 3-yr
	Hatchery	99.9	100.7	78.8	90.3	90.4	90.5	
Hood Canal	Natural	1.2	4.6	5.7	5.4	3.2	4.3	Includes hatchery strays to spawning grounds in Skokomish River.
	Hatchery	66.0	67.6	64.1	51.9	53.6	56.3	Brood 2019 fingerling lbs released from WDFW facilities in 2020,
Strait of Juan de Fuca Including Dungeness spring run	Natural	8.3	5.0	5.5	5.0	3.7	4.3	Natural and hatchery. Elwha estimated by all year average smolt to

spring Chinook run

summer Chinook run

c/ Expected spawning escapement without fishing.

d/ Unless otherwise noted, Puget Sounds forecasts are in units of terminal run size.

e/ Includes a mixture of

