



**2017 JOINT STAFF REPORT:
STOCK STATUS AND FISHERIES FOR
FALL CHINOOK SALMON, COHO SALMON, CHUM
SALMON, SUMMER STEELHEAD,
AND WHITE STURGEON**

Joint Columbia River Management Staff

Washington Department of Fish and Wildlife

Oregon Department of Fish and Wildlife

September 7, 2017

TABLE OF CONTENTS

INTRODUCTION	5
THE COMPACT	5
SEASONS CONSIDERED	5
STOCK STATUS	5
<i>Fall Chinook</i>	5
2016 Returns	7
2017 Forecast	8
<i>Summer Steelhead</i>	9
2016 Returns	10
2017 Forecast	11
<i>Coho</i>	11
2016 Returns	12
2017 Forecast	13
<i>Chum</i>	13
MANAGEMENT GUIDELINES	15
<i>Endangered Species Act</i>	15
<i>Columbia River Salmon Management Guidelines</i>	15
<i>Upriver Summer Steelhead</i>	16
<i>Lower Columbia River wild/natural Coho (LCN Coho)</i>	16
<i>Lower Columbia River wild/natural tule Chinook (LCR tule)</i>	17
<i>Upriver Fall Chinook</i>	17
<i>Annual Non-Treaty Impact Allocation of Upriver Fall Chinook</i>	18
REVIEW OF MAINSTEM AND SELECT AREA FISHERIES	18
<i>Non-Treaty Commercial Fisheries</i>	18
2016 Early Fall Commercial Mainstem Fisheries	19
2016 Late Fall Commercial Mainstem Fisheries	19
2016 Fall Seine Fisheries	19
<i>Non-Treaty Recreational Fisheries</i>	20
2016 Buoy 10 Recreational Fishery	21
2016 Lower Columbia Mainstem Recreational Fishery	22
2016 Columbia Mainstem Recreational Fisheries above Bonneville Dam	23
<i>Select Area Fisheries</i>	25
2016 Select Area Fisheries	25
<i>Treaty Indian Mainstem Fisheries</i>	27
2016 Treaty Indian Commercial Fisheries	27
2016 Fishery Impacts	28
2017 FALL SEASON FISHERY EXPECTATIONS	29
<i>Non-Treaty Fisheries</i>	29
2017 Non-Treaty Columbia River Fall Fishery Chinook Allocation Agreement	30
<i>Select Area Fisheries</i>	32
<i>Treaty Indian Fisheries</i>	32
2017 Columbia River Fall Fishery Model Summary	33

LIST OF TABLES

Table 1.	Federally-listed species found in Columbia River fishery management areas.	35
Table 2.	Columbia River fall salmonid returns, forecasts and actual, 2016-2017.	36
Table 3.	Stock accountability of adult fall Chinook returning to the Columbia River, 1980-2016.	37
Table 4.	Predicted and actual returns to the Columbia River of adult fall Chinook, 2011-2016.	38
Table 5.	Estimated Columbia River return of Snake River wild fall Chinook adults, 1986-2016.	39
Table 6.	Returns of upriver summer steelhead to Bonneville Dam (April- October), 1984-2016.	40
Table 7.	Returns of upriver summer steelhead to Lower Granite Dam, 1991-2016.	41
Table 8.	Adult Coho returns to the Columbia River, 1980-2016.	42
Table 9.	Early stock adult Coho returns to the Columbia River, 1980-2016.	43
Table 10.	Late stock adult Coho returns to the Columbia River, 1980-2016.	44
Table 11.	Lower Columbia River Coho natural spawner estimates in Oregon and Washington tributaries, 2010-2015.	45
Table 12.	Columbia River Chum abundance in select Washington tributaries, 2005-2016.	46
Table 13.	Treaty fall Zone 6 mainstem commercial gillnet seasons, 2016.	47
Table 14.	Non-treaty fall commercial fishing seasons, 2016.	48
Table 15.	2016 fall season mainstem fisheries catch (includes adults and jacks).	54
Table 16.	Fishing periods, gear, and landings from mainstem Columbia River non-treaty commercial seasons, 2016.	55
Table 17.	Lower Columbia River winter/spring/summer/fall commercial landings, 2016.	56
Table 18.	Stock composition of adult fall Chinook catch in mainstem Columbia River fisheries, 2016.	57
Table 19.	Fall season summer steelhead harvest and incidental release mortalities in mainstem Columbia River non-treaty fisheries, 1999-2016.	58
Table 20.	Time, area, and gear restrictions for early fall non-treaty commercial mainstem fisheries, 2009-2016.	59
Table 21.	Landed catch from early fall non-treaty commercial mainstem fisheries, 1970-2016.	60
Table 22.	Closed fishing areas during late fall mainstem non-treaty fishing seasons, 2007-2016.	61
Table 23.	Landed catch from late fall mainstem and Select Area non-treaty commercial fishing seasons, 1980-2016.	62
Table 24.	Estimated landed catch from Columbia River non-treaty commercial seine fisheries, 2014-2016.	63
Table 25.	Select Area fall commercial fisheries landings, 2009-2016.	64
Table 26.	Angler trips and catch in the Buoy 10 recreational fishery, 1982-2016.	65
Table 27.	Fall salmon angler trips and catch on the lower Columbia River, August-October, 1980-2016.	66
Table 28.	Mainstem fall Chinook recreational fisheries upstream of Bonneville Dam, 2002-2016.	67
Table 29.	Treaty fishery open area and Spring Creek Sanctuary restrictions during fall season commercial set gillnet seasons, 1995-2016.	68

Table 30.	Fall treaty fishery mainstem Columbia River landings, 1980-2016.	69
Table 31.	Fall treaty fisheries catch composition, 2016.	71
Table 32.	Aerial set net counts for Zone 6 treaty Indian fall gillnet salmon fisheries during statistical weeks, 35-40, 1999-2016.	72
Table 33.	Fall season treaty impact rates on wild and total B-Index (since 2008) upriver summer steelhead, 1999-2016.	73
Table 34.	Fall season non-treaty harvest and impact rates on wild upriver summer steelhead, 1999-2016.	74
Table 35.	Lower Columbia Natural (LCN) Coho ocean and in-river exploitation rates, 2005-2016.....	74
Table 36.	Lower Columbia River tule fall Chinook exploitation rates, 2002-2016.	75
Table 37.	ESA impact summary for fall season fisheries, 2016.	75

LIST OF FIGURES

Figure 1.	Major Columbia River fall Chinook stock components and general destinations.....	6
Figure 2.	Average run timing of fall Chinook over Bonneville Dam.	9
Figure 3.	Average run timing of summer steelhead over Bonneville Dam.	11
Figure 4.	Ten-year average (2006-2015) of daily fish counts at Bonneville Dam.	15
Figure 5.	Columbia River commercial fishing zones.	29

INTRODUCTION

This report describes fall fisheries in the mainstem Columbia River, and includes a summary of 2016 management guidelines and fisheries, and expectations for 2017 fall fish runs and fisheries. This report is part of an annual series produced by the Joint Columbia River Management Staff of the Washington Department of Fish and Wildlife (WDFW) and Oregon Department of Fish and Wildlife (ODFW) prior to each major Columbia River Compact hearing. The first Columbia River Compact hearing of the 2017 fall management period occurred on Thursday July 27, 2017 at the WDFW Region 5 office (5525 S. 11th St., Ridgefield, Washington). A second hearing occurred Wednesday August 16, 2017 at the Cowlitz County Historical Museum, 405 Allen St., Kelso, Washington. Members of the *U.S. v Oregon* Technical Advisory Committee (TAC) have reviewed this report.

THE COMPACT

The Columbia River Compact is charged by congressional and statutory authority to adopt seasons and rules for Columbia River commercial fisheries. In recent years, the Compact has consisted of delegates for the Oregon and Washington agency directors, acting on behalf of the Oregon Fish and Wildlife Commission (OFWC) and the Washington Fish and Wildlife Commission (WFWC). The Columbia River treaty tribes have authority to regulate treaty Indian fisheries.

When addressing commercial seasons for Columbia River fisheries, the Compact must consider the effect of the fishery on escapement, treaty rights, and the impact on species listed under the Endangered Species Act (ESA; Table 1). Working together under the Compact, the states have the responsibility to address the allocation of limited resources between recreational, commercial, and treaty Indian fishers. This responsibility has become increasingly demanding in recent years. The states maintain a conservative management approach when considering Columbia River fisheries that will affect species listed under the ESA.

SEASONS CONSIDERED

At the July 27 hearing, the Compact set non-treaty fall Select Area fisheries and fall treaty Indian platform/hook-and-line and setline fisheries. Treaty Indian and non-treaty mainstem commercial gillnet fisheries were adopted at the August 16 hearing. Future hearings will be scheduled throughout the fall management period as additional information on fish runs and ongoing fisheries become available.

STOCK STATUS

Fall Chinook

Fall Chinook generally enter the Columbia River from late July through October with abundance peaking in the lower river from mid-August to mid-September, and passage at Bonneville Dam peaking in early to mid-September. Columbia River fall Chinook are comprised of eight

management components: Lower River Hatchery (LRH), Lower River Wild (LRW), Select Area Bright (SAB), Bonneville Pool Hatchery (BPH), Upriver Bright (URB), Pool Upriver Brights (PUB), Bonneville Upriver Brights (BUB), and Lower River Brights (LRB). The aggregate PUB, BUB, and LRB returns comprise the mid-Columbia Bright (MCB) stock category. The LRH and BPH components are considered tule stock, and the LRW, SAB, URB, and MCB components are considered bright stock. General destinations of these various stock components are illustrated in Figure 1.

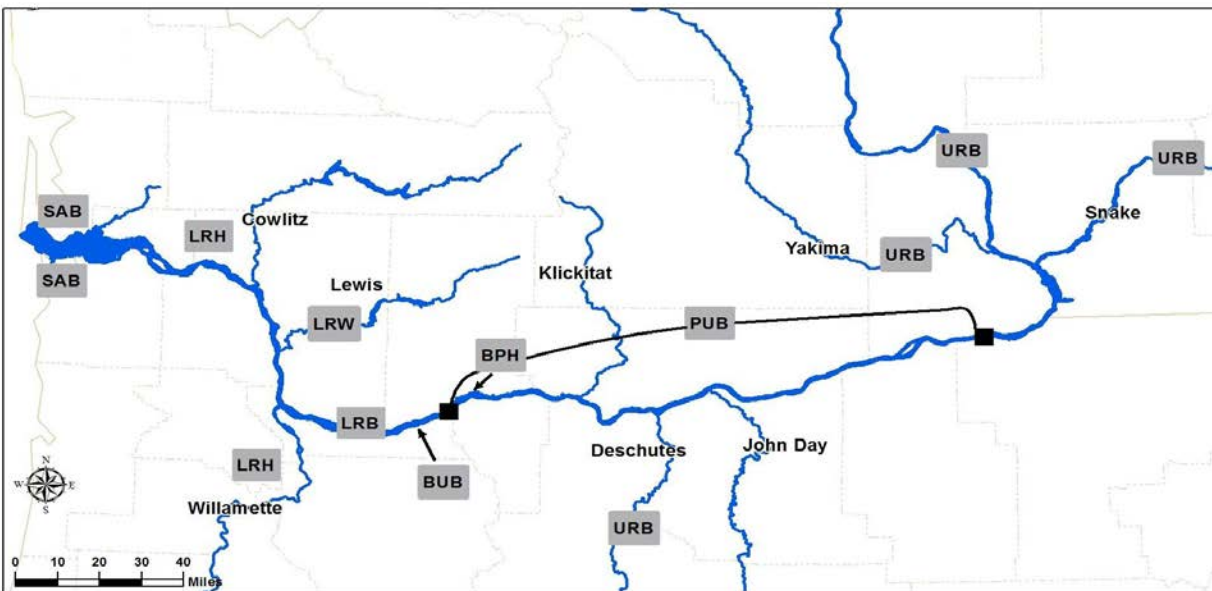


Figure 1. Major Columbia River fall Chinook stock components and general destinations.

The upriver run is comprised of stocks produced upstream of Bonneville Dam, and includes URB, PUB, and BPH. Most of the URB Chinook are destined for the Hanford Reach area of the Columbia River, Priest Rapids Hatchery, areas upstream of Priest Rapids Dam, and the Snake River. Smaller URB components are destined for the Deschutes and Yakima rivers. Snake River wild (SRW) fall Chinook are a sub-component of the URB stock. PUBs are a bright stock reared at Little White Salmon, Umatilla, and Klickitat hatcheries, and released in areas between Bonneville and McNary dams. Natural production of fish derived from PUB stock is believed to also occur in the mainstem Columbia River below John Day Dam, and in the Wind, White Salmon, Klickitat, and Umatilla rivers. The BPH stock is produced primarily at the Spring Creek Hatchery in Bonneville Pool, although natural production of tules also occurs in the Wind, White Salmon, Hood, and Klickitat rivers. Hatchery production of BPH Chinook has been reduced in recent years, and offset by increased tule releases in Oregon facilities downstream of Bonneville Dam. Tule (BPH) passage at Bonneville Dam occurs over a shorter timeframe than for bright (URB and PUB) Chinook (Figure 2).

The lower river run is comprised of stocks produced downstream of Bonneville Dam, and includes LRH, LRW, BUB, LRB, and SAB stocks. Of the five lower river stocks, LRH are the only tule strain, the remainder being bright stocks. The LRH stock is currently produced from hatchery facilities (four in Washington and three in Oregon), and includes lower Columbia River (LCR) natural production (LCR natural tules) from most tributaries downstream of Bonneville

Dam. Being a tule stock, the LRH fish are generally more mature (darker in color and well-developed gonads) when entering the mainstem, and are quick to reach the tributaries to spawn. The LRW stock is naturally-produced primarily in the Lewis River system, with smaller components also present in the Cowlitz and Sandy rivers. BUBs are hatchery fish that were reared and released from Bonneville Hatchery, located on the Oregon shore just downstream of Bonneville Dam. Although currently considered a lower river stock, the original broodstock used to develop this stock were of upriver origin and a portion of the BUBs stray upstream of Bonneville Dam. Due to the source stock used to develop the BUB run, they are considered an upriver stock when calculating harvestable surplus. The BUB program has been discontinued starting with the 2013 brood year (BY); this production has been transferred to the Little White Salmon National Fish Hatchery (LWSNFH) upstream of Bonneville Dam. The production at LWSNFH is considered a PUB stock since it occurs upstream of Bonneville Dam; this means the BUB stock will no longer exist once the 2012 BY is complete. The LRBs are a natural stock that spawn in the mainstem Columbia approximately three miles downstream from Bonneville Dam. The LRB stock is closely related to URBs, and is thought to have originated from MCB or URB stock. LRBs were originally classified as BUBs, and therefore considered a component of the MCB stocks. Beginning in 1998, this stock was reclassified as a unique subcomponent of the MCB stock. SABs are a hatchery stock that originated from Rogue River fall Chinook stock egg transfers during 1982-1986. Production of this stock is confined to Youngs Bay, with past releases occurring from ODFW's Klaskanine Hatchery, the Clatsop County Fisheries (CCF) net pens, and South Fork Klaskanine Hatchery facilities. Beginning with the 2015 brood, SAB production from the South Fork Klaskanine facility will be discontinued.

2016 Returns

The total Columbia River fall Chinook adult return during 2016 was 642,400. The return was slightly less than the recent 10-year average (2006-2015) return of 705,590 adults, and substantially less than the preseason forecast of 960,200 fish. All individual stock components were less than their forecasts. The 2016 fall Chinook return diverged from the trend observed over the prior three years of very high returns. Passage at Bonneville Dam totaled nearly 441,200 adults, with a peak daily count of 32,400 adult fish. Forecasted and actual returns for 2016 are presented in Table 2. Historical returns by stock are presented in Tables 3 and 5. Forecast accuracy is presented in Table 4. Chinook passage at Bonneville Dam is illustrated in Figures 2 and 4.

The 2016 LRH return was 81,500 adults, 57% of forecast and 95% of the 2006-2015 average of 86,160 fish. Nearly 37,200 adult fish returned to Oregon and Washington hatcheries below Bonneville Dam, which greatly surpassed the overall escapement goal of 14,800ish. LRH hatchery escapement included 32,400 adult fish to Washington hatcheries (9,800 goal) and 4,700 adult fish to Oregon hatcheries (5,000 goal). A tule production program was initiated in 2008 at Bonneville Hatchery. Eggs were initially transferred from Spring Creek Hatchery, and sub-yearling smolts were released beginning in 2009 (2008 BY). This program is now maintained with broodstock collected at Bonneville Hatchery. Currently these fish are grouped with the LRH stock, but because of their origin, these fish could be grouped with the BPH stock, or considered a separate stock. In addition to the established hatchery programs, releases of LRH Chinook have also occurred recently from the Deep River net pens and Klaskanine Hatchery.

Naturally-spawning LRH fall Chinook accounted for an estimated 19,700 adults in Washington tributaries and 2,100 adult fish in Oregon tributaries.

The 2016 LRW return totaled 12,300 adults. The return was 55% of forecast and 77% of the 2006-2015 average return of 15,670 fish. The 2016 return ranked tied for the 9th lowest in the 53-year history since 1964. The natural spawning escapement to the North Fork Lewis River of 9,000 adults exceeded the escapement goal of 5,700 LRW adults.

The 2016 BPH return of 41,400 adults ranked as the 18th lowest since 1964. The return was 41% of forecast and 50% of the 2006-2015 average return of 82,140 fish. Adult returns of BPH included 8,700 fish to Spring Creek Hatchery, which exceeded the escapement goal of 7,000 adults. An additional 2,300 adult BPH strayed into Bonneville Hatchery. Naturally-spawning BPH fall Chinook accounted for an estimated 2,800 adult fish in Washington tributaries. Natural spawners may include a mix of hatchery and natural origin fish.

The 2016 URB return of 412,900 adults was the fifth highest return since at least 1964. The return was 71% of the forecast and 104% of the recent 10-year (2006-2015) average return of 395,680. The URB return constituted 64% of the Columbia River fall Chinook return. The McNary Dam count of 239,791 adult Chinook well exceeded the management goal of 60,000 fish. The Hanford Reach fall Chinook spawning escapement in 2016 was 109,700 adult fish. The Deschutes River return of 11,600 adults was 90% of the recent 10-year average of 12,900 adults. The SRW fall Chinook return of 14,500 fish was 74% of forecast and 83% of the 2006-2015 average (Table 5). The SRW escapement to Lower Granite Dam totaled 9,772 adult fish, and ranked fifth highest on record since construction of the lower Snake River dams.

The 2016 MCB return included 9,600 BUB stock, 11,000 LRB stock, and 67,200 PUB stock. The BUB return was 45% of forecast and 31% of the 10-year average return of 31,230 fish. Hatchery escapement totaled 5,200 adult BUBs to Bonneville Hatchery. The LRB return of 11,000 adults was 846% of forecast and 608% of the 10-year average return of 1,810 fish. The 2016 PUB return was 85% of the 10-year average of 79,860 fish. PUB hatchery escapement included 10,700 fish to LWSNFH. PUB natural escapement totaled 24,200 fish in Washington tributaries upstream of Bonneville Dam.

The 2016 SAB return of 6,700 adults was 42% of forecast and 53% of the 2006-2015 average of 12,540 fish. Ninety-five percent of SABs returning in 2016 were harvested in Columbia River fisheries or returned to hatcheries.

2017 Forecast

The forecast for the 2017 fall Chinook adult return to the Columbia River totals 613,800 fish (Table 2). The forecast is 96% of the 2016 actual return (642,400) and 84% of the 2007-2016 average return (727,600). Bright stocks represent 57% of the total forecast. The LRH forecast of 98,800 is greater than the 2016 actual return (81,500) and the 2007-2016 average (88,480). The LRW forecast of 13,600 adults is 89% of the 2007-2016 average of 15,340 fish. The BPH forecast of 164,400 adults is 196% of the 2007-2016 average of 83,720 fish. The forecasted return of 275,200 URB adults represents 45% of the projected total return and is 66% of the 2007-2016 average. Included in the URB forecast is the SRW forecast of 12,400 fish, which is

72% of the 2007-2016 average and 86% of last year's return. The BUB forecast of 3,500 fish is notably less than the recent 10-year average (28,030 fish). The LRB forecast of 200 fish is 8% of the recent 10-year average, and the PUB forecast of 44,500 fish is approximately one-half of the recent 10-year average (82,580 fish). The SAB forecast of 13,700 fish is 110% of the 2007-2016 average return.

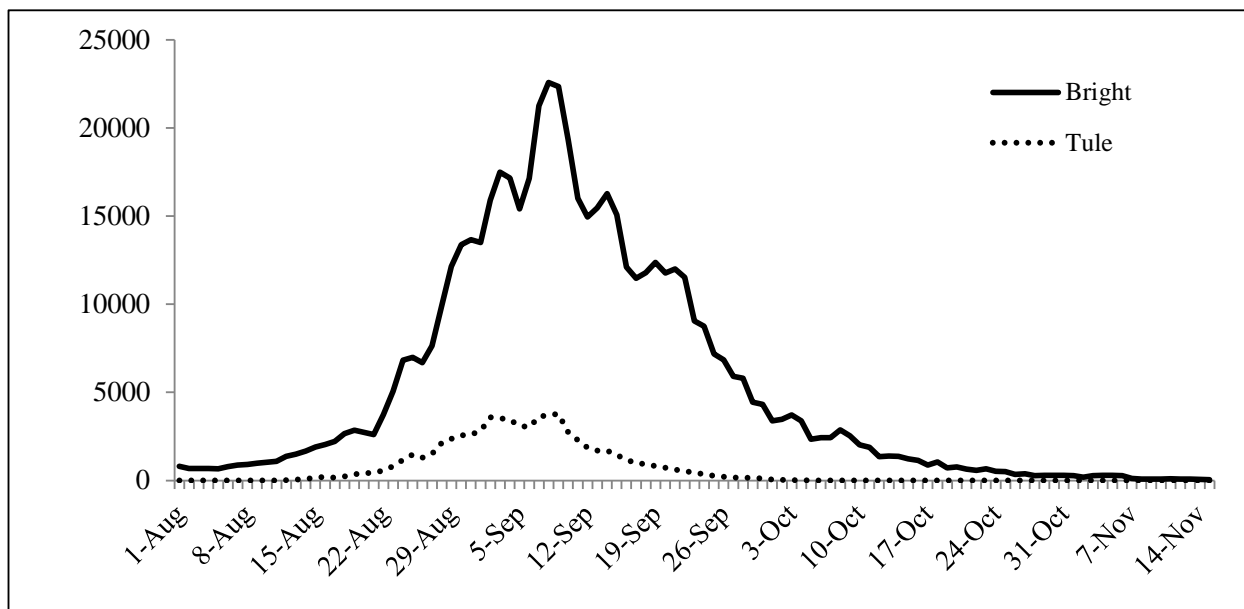


Figure 2. Average run timing of fall Chinook over Bonneville Dam.

Summer Steelhead

The Columbia River summer steelhead run is made up of populations originating from both lower river and upper river tributaries. Summer steelhead enter the Columbia River primarily from April through October each year, with most of the run entering from late June to mid-September. The LCR component is primarily hatchery produced and derived from Skamania stock, and tends to be earlier timed than the upriver stocks. The Skamania stock was successfully introduced into numerous streams below Bonneville Dam, and a few streams above, including the Klickitat and Hood rivers. Peak return timing of the lower river component is in May and June. Summer steelhead caught in mainstem Columbia River fisheries during May and June of each year are categorized as lower river stock (destined for areas downstream of Bonneville Dam).

Upriver summer steelhead include hatchery and wild fish that pass Bonneville Dam during April through October of each year. Fish passing from April through June are categorized as Skamania stock steelhead, destined mainly for tributaries within Bonneville Pool. Production programs for Skamania stock fish in hatcheries upstream of Bonneville Dam have decreased from historical levels.

Steelhead that pass Bonneville Dam during July through October are categorized as A-Index or B-Index fish, based on fork length (A-Index < 78 cm, B-Index ≥ 78 cm). B-Index steelhead primarily return to tributaries in the Salmon and Clearwater rivers in Idaho and usually spend

two years in the ocean, while A-Index steelhead return to tributaries throughout the Columbia and Snake basins (including the Salmon and Clearwater rivers), and usually spend only one year in the ocean. The run-timing distributions at Bonneville Dam of A-Index and B-Index summer steelhead are shown in Figure 3.

Summer steelhead passage at Bonneville Dam is illustrated in Figure 4. Summer steelhead passage (returns) over Bonneville Dam is shown in Table 6, and passage over Lower Granite Dam is shown in Table 7. Stock distribution and hatchery/wild determination are based on (and dependent on) biological sampling at each of the hydro-electric facilities mentioned. See Table 2 for details on steelhead forecasts.

Steelhead harvest from non-treaty recreational fisheries occurs throughout the Columbia River basin and in Zone 6 from treaty Indian fisheries. Recreational steelhead fisheries are mark-selective, allowing retention of fin-clipped fish only. Treaty Indian steelhead harvest is not mark-selective. The majority of the treaty Indian catch occurs during the fall gillnet fishery; catch also occurs in treaty platform and hook-and-line fisheries. Since the 1990s, the tribes have reduced catch of wild steelhead during fall treaty Indian gillnet seasons. Commercial retention of steelhead in non-treaty fisheries has been prohibited since 1975. Time, area, and gear restrictions are implemented to minimize encounters of steelhead in non-treaty commercial fisheries, although some release mortality does occur.

2016 Returns

The total return to Bonneville Dam (April-October passage) of upriver summer steelhead was approximately 184,000 fish, and included approximately 12,200 Skamania stock, 128,900 A-Index stock, and 42,900 B-Index stock. The 2016 return was 69% of the forecast of 265,400 upriver steelhead. Upriver steelhead passage at Bonneville Dam in 2016 was 54% the recent (2006-2015) 10-year average return of 342,500 fish. Wild fish passage totaled 37,100 fish, which represented 20% of the return, compared to the recent 10-year average of 32% (108,600 fish). Run size data in this report are adjusted for unclipped hatchery fish based on sampling data collected at the Bonneville Dam adult fish trapping facility (AFF). In 2016, between July and October, 1,470 steelhead were biologically sampled at the AFF. Sampling at the AFF was halted periodically in the summer months due to increased water temperature; this resulted in a lower than desired sample size.

The majority of summer steelhead passage at Bonneville Dam occurs during July through October. During these months in 2016, a total of 171,806 steelhead passed Bonneville Dam, compared to the recent 10-year average of 329,800 fish. Passage during 2016 was 50% complete on August 19, compared to the 10-year average 50% passage date of August 12.

The upriver Skamania return to Bonneville Dam totaled 12,238 fish, including approximately 4,400 (36%) wild fish. The Skamania return was 97% of the 2006-2015 average of 12,645 fish. The A-Index return of 128,890 was 46% of the 2006-2015 average of 281,600 fish. Wild fish represented 23% of the A-Index return, less than the recent 10-year average of 34% wild. The B-Index return totaled 42,916 fish, which was 89% of the 2006-2015 average of 48,200 fish.

The steelhead run year at Lower Granite Dam is comprised of all fish passing from July 1 through June 30 of the following year. The 2016-2017 steelhead passage at Lower Granite Dam totaled 101,848 fish. Based on passage and visual sampling data, stock composition included approximately 33,100 B-Index fish (17% wild) and 68,700 A-Index fish (20% wild). Sampling data from Lower Granite Dam suggests that 20% of the unclipped B-Index fish were unclipped hatchery fish and 11% of the unclipped A-Index fish sampled were unclipped hatchery fish.

2017 Forecast

The 2017 forecast for the summer steelhead return to Bonneville Dam is 130,700 upriver fish, including 11,300 Skamania stock (4,100 wild), 112,100 A-Index stock (33,000 wild), and 7,300 B-Index stock (1,100 wild). Overall, the forecast is 40% of the 2007-2016 average of 328,000 fish. The Skamania and A-Index forecasts are 88% and 42%, respectively, of the 2007-2016 average returns. The B-Index forecast is 16% the 2007-2016 average return (Tables 2 and 6).

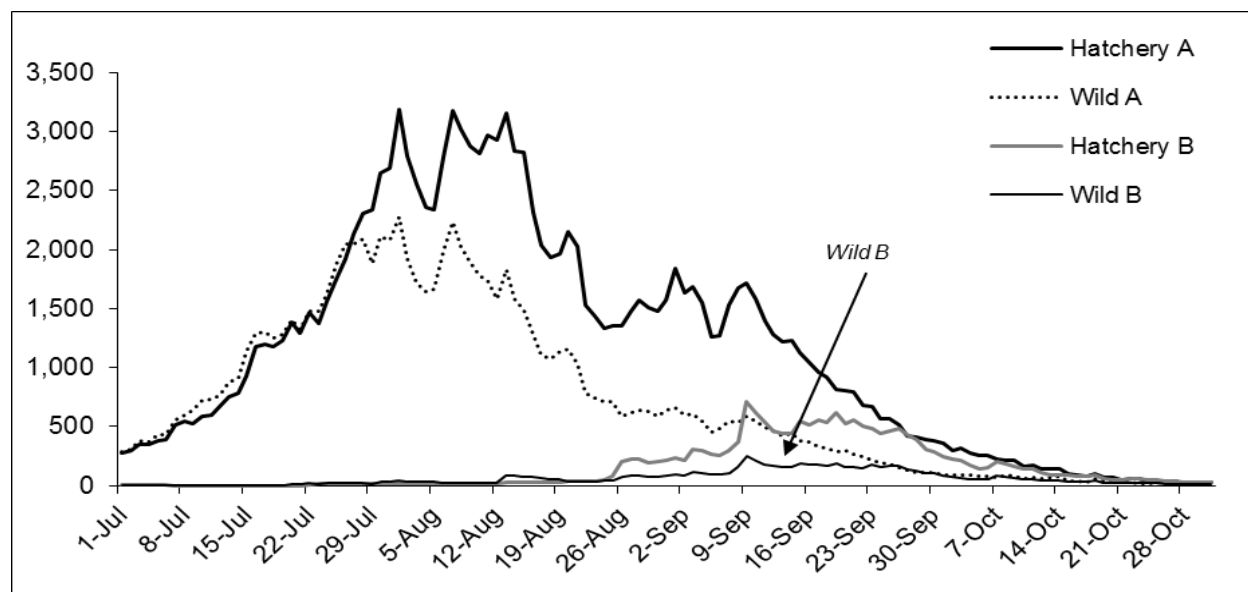


Figure 3. Average run timing of summer steelhead over Bonneville Dam.

Coho

The Columbia River hatchery Coho return includes both early and late returning stocks. Coho adults are typically age-3 fish, returning to freshwater after only one year in the ocean. Early stock Coho enter the Columbia River from mid-August to early October, with peak entry occurring in early September. In the ocean, early stock Coho tend to remain near the Oregon and southern Washington coasts, and primarily migrate southward from the Columbia River, and are therefore referred to as Type S. Late stock Coho enter the Columbia River from mid-September through December, with peak entry occurring in mid-October. In the ocean, late stock Coho tend to migrate northward from the Columbia River along the Washington coast and Vancouver Island, and are therefore referred to as Type N. Columbia River Coho return primarily to Oregon and Washington hatcheries downstream from Bonneville Dam, although substantial hatchery,

and some natural, production now occurs in areas upstream of Bonneville Dam (Tables 8, 9, and 10).

In Oregon, Columbia River tributaries with historical natural Coho production included the Lewis and Clark, Youngs, Klaskanine, Clatskanie, Clackamas, and Sandy rivers, plus Big, Gnat, Beaver, Milton, and Scappoose creeks. Annual spawning fish survey counts conducted in Oregon lower Columbia River tributaries from December through February, beginning as early as 1949, indicated that wild Coho might have been extirpated from Oregon's lower Columbia tributaries, excluding the Clackamas and Sandy rivers. Intensive surveys conducted during 1990-1999, resulting in counts of 0.0-0.4 fish per mile, supported this conclusion. Increased numbers of unmarked Coho have been observed in lower Columbia River tributaries since 2000, indicating that some remnant Oregon populations may persist in the lower Columbia River Basin, but the origin of these fish is unknown. Population-specific estimates of naturally spawning Coho, and the proportion estimated to be of natural origin, are shown in Table 11.

Historical natural Coho production areas in Washington included the Grays, Elochoman, Cowlitz, Toutle, Kalama, Lewis, and Washougal watersheds. Stream surveys conducted in Washington from 1945-1979 in the Toutle and lower Cowlitz River tributaries showed a steady decline of naturally-spawning Coho. Smolt traps are currently being used in several Washington tributaries to estimate natural production. Recent-year natural spawn estimates from Washington's lower Columbia River tributaries are provided in Table 11.

Historical natural Coho production areas above Bonneville Dam included the Spokane, Yakima, Wenatchee, Entiat, Methow, and Snake rivers. The majority of Coho presently passing Bonneville Dam are from the *U.S. v. Oregon* Management Plan mandated hatchery releases of lower river Coho stocks in the Yakima, Umatilla, Klickitat, Wenatchee, Methow, and Clearwater rivers. The releases outside the Klickitat are primarily intended to restore natural Coho to appropriate habitats above Bonneville Dam, most recently in the Snake, Yakima, Methow, and Entiat rivers. Coho destined for areas upstream of Bonneville Dam have represented an increasing percentage of the total return in response to increased releases above Bonneville Dam. Coho passage at Bonneville Dam is illustrated in Figure 4. The tribes are engaged in increased monitoring and evaluation activities to determine the extent of natural production in areas where Coho have been re-introduced. See Tables 2, 8, 9, and 10 for details on harvest, escapement, passage, and abundance.

2016 Returns

The 2016 Columbia River Coho return of 196,300 adult fish was comprised of 116,800 early stock fish and 79,500 late stock fish. The return was 61% of the forecasted return of 322,600 fish. The early stock Coho return was 88% of forecast, and the late stock return was 42% of forecast. The Bonneville Dam count of 42,020 adult Coho was comparable to 2015, which was the lowest since 1997. Passage represented 82% of the estimated total ocean abundance of Columbia River Coho destined for areas above Bonneville Dam. Hatchery escapement below Bonneville Dam (84,100 fish) to Washington and Oregon facilities was 52% of the 2006-2015 average. Escapement and facility-specific broodstock goals were reached for most lower river programs despite the low returns. Upper Columbia, Snake, and Eagle Creek (Clackamas) programs did not meet broodstock goals. The Umatilla program did meet its broodstock goal.

The preliminary natural escapement of Lower Columbia River Coho is 17,000 adults, compared to the 2006-2015 average of 20,800 fish.

2017 Forecast

The 2017 forecast for the Columbia River Coho return is 319,300 adults, which includes 196,800 early stock and 122,500 late stock. The forecast is 76% of the 2007-2016 average of 420,000 fish. The individual forecasts for early and late stock Coho are 75% and 77% of the 2007-2016 averages, respectively. Bonneville Dam passage is expected to be 97,500 adult Coho, which represents 79% of the forecasted total ocean abundance of Columbia River Coho destined for areas upstream of Bonneville Dam. Escapement goals of 13,300 early stock and 13,400 late stock adults to hatcheries downstream of Bonneville Dam are expected to be achieved.

A total of 464,000 natural origin Coho smolts are estimated to have emigrated from Washington tributaries of the lower Columbia in 2016. Marine survival of these smolts is estimated at 4.5%, which corresponds to a 2017 forecast of 20,880 adult wild Coho to Washington tributaries within the lower Columbia Evolutionary Significant Unit (ESU).

Chum

Chum salmon return to the LCR from early October through mid-December, with spawning occurring from late October through early January. Chum returns are primarily from natural production. Primary production areas include the Grays River in Washington, smaller tributaries just downstream from Bonneville Dam, and the mainstem Columbia River in specific locations from the I-205 Bridge upstream to Bonneville Dam. A small number of Chum also pass Bonneville Dam each year.

Four small hatchery enhancement programs (three in WA and one in OR) release fed-fry that contribute to the lower Columbia population. The Washougal Hatchery enhancement program provides fed-fry for release into Duncan Creek (BY 2001 to present) and the East Fork Lewis River (BY 2011 to present). The Grays River Hatchery enhancement program has been producing fed-fry for in-basin releases since 1999 (BY 1998). Beginning in 2011 (BY 2010), eyed-egg transfers of Grays River origin Chum to ODFW's Big Creek Hatchery (BCH) have provided fed-fry for release in Oregon waters. In fall 2014, Chum salmon from the 2010 (age-4) and 2011 (age-3) brood years returned to BCH. These adult returns were the first to be incorporated into the BCH broodstock, and egg transfers from Grays River Hatchery were discontinued after 2014. Some of the eggs collected from BCH returns were reared to the eyed stage and outplanted in Perkins Creek (Clatskanie River Basin). In addition, surplus adults returning to BCH were outplanted in another Clatskanie River tributary, Stewart Creek.

In fall 2015, hatchery and unmarked adult returns to BCH were collected for broodstock, and eyed-eggs were once again outplanted in Perkins Creek. Remaining hatchery and unmarked adults were outplanted in Stewart Creek above the adult trap. Previously, unmarked (putative wild) adults had been transported above BCH to spawn naturally. However, after two seasons of operating fry traps below the spawning grounds, it was determined that little to no fry production was occurring in that system, likely due to pronounced habitat degradation.

In fall 2016, overall returns of Chum salmon to the Columbia Basin were excellent; however, relatively few Chum salmon returned to BCH (9 marked and 42 unmarked adults). A high level of straying likely contributed to the low BCH return as five adult Chum were detected on the spawning grounds downstream of BCH, and another 154 BCH origin Chum were found in Washington tributaries, based on coded wire tag (CWT) and otolith recovery data (expanded by survey effort). The absolute number of strays was the highest seen to date (27 in 2013; 140 in 2014; 50 in 2015), and resulted in a stray rate of 94.6%. Predation and poaching in Big Creek may also have contributed to the low BCH return in 2016. Because of the low hatchery return, only 32,725 fry were released for the 2016 brood year (300,000 goal), no outplanting occurred in Perkins or Stewart creeks.

Adult returns of age-3 Chum were expected in 2016 at two outplanting sites, Graham Creek and Stewart Creek, but none were observed, as determined from eDNA sampling (Graham Creek) and adult trapping (Stewart Creek). However, adult Chum were observed in Westport Slough, Big Creek, Little Creek, Bear Creek, Little Bear Creek, the Lewis and Clark River, and the ODFW tangle net test fishery near Tongue Point. Furthermore, juvenile trapping in the Clatskanie River in the winter/spring of 2017 found Chum fry emigrating from that system.

Washington index areas have been surveyed annually since 1950, and specific areas of the mainstem Columbia River have been surveyed annually since 1998. During 2000-2003, survey areas were expanded to include non-index LCR tributaries (Washington and Oregon) downstream of Bonneville Dam. These non-index stream surveys have continued sporadically since. In some years, significant numbers of Chum have been observed in non-index areas, primarily at the mainstem Columbia River spawning areas between Bonneville Dam and the I-205 Bridge. Few Chum have been observed in Oregon tributaries; however, survey effort has not been as intensive as in Washington tributaries. Beginning with 2013, the reporting metric for the LCR Chum abundance index changed from fish/mile to estimates of escapement. Table 12 has been updated to report escapement estimates for the major populations of LCR Chum. While variable, reported returns to spawning areas outside of the major populations of LCR Chum generally number less than 200 fish annually.

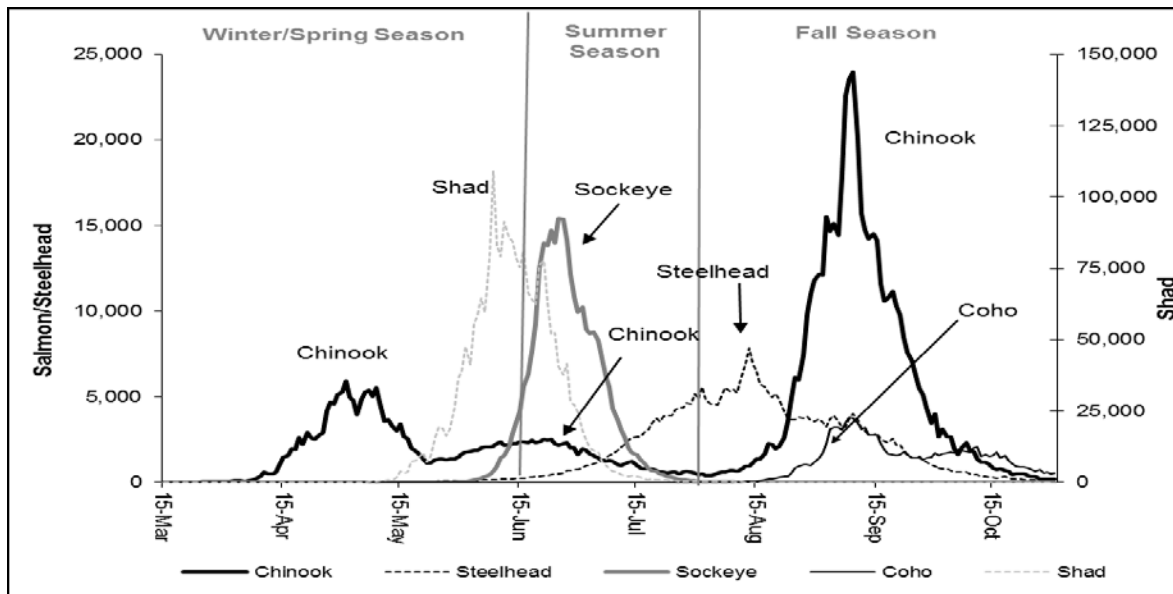


Figure 4. Ten-year average (2006-2015) of daily fish counts at Bonneville Dam.

MANAGEMENT GUIDELINES

Endangered Species Act

Status reviews occurring since 1991 have resulted in the majority of Columbia Basin salmon and steelhead stocks being listed under the ESA (Table 1). The *U.S. v Oregon* TAC has prepared Biological Assessments (BAs) for combined fisheries based on relevant *U.S. v Oregon* management plans and agreements. The TAC has completed BAs for ESA-listed stocks for all mainstem Columbia River fisheries since January 1992. In addition, ODFW has a state management plan in place for naturally-produced Coho from Oregon tributaries that were listed by the State of Oregon in 1999.

The current BA addresses Columbia River treaty Indian and non-treaty fisheries for upriver Chinook, upriver Coho, Sockeye, steelhead, and White Sturgeon, as described in the 2008-2017 *U.S. v Oregon Management Agreement* (2008-2017 MA). The BA was submitted during the spring of 2008, and a Biological Opinion (BO) was subsequently issued by the National Marine Fisheries Service (NMFS) later that year. The current BO expires December 31, 2017, concurrent with the 2008-2017 MA. A new BA for 2018-2027 fisheries was recently completed and submitted to NMFS with a corresponding BO expected in early 2018.

Columbia River Salmon Management Guidelines

The parties to *U.S. v Oregon* are currently operating under the 2008-2017 MA. This agreement provides specific fishery management constraints for upriver spring, summer, and fall Chinook, upriver Coho, Sockeye, and steelhead. Excerpts from the 2008-2017 MA and other agreements applicable to fisheries considered in this report are included in this section.

Upriver Summer Steelhead

During the fall season, treaty Indian and non-treaty fisheries encountering upriver summer steelhead will be managed according to the harvest rate schedule shown in Table A4 of the 2008-2017 MA. Table A4 only addresses impacts to B-Index steelhead; however, the BO does address ESA impact limits to A-Index steelhead. All mainstem non-treaty fall fisheries (below the Highway 395 Bridge in Pasco, Washington) are managed not to exceed impact rates of 2% on wild A-Index and wild B-Index steelhead. Treaty fisheries are managed based on the abundance-based harvest rate schedule for the combined hatchery and wild B-Index return.

Table A4. Steelhead harvest rate schedule for fall management period.				
Forecast Bonneville Total B Steelhead Run Size	River Mouth URB Run Size	Treaty Total B Harvest Rate	Non-Treaty Natural Origin B Harvest Rate	Total Harvest Rate
<20,000	Any	13%	2.00%	15.00%
20,000	Any	15%	2.00%	17.00%
35,000	>200,000	20%	2.00%	22.00%
B-Index Steelhead are defined as steelhead measuring ≥ 78 cm & passing Bonneville Dam during July 1 and October 31. This harvest rate schedule applies to fall season fisheries only. These fisheries include all mainstem fisheries below the mouth of Snake River from August 1 through October 31 and for mainstem fisheries from The Dalles Dam to the mouth of the Snake River from November 1 through December 31. Also included are fall season treaty fisheries in Drano Lake and tributary mouth fisheries in Zone 6 that impact Snake River steelhead.				

Lower Columbia River wild/natural Coho (LCN Coho)

As part of the 2008-2017 MA, ocean and Columbia River fisheries are managed to provide treaty Indian and non-treaty fisheries the opportunity to each harvest 50% of the upriver adult Coho available for harvest south of the U.S-Canada border. Non-treaty fisheries include commercial and recreational fisheries in the ocean and mainstem Columbia River. For lower river Coho stocks, the exploitation rate (ER) limits are based on impacts to LCN Coho stocks. These ER limits are set annually by NMFS using a harvest matrix that considers parameters of ocean survival and parental escapement. The matrix was updated in 2015 to include additional reference populations. The allocation of non-treaty catch and ESA impacts between ocean and in-river fisheries is determined annually by the states and occurs during the Pacific Fishery Management Council (PFMC) and North of Falcon (NOF) meetings in March and April.

Lower Columbia River wild/natural (LCN) Coho - Exploitation Rate Matrix					
Parental Escapement (percent of full seeding)	Marine Survival Index a/				
	Very Low $\leq 0.06\%$	Low $\leq 0.08\%$	Medium $\leq 0.17\%$	High $\leq 0.40\%$	Very High $> 0.40\%$
Normal	10%	15%	18%	23%	30%
Very Low *	$\leq 10\%$	$\leq 15\%$	$\leq 18\%$	$\leq 23\%$	$\leq 30\%$
* In the event that lower Columbia River natural Coho average spawning escapements fall below 30 percent of full seeding when considered as an average of the ten reference populations, b/ the Council shall work to the extent possible to minimize LCN Coho exploitation rates on adult returns from the corresponding brood year, and in no case exceed the exploitation rate for a given marine survival index category.					
a/ Columbia River hatchery Coho jack returns per smolt released.					
b/ Clatskanie River, Scappoose Creek, Elochoman River/Skamokawa River, Grays River/Chinook River, Clackamas, Sandy River, Lower Cowlitz River, Toutle River, Coweeman River, and East Fork Lewis River.					

Lower Columbia River wild/natural tule Chinook (LCR tule)

Fall season fisheries in the Columbia River and ocean that harvest LCR tules are currently managed according to an abundance-based ER schedule that depends on the abundance of LRH Chinook. The LRH Chinook are considered a valid indicator of the relative abundance of LCR (natural) tules. The total allowed ER is shared between ocean and in-river fisheries downstream of Bonneville Dam. The allocation of non-treaty catch and ESA impacts between ocean and in-river fisheries is determined annually by the states and occurs during the PFMC and NOF meetings in March and April.

Exploitation Rate Schedule for LCR Tule Chinook	
LRH Abundance	Exploitation Rate
0-30,000	0.30
30,000 -40,000	0.35
40,000 -85,000	0.38
> 85,000	0.41

Upriver Fall Chinook

Fall season fisheries in the Columbia River Basin below the confluence of the Snake River are managed according to the abundance-based harvest rate schedule from the 2008-2017 MA (Table A3). If non-treaty mark-selective fisheries are implemented that impact URBs, the non-treaty ocean and in-river fisheries may not harvest more than 50% of the harvestable surplus of URBs, consistent with the applicable federal allocation case law.

Upriver fall Chinook escapement goals include 7,000 adult BPH fall Chinook (4,000 females) to Spring Creek Hatchery, and a 60,000 adult URB fall Chinook (natural and hatchery) management goal above McNary Dam.

Table A3. Chinook harvest rate schedule for fall management period.					
Expected URB River Mouth Run Size	Expected River Mouth Snake River Natural Origin Run Size ¹	Treaty Total Harvest Rate	Non-Treaty Harvest Rate	Total Harvest Rate	Expected Escapement of Snake R. Natural Origin Past Fisheries
<60,000	<1,000	20%	1.50%	21.50%	784
60,000	1,000	23%	4%	27.00%	730
120,000	2,000	23%	8.25%	31.25%	1,375
>200,000	5,000	25%	8.25%	33.25%	3,338
	6,000	27%	11%	38.00%	3,720
	8,000	30%	15%	45.00%	4,400
<ol style="list-style-type: none"> 1. If the Snake River natural fall Chinook forecast is less than level corresponding to an aggregate URB run size, the allowable mortality rate will be based on the Snake River natural fall Chinook run size. 2. Treaty Fisheries include Zone 6 Ceremonial, subsistence, and commercial fisheries from Aug 1-Dec 31. 3. Non-Treaty Fisheries include: Commercial and recreational fisheries in Zones 1-5 and mainstem recreational fisheries from Bonneville Dam upstream to the confluence of the Snake River and commercial and recreational SAFE (Selective Areas Fisheries Evaluation) fisheries from August 1-December 31. 4. The Treaty Tribes and the States of Oregon and Washington may agree to a fishery for the Treaty Tribes below Bonneville Dam not to exceed the harvest rates provided for in this Agreement. 5. Fishery impacts in Hanford sport fisheries count in calculations of the percent of harvestable surplus achieved. 6. When expected river-mouth run sizes of naturally produced Snake River Fall Chinook equal or exceed 6,000, the states reserve the option to allocate some proportion of the non-treaty harvest rate to supplement fall Chinook directed fisheries in the Snake River. 					

Annual Non-Treaty Impact Allocation of Upriver Fall Chinook

Based on preseason runsize forecasts, a fishing schedule is developed annually for non-treaty recreational and commercial fisheries through the NOF management process. The fisheries described in the following section were structured, or guided by, preseason planning efforts, and informed by in-season data. Preseason plans for fall fisheries that occurred in 2016 can be found in the “Fall Season Expectations” section of the 2016 Fall Joint Staff Report.

REVIEW OF MAINSTEM AND SELECT AREA FISHERIES

Non-Treaty Commercial Fisheries

Traditional commercial fisheries below Bonneville Dam occurred during "early fall" (August to mid-September) targeting Chinook, and during the "late fall" (mid-September to mid-November) targeting Coho. Although Coho typically outnumber Chinook in the late fall season catch, Chinook landings have occasionally been significant during the mid-September timeframe. Incidental landings of steelhead occurred in both early and late fall seasons until the commercial sale of this species was banned in 1975. Time, area, and gear restrictions have been imposed to reduce the incidental catch of non-target species. See Figure 5 for a map of commercial fishing zones.

Since 1992, fall season commercial fisheries below Bonneville Dam have been reduced in response to ESA listings. During 1995-1998, extremely low Coho abundance curtailed nearly all commercial fishing opportunities during the late fall period. During 1997-2001, early fall fisheries consisted primarily of short fishing periods targeting sturgeon. Since 2002, August fisheries have expanded in time with increased emphasis placed on targeting Chinook. Since 2011, the early fall season has primarily occurred in Zones 4-5 due to ESA constraints and allocation guidelines on LCR tule Chinook. Late fall target Chinook seasons typically occur from mid to late September through the end of October within Zones 4-5. Prior to 2006, the majority of the late fall season targeted Coho in Zones 1-3 (below the mouth of the Lewis River). Since 2006, the ESA listing of LCN Coho has reduced Coho fishing opportunity considerably. However, during 2013-2015, mark-selective Coho-target fisheries were implemented using tangle net gear and other live-capture regulations to provide commercial access to harvestable hatchery-origin Coho, while remaining within allowable ESA impact limits.

Reduced non-treaty commercial salmon fishing opportunities in the late 1990s and adoption of Joint State Sturgeon Management Agreements beginning in 1997 resulted in target sturgeon fisheries becoming an important part of fall fishing strategies to allow access to the commercial allocation of White Sturgeon. Sturgeon fishery management changed considerably in 2003 when the annual commercial White Sturgeon allocation was reduced to 20% of the total non-treaty harvest allowed below Bonneville Dam. During 2002-2013, daily and/or weekly possession and sales limits concurrent with salmon fisheries largely replaced directed sturgeon seasons during the fall timeframe. During 2014-2016, policies adopted by the WFWC and OFWC prohibited the retention of White Sturgeon in all non-treaty fisheries downstream of Bonneville Dam (sport and commercial).

2016 Early Fall Commercial Mainstem Fisheries

The 2016 early fall (August) mainstem gillnet season consisted of eleven 9-hour fishing periods in Zones 4-5. A 9-inch minimum mesh size restriction was in place for all periods to minimize handle of steelhead and under-sized sturgeon. Landings for the early fall season included 46,321 Chinook and 408 Coho. Chinook landings were 90% of pre-season expectations; however, ESA impacts were higher than expected for both SRW and LCR wild Chinook. Coho landings in the early fall season were less than the recent 10-year average of 600 fish. Steelhead handle was estimated at 1,028 fish (~600 mortalities). See Tables 14-21 for details on season structure and harvest.

2016 Late Fall Commercial Mainstem Fisheries

Due to a mid-September URB run downgrade, the 2016 late fall mainstem gillnet season was minimal and consisted of only two fishing periods on the nights of September 18 and September 23. No other Chinook or Coho-directed mainstem drift net fisheries occurred due to subsequent URB run downgrades.

Combined landings during the late fall fishery included 11,619 Chinook and 257 Coho, which were both well below expectations. Chinook landings were the lowest since 2010 and 70% of the preseason expectation of around 16,500 adults, mainly due to the decreased run size. Combined fall season Coho landings (665 fish) were much less than the preseason expectation, reflective of the URB run downgrade, which prevented additional fishing opportunity. Steelhead handle was estimated at 126 fish (~70 mortalities) during the late fall season. See tables 14-19, 22, and 23 for details on late fall season structure and harvest.

2016 Fall Seine Fisheries

The 2016 seine fishery occurred between August 22 and September 30. Fishing was restricted to commercial fishing Zones 2-3 for beach seines, and Zones 1 and 3 for purse seines, in an attempt to collect data in zones with limited gear-specific information. The fishery was limited entry; restricting permits to randomly selected qualified applicants. A total of two beach and two purse seine permits were issued from a pool of 11 applications. ESA impacts assigned to this fishery were limited, and derived from the mainstem commercial allocation. With limited impacts and an objective to provide a reasonable economic return for participants, the fishery operated under an Individual Fish Quota (IFQ) system that limited allowable steelhead handle, as well as the number of adult Chinook and Coho that could be kept and sold.

2016 Columbia River Seine IFQs				
Gear	#	<u>Chinook</u>	<u>Coho</u>	<u>Steelhead</u>
	Permits Allowed	Adult Kept	Adult Kept	Handle
Beach Seine	2	600	400	320
Purse Seine	2	750	600	230

To limit mortalities of LCR tule Chinook and LCN Coho, allowable sales were primarily limited to fin-clipped (adipose and left-ventral) salmon only. To evaluate the potential daily fishery value if unmarked bright Chinook could be retained, a one-day non-mark-

2015-16 Mortality Rates for Col R. Seine Fisheries			
Seine	Chinook	Coho	Steelhead
Beach	33%	38%	5%
Purse	21%	29%	2%

selective fishery occurred for both beach and purse seine gear when any Chinook could be sold. Regulations required all unclipped Coho salmon and all steelhead to be released. The fishery was observed by agency staff at a rate of 100%. Mortality rates applied were the same as used in 2015.

Combined landings for the fishery totaled 1,001 adult and 114 jack Chinook, and 482 adult and 122 jack Coho (see table below and Table 24). Landings varied widely among fishers and gear types. Both beach seiners landed ~0% of their adult Chinook IFQs and 0-1% of adult Coho IFQs. Purse seiners landed 64-69% of their adult Chinook IFQs and 29-49% of adult Coho IFQs. An additional 2,081 unmarked Chinook, unmarked Coho (except for one hatchery fish), and steelhead were released. Mark rates by species were low for Chinook (30%), average or slightly below for Coho (63%), and high for steelhead (84%).

Summary of Salmonid Handle in the Fall Columbia River Seine Fishery, 2016											
	Kept						Released				
	<u>Marked Chinook</u>		<u>Unmarked Chinook</u>		<u>Coho</u>		<u>Chinook</u>		<u>Coho</u>		
	Adult	Jack	Adult	Jack	Adult	Jack	Unmarked	Marked	Unmarked	Marked	Steelhead
Beach	0	1	1	0	13	26	0	0	5	0	2
Purse	728	93	272	20	469	96	1,734	0	44	1	295
Total	728	94	273	20	482	122	1,734	0	49	1	297
	1,719 kept (45.2% of salmonid handle)						2,081 released (54.8% of salmonid handle)				

In 2016, the average weight of Chinook landed with seine gear was 38% less than Chinook landed in the mainstem gillnet fishery. When compared with Coho landed in the early-fall gillnet fishery, seine-caught Coho were 27% smaller. Lower average weights for seine-caught fish likely results from jacks comprising a higher percentage of the total catch (~14%), and all sizes of adult fish being handled proportionate to their abundance.

Non-Treaty Recreational Fisheries

The fall recreational salmon fishery occurs throughout the Columbia River with primary catch areas in the estuary (Buoy 10), the lower river between Tongue Point and Bonneville Dam, and the Vernita-Hanford Reach area below Priest Rapids Dam. The Buoy 10 fishery targets fall Chinook and Coho from the Buoy 10 line upstream to the Tongue Point/Rocky Point line and accounts for the majority of the recreational Coho harvest in the Columbia River. The LCR recreational fishery catches fall Chinook, summer steelhead, and Coho in the mainstem Columbia River from the Tongue Point/Rocky Point line upstream to Bonneville Dam. The Hanford Reach fishery targets fall Chinook in the area downstream of Priest Rapids Dam. Smaller fisheries targeting Chinook, Coho, and steelhead also occur near most tributary mouths on the mainstem Columbia River between Bonneville and McNary dams. In all of these fisheries, only hatchery-origin steelhead and Coho may be retained, except unclipped Coho may be kept upstream of the Hood River Bridge (RM 170).

The popularity of the LCR fall salmon fishery has grown considerably over the years, and anglers continue to fish successfully in new areas of the lower Columbia for fall Chinook. Historically, high water temperatures on the mainstem during August and September hindered anglers' ability to catch fall Chinook in the shallows, and the majority of the catch occurred at or

below tributary mouths where water temperatures were cooler. Beginning in the late 1990s anglers began targeting fall Chinook in deeper areas of the river with excellent results, especially in and around shipping lanes. The recreational catch of adult fall Chinook on the mainstem has increased from an average of 2,300 during the 1980s, to 5,000 fish during the 1990s, 14,700 during the 2000s, and 27,500 since 2010. Angler trips have also increased from an average of about 41,000 trips in the 1980s, to 54,000 trips in the 1990s, and over 100,000 trips annually since 2000. Because of the increased effort and catch, the recreational opportunity for fall Chinook on the mainstem Columbia River downstream of Bonneville Dam has been constrained in terms of the daily bag limit and/or fewer fishing days since 2004 in order to meet ESA and harvest-sharing guidelines.

Similar to the trend in the lower river fishery, Chinook catches in the Buoy 10 fishery have also increased as anglers have become more effective at catching Chinook in this area, especially in recent years of large returns. While the average number of angler trips by decade has remained stable since the 1990s, Chinook harvest has increased from an average of 6,700 in the 1990s, 10,000 in the 2000s, to 20,000 since 2010. A significant portion of the Chinook catch in the Buoy 10 fishery is tule stock. The increased Chinook harvest, coupled with a decrease in the allowable ER on LCR tules has resulted in reduced opportunity for Chinook since 2007, with retention seasons averaging about 30 days during August and early September. Additionally, mark-selective regulations have been adopted for a portion of the season during each year since 2013 to increase the likelihood of meeting the Chinook retention end-date objective of Labor Day.

2016 Buoy 10 Recreational Fishery

The 2016 Buoy 10 fishery opened August 1 for fall Chinook, adipose fin-clipped Coho, and adipose fin-clipped steelhead. Chinook retention was originally scheduled for August 1 to September 5 (Labor Day) with retention on Sundays and Mondays limited to hatchery fish only. Chinook retention was also scheduled for October 1 to December 31. The season started with a daily bag limit of two adult salmon or steelhead in combination, with only one adult Chinook and/or one steelhead allowed. The retention of hatchery Coho and steelhead was planned for August 1 to December 31. The expected harvest (including release mortality) for the Buoy 10 fishery was 48,500 Chinook, and 22,700 hatchery Coho.

The 2016 Buoy 10 fishery opened with about 7,500 angler trips and a Chinook catch rate of about 0.1 fish per rod (kept) through the first week (August 1 to 7). Angler trips averaged over 22,200 per week through August and Chinook catch rates peaked at 0.3 fish per rod (kept) during the week of August 22 to 28. Effort was high but catch rates were lower than expected and stock composition tracked within pre-season expectations through the month of August. The Joint States reviewed the fishery in-season, removed the Chinook mark-selective regulations for Sunday and Monday of Labor Day weekend, and extended Chinook retention through September 14. Chinook retention (hatchery fish only) was extended again from September 15 through the end of September. On October 1, the bag limit increased to any two Chinook as planned; however, retention of Chinook closed effective October 22 through December 31 as the harvest rate on URB fall Chinook approached the management guideline.

Coho catch rates remained low in August (0.01 to 0.03 kept fish per rod) and peaked at 0.3 fish per rod during the week of August 28. The Coho catch rate averaged around 0.2 fish kept per rod for September. The Columbia River Coho return of both early and late stocks was lower than predicted. As a result, angler interest and effort declined rapidly after the first week of September. Retention of all salmonids closed from October 22 through November 4 to avoid handle of URB fall Chinook. Retention of hatchery Coho and steelhead reopened on November 5 through December 31.

2016 Buoy 10 Fishery- Summary of Retention Regulations	
08/01 to 08/29	Two adult salmonid daily bag limit, only one Chinook and/or one steelhead allowed. Coho and steelhead must be adipose fin-clipped. Chinook must be adipose fin-clipped on Sundays and Mondays.
08/30 to 09/14	Two adult salmonid daily bag limit, only one Chinook and/or one steelhead allowed. Coho and steelhead must be adipose fin-clipped.
09/15 to 09/30	Two adult salmonid daily bag limit, only one Chinook and/or one steelhead allowed. Adipose fin-clipped fish only.
10/01 to 10/21	Two adult salmonid daily bag limit, only one steelhead allowed. Coho and steelhead must be adipose fin-clipped.
10/22 to 11/04	Retention of salmonids prohibited.
11/05 to 12/31	Two adult salmonid daily bag limit. Coho and steelhead must be adipose fin-clipped. Chinook retention prohibited.

The 2016 Buoy 10 fishery consisted of 94,950 angler trips with a kept catch of 17,780 Chinook and 9,182 adipose fin-clipped Coho (Table 26). Anglers released 7,688 Chinook and 4,885 Coho (release mortality rate 19% for both species). The total Chinook kept catch ranked eighth highest since 1982. Total angler effort in the fishery was the third highest in the last 15 years behind 2015 and 2014. See Tables 15, 18 and 26.

2016 Lower Columbia Mainstem Recreational Fishery

The 2016 lower Columbia River recreational fishery opened August 1 for fall Chinook and adipose fin-clipped Coho. The states structured Chinook retention seasons and bag limits by area to maximize the opportunity for anglers to harvest surplus upriver bright fall Chinook within conservation and harvest-sharing guidelines for wild LCR tule fall Chinook. In the area between Tongue Point and Warrior Rock, where LCR tule abundance is the highest, retention of any Chinook was scheduled to be open during August 1-September 9 and October 1-December 31. The states also adopted a MSF for hatchery Chinook between Tongue Point and Warrior Rock during September 10-14. The daily bag limit for this area was two adult salmon or steelhead in combination with not more than one adult Chinook until October 1 when the limit changed to two adult fish. From Warrior Rock upstream to Bonneville Dam, Chinook retention was allowed during August 1-December 31 with a two-fish daily bag limit. In both areas, the states reduced the daily bag limit for hatchery summer steelhead during August 1-December 31 to reduce impacts to B-run steelhead. In both areas, the states adopted party fishing rules for boat anglers whereby each angler aboard a vessel could continue to deploy gear until the boat limit was achieved. The preseason catch expectation for the mainstem recreational fishery was 33,620 adult Chinook and 1,570 Coho, including catch during the MSF.

Similar to recent years, high water temperatures had an adverse effect on catch rates in the recreational fishery from Cathlamet upstream to Bonneville Dam during early August. Catch rates began to improve downstream of Warrior Rock by August 11 and were good throughout the river by the end of the month. Through August 31, the total Chinook catch in the recreational fishery was 6,400 adult fish, which was below expectations but still the fourth highest Chinook catch for the month on record.

Chinook catch rates continued to improve during September 1-7, but the overall Chinook catch and impacts to LCR tules remained below expectations. Chinook retention switched to MSF regulations during September 10-14 in the Tongue Point to Warrior Rock area, as planned. After the switch to MSF regulations in the lower river, many anglers moved just upstream of Warrior Rock or into the Gorge, where Chinook catches were exceptional. Through September 11, the cumulative Chinook catch in the lower Columbia was 15,868 adult fish, or about half of the total expected catch for the entire season; and the states extended the mark selective fishery between Tongue Point and Warrior Rock during September 15-22. Through September 22, the cumulative Chinook catch was 19,900 adult fish with an adjusted expectation for 26,000 total for the season, and the states extended the MSF between Tongue Point and Warrior Rock during September 23-30. The total Chinook catch for September was 16,900 adults, the sixth highest catch for the month on record.

Chinook retention reopened on October 1 downstream of Warrior Rock and Chinook catch rates were good. Catch rates also remained excellent in the Gorge and upstream of Warrior Rock through mid-October. During September 12-October 17, the TAC downgraded the URB Chinook run on six successive meetings ending at 71% of the preseason forecast. On October 19, the combined non-treaty impact to the URB run was 15.5% compared to the maximum allowable harvest rate of 15%, and the states proposed closing Chinook retention from Buoy 10 to the Oregon/Washington border effective October 22. During the Joint State Hearing, NOAA Fisheries advised the states that they would also have to close Coho and steelhead fisheries to avoid any additional release mortality to SRW fall Chinook, so the states closed all salmon and steelhead fishing effective October 22. The total Chinook catch during October 1-21 was 1,857, the second highest on record. Coho and steelhead retention did reopen on November 5th, but the most meaningful opportunity that remained was upstream of Bonneville Dam.

The 2016 mainstem recreational fishery produced 133,300 angler trips with catches of 25,133 adult fall Chinook, 1,780 Chinook jacks, 1,317 adipose fin-clipped adult Coho and 1,862 adipose fin-clipped summer steelhead, including trips and catch made during the MSF. Both the season total CPUE of 0.19 adult Chinook kept per angler and total adult Chinook catch were the sixth highest on record, and the angler trip total was the fourth highest on record. During September 10-30, the MSF between Tongue Point and Warrior Rock produced 9,439 trips with catches of 667 adipose fin-clipped adult fall Chinook, 265 adipose fin-clipped adult Coho and 1,686 unmarked adult fall Chinook released (72%). Season total releases were 2,224 adult Chinook, 459 adult Coho, and 1,168 summer steelhead. See Tables 15, 18, 19 and 27.

2016 Columbia Mainstem Recreational Fisheries above Bonneville Dam

The Columbia River is typically open for Chinook retention during the fall season in the area from Bonneville Dam upstream to the Highway 395 Bridge near Pasco, Washington (37 miles

upstream of McNary Dam). Additional areas of the Columbia River upstream of the Highway 395 Bridge, such as the Hanford Reach, are also open during the fall season. Catch estimates for the salmon and steelhead fisheries from Bonneville Dam upstream to the Highway 395 Bridge are based on recent-year average harvest rates, until catch record card data are available, which usually has a one or two year delay. The catch from the Hanford Reach fishery is based on a robust creel program. See Tables 15, 18, 19 and 28 for seasons and catch.

Bonneville Dam to Hwy 395 Fishery

This fishery is often referred to as the 'Zone 6' fishery; however, it does extend upstream of McNary Dam to the Highway 395 Bridge near Pasco, Washington. The average Chinook catch from Bonneville to the Highway 395 Bridge during 2010-2015 ranged from 5,200 to 20,200 adult fish annually, and averaged 11,100 Chinook. The majority of the catch occurs within the Zone 6 area proper (Bonneville Dam upstream to McNary Dam). Minor catch (average of 300 Chinook annually) is reported in the area from McNary Dam upstream to the Highway 395 Bridge. Chinook retention opened August 1 as normal, but due to the reduced upriver bright fall Chinook return, the 2016 fishery closed to Chinook retention (and all salmon and steelhead angling) October 22. Angling for, and retention of, Coho and steelhead reopened effective November 5, but Chinook retention remained closed throughout the remainder of the year. Harvest is currently estimated at 5,800 adult fish, based on recent harvest rates. According to available catch record data, Coho harvest averaged around 3,700 fish during 2010-2015 (Tables 15 and 28).

Steelhead fisheries occur from Bonneville Dam upstream to the Highway 395 Bridge. The steelhead catch from August through December during 2010-2015 ranged from 5,300 to 8,300 fish annually, and averaged 6,400. Estimated catch (based on average catch data) for the 2016 fall season is 10,040 hatchery steelhead kept (1,425 released). Included in this estimate is steelhead harvest during November and December in the area from The Dalles Dam upstream to Highway 395 Bridge (Table 19).

Hanford Reach Fall Chinook Fishery

The Hanford Reach fall Chinook sport fishery opens annually from August 16 through October 22 for the area from the Highway 395 Bridge at Pasco upstream to Priest Rapids Dam. In response to the anticipated return of almost 300,000 URB fall Chinook to the Hanford Reach, regulations for this fishery were amended to include a daily bag limit of three adult salmon. The fishery was also extended through October 31 in the area between the Highway 395 Bridge and the Old Hanford townsite wooden powerline towers.

An estimated 16,860 adult fall Chinook, 1,068 jack fall Chinook, 35 Coho, and 20 steelhead were harvested in the 2016 Hanford Reach fall salmon sport fishery. An additional 301 adult Chinook, 55 jack Chinook, and 83 steelhead were caught and released. The 2016 Chinook harvest continued the trend started in 2010 of harvest exceeding 10,000 adults in this fishery. An estimated 40,066 angler trips were completed in 2016 (Table 28).

Select Area Fisheries

Select Area commercial fisheries occur in off-channel areas and target Coho and Chinook salmon returning from net-pen and hatchery releases at these sites. These fisheries were initiated in 1962 with the adoption of Coho Salmon seasons in Youngs Bay. Fall Select Area fisheries have occurred in Tongue Point/South Channel, Blind Slough/Knappa Slough, and Deep River since 1996; and Steamboat Slough during 2000-2005. All fall non-treaty fisheries are managed to remain within allowable harvest impact rates or catch guidelines; however, Select Area fall fishery impacts on ESA-listed fish are negligible and in-season modifications are seldom necessary.

Declines in mainstem fishing opportunities and the success of the fishery in Youngs Bay prompted the Bonneville Power Administration (BPA) to fund a project in 1993 to expand net-pen programs and terminal fisheries in Youngs Bay and establish other off-channel areas. Currently, the Select Area Fisheries program is supported by funding from BPA, the state of Oregon, NOAA Fisheries (via Mitchell Act), and a voluntary assessment paid by the commercial fishing industry. Currently, production sites and fisheries operate in Youngs Bay, Tongue Point/South Channel, and Blind Slough/Knappa Slough in Oregon and Deep River in Washington. Fall fisheries in the Select Areas primarily target hatchery Coho returning to these release sites; however, SAB and LRH fall Chinook are also produced and harvested in Youngs Bay and LRH fall Chinook from BCH are targeted in the Blind Slough/Knappa Slough fishery when a harvestable surplus is expected. Coho and Chinook produced for Select Areas also contribute to the Columbia River recreational and commercial fisheries, as well as ocean recreational, ocean commercial, and tribal fisheries. Coho fisheries typically start in late August or early September and continue through the end of October. In Youngs Bay, weekly periods occur throughout August to target Chinook and the first Coho returns. Late-August periods have also been adopted to target tule Chinook returning to the Deep River Select Area.

Recreational fisheries also occur in the Select Areas. Under permanent regulations, Youngs Bay, Blind Slough/Knappa Slough, and Deep River Select Area sites are open the entire year for retention of Chinook and adipose fin-clipped Coho with a daily bag limit of two adult salmonids. Chinook retention during January 1 – July 31 is restricted to hatchery fish only in the Select Areas and associated tributaries. The fall recreational fisheries tend to have relatively low effort and catch, with an average estimated catch of approximately 750 Chinook and 350 Coho annually in Oregon Select Areas.

2016 Select Area Fisheries

Chinook landings for all fall Select Area fisheries totaled 12,431 fish, which was the ninth highest since project inception, but fell below the recent 5-year average (22,600; 2011-2015). Landings of Coho totaled 34,723, which was slightly higher than the pre-season expectation (29,200; all Select Area fisheries), but was much lower than the recent 5-year average (60,612; 2011-2015). Since January 2014, retention of white sturgeon has been prohibited in Columbia River commercial and recreational fisheries. Landings of Chinook and Coho are summarized in Tables 15, 17, 18, 23, and 25. Season structures are summarized in Table 14.

The fall season in Youngs Bay opened with one 36-hour period per week (4 periods total) through late August. The upper fishery boundary during the fall season is moved downstream from the confluence of Youngs and Klaskanine rivers to Battle Creek Slough to ensure adequate SAB escapement. After the August target Chinook periods were complete, the fall season continued as a target Coho fishery, starting with three twelve-hour periods from August 29 through September 1. The fishery was open continuously from September 5 through October 31 (56 days). As in previous years, the maximum allowable mesh size was reduced from 9 ¾ to 6-inches in late August to moderate harvest of SAB fall Chinook. Due to additional concerns regarding SAB broodstock returns (similar to 2015), commercial fishing hours were reduced in late August from the pre-2105 schedule. The Youngs Bay fall season consisted of 64 days and resulted in landings of 6,398 Chinook and 15,784 Coho. The Chinook catch was well below the recent 5-year average (12,300; 2011-2015). Coho harvest was slightly better than 2015 and proximate to the preseason expectation (11,900), but was still well below the recent 5-year average (24,800; 2011-2015).

The Blind Slough/Knappa Slough fall season began with one 12-hour period on August 24 and three periods during August 29 – September 1. The season continued with four nightly 12-hour fishing periods during September 5 – September 9, and four nightly 16-hour periods per week during September 12 – October 28. The total number of fishing periods were reduced from previous years due to concerns over broodstock collection of both tule fall Chinook and Coho. The maximum mesh size allowed was 9¾-inch for the entire season. The Joint States met in-season and rescinded all Knappa Slough commercial fishing periods in October in response to mounting concerns over broodstock collection. In addition, the recreational angling deadline in Big Creek was extended down to the railroad trestle at the mouth of Big Creek. The fall Blind Slough/Knappa Slough season consisted of 36 fishing periods (20 for Knappa Slough) and landings of 2,027 Chinook and 1,493 Coho. The Chinook catch was well below the recent 5-year average (3,900). Coho harvest was below average (6,600) and the preseason expectation (4,300).

The season structure of the Tongue Point/South Channel fall fishery was very similar to the Blind Slough fishery in order to maintain concurrency between the two fishing sites. The only difference being four nightly 18-hour periods per week from September 12 through October 28. The season consisted of 36 periods, resulting in landings of 2,007 Chinook and 11,284 Coho. The Chinook catch was below the recent 5-year average (4,000). Coho landings were also below the recent 5-year average (17,000), but were higher than the preseason expectation of 5,600 fish.

The Deep River fall fishery was expanded in 2016 with additional periods added in August to maximize harvest of hatchery fall Chinook and reduce potential SAB strays to Grays River. The fishery began with two nightly 12-hour fishing periods per week from August 1 through August 12, expanding to four nightly periods during August 15 – September 2, and then five nightly periods during September 5 – September 10. Fishing extended to five nightly 15-hour periods September 12 – October 19; during this timeframe, the maximum mesh size was reduced to 6-inches to diminish handle of Chum Salmon and maximize harvest of Coho. The Deep River fall commercial season consisted of 45 periods resulting in landings of 1,999 Chinook and 6,162 Coho. The Chinook catch was higher than the recent 10-year average (1,400; 2006-2015), but less than half of the record-year catch in 2015 (4,303). Coho catch was about half the recent 5-year average (12,200) and lower than the preseason expectation of 7,400.

The 2016 recreational fisheries in Select Areas occurred as per permanent regulations in Washington and Oregon. Recreational catch in the Oregon Select Areas is approximated from expanded harvest cards turned in voluntarily by anglers and are not available until the following calendar year. Estimated catch in 2015 was about 600 Chinook and 430 Coho in Oregon Select Areas and associated tributaries.

Treaty Indian Mainstem Fisheries

During the fall season, fisheries in the mainstem Columbia River between Bonneville and McNary dams (Zone 6, Figure 5) include treaty Indian commercial and ceremonial and subsistence (C&S) fisheries. Like fisheries occurring in Zones 1-5, Zone 6 fisheries are managed in accordance with harvest rate schedules in the *U.S. v. Oregon* Management Agreement. The URB harvest rate is used as a surrogate for harvest rates on SRW Chinook. Treaty Indian landings and fishery structures are summarized in Tables 13, 15, 18, and Tables 29 - 32. ESA impacts are shown in Tables 33 and 37. Treaty Indian tributary fisheries (including those in the Snake Basin) are not discussed in this report.

2016 Treaty Indian Commercial Fisheries

The 2016 treaty Indian fall commercial fishery was managed to target harvestable salmon and steelhead, while limiting impacts on ESA-listed SRW fall Chinook and B-Index summer steelhead. The commercial gillnet salmon fishery occurred between August 22 and October 21, and consisted of nine weekly fishing periods that were 4½-day fishing periods (40.5 fishing-days total). As in most years, the standard Spring Creek Hatchery sanctuary was in effect until broodstock collection was assured (first four openings), but the standard sanctuary was reinstated during the sixth opening to boost broodstock collection efforts. After the sixth opening, the last three openings returned to the small sanctuary size. An 8-inch minimum mesh size restriction was in place for the first seven gillnet openings. Aerial surveys were conducted weekly; net counts averaged 429 nets per survey (Table 32). Platform hook-and-line caught fish were open for sales during August 1 through December 31. Tribal fisheries downstream of Bonneville Dam were open according to agreements with the States, but there was very little recorded effort or catch (428 Chinook, 553 steelhead, and 60 Coho).

Fall season treaty fisheries landed 148,749 Chinook (132,167 adults), 13,555 steelhead, 6,114 Coho, and 34 Sockeye. Sturgeon landings during target salmon seasons totaled 54 fish. A total of 66 walleye were also caught. The tribes only allowed legal-sized sturgeon to be retained for subsistence use during fall salmon gillnet fisheries. As is typically the case, Chinook catch was highest in the first two weeks of September. Of the total catch, 10% of the Chinook, 24% of the steelhead, and 13% of the Coho were taken home or sold directly to the public. Impacts to total B-Index summer steelhead from treaty Indian fisheries totaled 10.1%, compared to the 20.0% limit.

2016 Fishery Impacts

Fall season fisheries target healthy stocks of steelhead and salmon. Fall fisheries are structured to minimize handle of ESA-listed fish with time, area, and gear restrictions while maximizing harvest of healthy fish stocks. Tables 33-37 provide impact summaries for treaty Indian and non-treaty fisheries.

For 2016, URB and SRW fall Chinook impacts were managed based on an URB run size greater than 200,000 adults and an SRW run size of at least 8,000 adults. According to Table A3 of the MA, returns of this size allow for a harvest rate of 45% (15% non-treaty and 30% treaty Indian). The actual URB harvest rates were 23.3% in treaty Indian fisheries and 14.8% for non-treaty fisheries. Impacts to SRW fall Chinook totaled 23.3% from treaty fisheries and 14.6% from non-treaty fisheries. Due to non-treaty mark-selective fisheries in the lower river recreational fisheries, there is a slight difference between the harvest rate of URBs and the impact rate of SRWs in treaty and non-treaty fisheries. Non-treaty impacts are considered preliminary until catch record card data is available from recreational fisheries upstream of Bonneville Dam. The difference between post-season preliminary and final data is typically minimal.

2016 Management	Total	Goal/ Guideline
Total URB HR	38.2%	45.0%
Non-Treaty	14.8%	15.0%
Treaty Indian	23.3%	30.0%
Snake River Wild HR	37.9%	45.0%
Non-Treaty	14.6%	15.0%
Treaty Indian	23.3%	30.0%
% of Harvestable Surplus		
Non-Treaty	26%	50%
Treaty Indian	29%	50%
McNary Escapement	239,800	60,000
LRH Ocean/Inriver ER	36.0%	41.0%
<i>In-River ER</i>	<i>10.42%</i>	
Non-Treaty Wild B Steelhead	1.6%	2.0%
Treaty Total B-Index Steelhead	10.1%	20.0%
Upriver Coho to Bonneville Dam	82%	50%
Lower Columbia Chum	0.0%	5.0%

The ER for LCR wild tule Chinook totaled 36.0%, compared to the post-season limit of 38.0% for combined ocean and inriver (mainstem Columbia River) fisheries. The combined ER for inriver fisheries was 10.4% ER, or 29% of the 36.0% total.

The ER for LCN Coho totaled 9.4%, compared to the limit of 18% in combined ocean and inriver fisheries. The ER from inriver fisheries was 1.9%, compared to the 5.7% ER planned preseason.

Impacts to B-Index summer steelhead from treaty Indian fisheries totaled 10.1%, compared to the 20.0% limit. Incidental release mortalities from non-treaty fall fisheries resulted in impacts of 1.6% to wild B-Index steelhead, compared to the 2.0% limit.

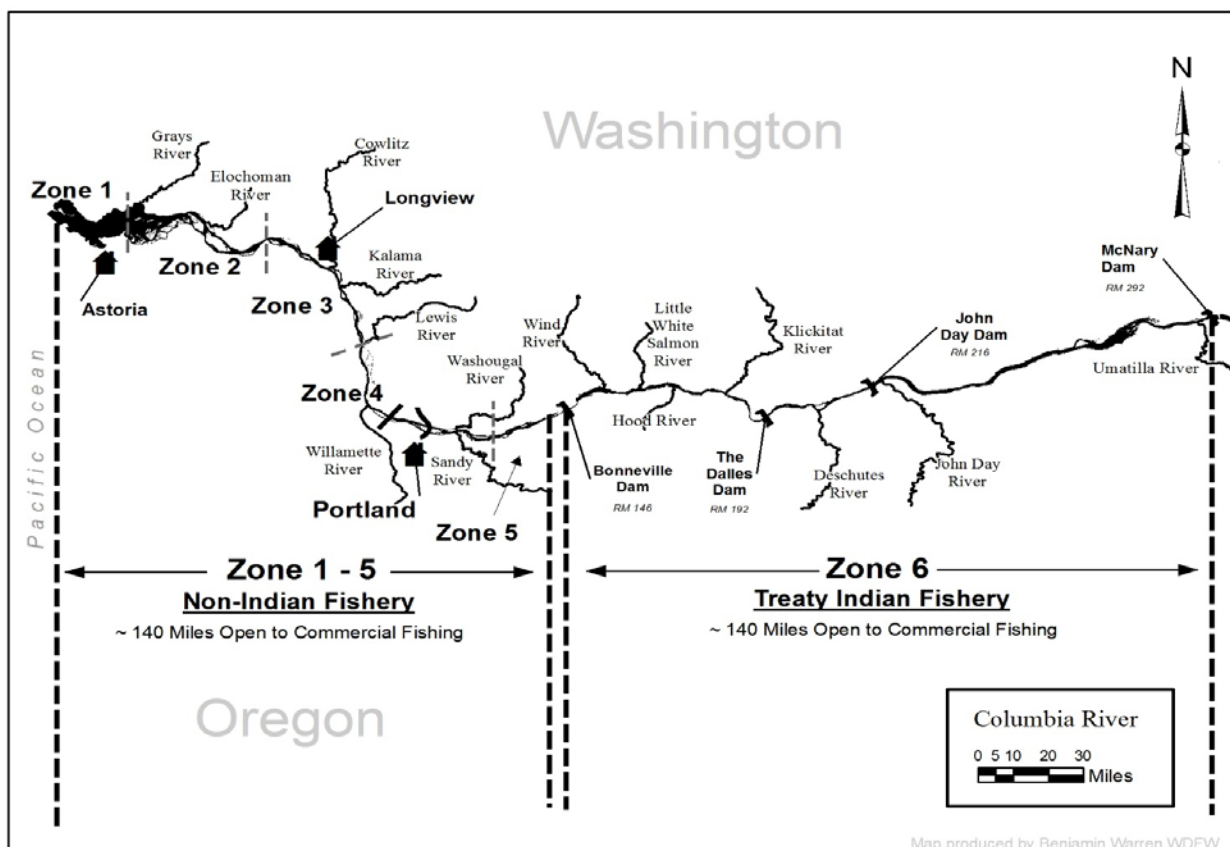


Figure 5. Columbia River commercial fishing zones.

2017 FALL SEASON FISHERY EXPECTATIONS

Non-Treaty Fisheries

Specific recommendations for fall commercial seasons will be presented at Compact hearings occurring throughout the fall management period. Based on preseason run size forecasts, a preliminary fishing schedule was developed for Columbia River non-treaty fisheries through the NOF management process. Select Area and early fall non-treaty commercial fisheries were adopted prior to distribution of this report. As the fall management period progresses, run size updates will occur, which may alter planned fisheries. Chinook run sizes cannot typically be updated until mid-September; therefore, fisheries occurring prior to that time will be managed conservatively to ensure conservation requirements are met, and to allow for flexibility in shaping fishing opportunities during the latter part of the season. Stock composition and estimated impacts for all fisheries will be updated in-season as catch estimates and stock composition (determined from CWT data) become available. These data may differ from preseason expectations, which could result in modifications to fall fishery plans/seasons.

2017 Non-Treaty Columbia River Fall Fishery Chinook Allocation Agreement

The agreement reflects the intent of the Washington and Oregon Fish and Wildlife Commission policies and the management objective to optimize non-treaty (commercial and recreational) fisheries harvest of Chinook and Coho within the limitations of the ESA. The agreement was developed during the March and April 2017 PFMC and NOF meetings, which included input from commercial and recreational fishery representatives.

ESA limits (based on preseason forecasts) for 2017 non-treaty fall fisheries include a 15.0% impact rate for SRW Chinook (URB stock is the surrogate), a 41% ER for LCR tule Chinook (LRH stock is the surrogate), an 18% ER for LCN Coho (unmarked Coho are the surrogate), and a 2% impact rate for wild A- and B-Index steelhead. The ERs for LCR tule Chinook and LCN Coho include impacts from both the ocean and Columbia River fisheries. The most constraining stock for Columbia River fisheries in 2017 is wild B-Index steelhead, which due to a low predicted return, has required significant preseason recreational and commercial fishery reductions to remain within the allowed ESA take limit.

The preseason expectation for non-treaty Columbia River (inriver) fisheries is an impact rate of 12.0% on SRW (12.1% on URBs), an ER of 9.1% on LCR tule Chinook and 3.4% on LCN Coho. Impacts to wild B-Index steelhead are expected to be within the 2.0% limit (1.8% projected).

The non-treaty conservation burden for ESA-listed Chinook is shared between recreational and commercial fisheries. Since wild B-Index steelhead are the most constraining fall stock, neither SRW or LCR tule Chinook impacts are fully allocated preseason. In-river sharing of utilized LCR tule impacts are currently expected to be 69% recreational and 31% commercial. The sharing for utilized SRW impacts is expected to be 64% recreational and 36% commercial.

White Sturgeon harvest was prohibited effective January 2014 in all Columbia River fisheries downstream of Bonneville Dam, consistent with policies adopted by the Fish and Wildlife Commissions of both Washington and Oregon. Retention fisheries were reinstated in June 2017, beginning with Estuary recreational and Select Area commercial fisheries. Per Commission guidance, White Sturgeon harvest allocations remain at 80% recreational and 20% commercial.

Goals/expectations for the recreational fishery include:

The Buoy 10 fishery began on August 1 with a two fish/one Chinook daily limit through September 4 (Labor Day). Mark-selective Chinook regulations are not anticipated. From September 5-30, Chinook retention is scheduled to be closed. From October 1 through December 31, the daily limit will be two fish/two Chinook. In-season considerations may include the potential to allow some additional Chinook retention during all or part of the scheduled Chinook non-retention period (Sept. 5-30). Any decision to extend the fishery beyond policy objectives will be made in-season, taking into account fishery performance to date. Catch (and release mortality) expectations total 22,100 Chinook (1.6% SRW harvest rate; 4.8% LCR wild ER) and 16,560 Coho (including 1,500 unmarked mortalities).

The mainstem recreational fishery from the Rocky Point/Tongue Point line upstream to Bonneville Dam will be open August 1 through December 31, but Chinook retention seasons and

bag limits vary by river section with the intent of maximizing opportunity (with consideration of policy objectives for the fishery), while minimizing impacts to LCR Chinook. Harvest (including release mortality) expectations include 21,890 adult Chinook (5.4% SRW harvest rate; 1.5% LCR wild ER) and 1,040 adult Coho (including 40 unmarked mortalities).

The following describes the planned season and bag limits by area:

- From the Rocky Point/Tongue Point line upstream to the Lewis River/Warrior Rock line, Chinook retention allowed August 1 through September 7, followed by a Chinook MSF (fin-clip only) from September 8 – 14 per Commission guidance. The area will close for Chinook retention from September 15-30. The daily limit for both fisheries is two fish/one Chinook. Beginning October 1, Chinook retention will reopen with a two fish/two Chinook daily limit. In-season considerations may include the potential for allowing a Chinook MSF during all or part of the scheduled Chinook non-retention period (September 15-30). Any decision to extend the fishery beyond policy objectives will be made in-season and will take into account fishery performance to date.
- From the Lewis River/Warrior Rock line upstream to Bonneville Dam, Chinook retention allowed August 1 through December 31, with a two fish/two Chinook daily limit.

The mainstem recreational fishery from Bonneville Dam to the Highway 395 Bridge in Pasco, Washington began August 1 with a two fish/two Chinook daily limit through December 31. The total catch expectation is nearly 4,080 adult Chinook. A statistical creel program will be used to estimate in-season catch in the fishery.

During all fall fisheries from Buoy 10 upstream to the OR/WA border (upstream of McNary Dam), each legal angler aboard a vessel may continue to deploy angling gear until the daily adult salmonid bag limit for all anglers aboard has been achieved.

Due to low projected steelhead returns, fishery constraints are expected, including:

- June 16 through December 31: Daily bag limit may not include more than one hatchery steelhead.
- June 16 through December 31: Night fishing closures (except for registered anglers fishing for Pikeminnow in the mainstem Columbia).
- Rolling 1-2 month steelhead retention closures for mainstem and some tributary recreational fisheries, including:
 - August: Buoy 10 to The Dalles Dam
 - September: The Dalles Dam to John Day Dam
 - September and October: John Day Dam to McNary Dam
 - October and November: McNary Dam to Hwy 395 Bridge (Pasco)

Goals/expectations for the commercial fishery include:

Due to wild B-Index steelhead limitations, the only fall mainstem commercial fishery currently adopted is the early fall fishery, which began August 22 in Zones 4-5. The fishery is expected to continue through the month, with fishing periods occurring two to three days per week. Fishery structure includes five, 9-hour (9 PM-6 AM) periods in Zones 4-5 with a 9-inch minimum mesh size. Onboard monitoring will occur to verify historical steelhead encounter and immediate mortality rates. The catch expectation is 44,000 adult Chinook (4.0% SRW harvest rate; 2.7% LCR wild ER). Any additional commercial fisheries will be addressed in-season after the fall Chinook and steelhead run-size updates are available (approximately mid-September). Additional fishery constraints include:

- No early August fishery; August fishery focused on optimal Chinook:steelhead timeframe.
- No fishing expected in weeks 36-37.
- Consideration for a 9-inch minimum mesh size fishery during late September (week 38), if late fall fishing occurs.
- No late fall Coho-directed gillnet (6-inch) fishery.

Mainstem commercial fishing seasons and regulations were adopted at the August 16, 2017 Compact Hearing and are available at http://www.dfw.state.or.us/fish/OSCRP/CRM/CAN/17/170816_notice.pdf

Select Area Fisheries

Based on 2017 preseason run size predictions, an estimated 44,400 Select Area Coho are expected to return for harvest in all Select Area fishing sites combined, including 19,600 Coho returning to Youngs Bay, 6,700 to Tongue Point, 5,300 to Blind Slough, and 12,800 to Deep River. SAB Chinook catch is expected to total 7,000 fish in all Select Areas combined and LRH Chinook will also be available for harvest in all sites. Select Area fishery seasons and regulations were adopted at the July 27, 2017 Compact Hearing and are available at http://www.dfw.state.or.us/fish/OSCRP/CRM/CAN/17/170727_notice.pdf.

Treaty Indian Fisheries

Treaty Indian commercial gillnet fisheries have typically occurred from mid to late August through late September or early October, although sales of platform caught fish typically begin August 1, and may extend into late-October, and possibly the end of the year. Fishery restrictions may include mesh size restrictions to target Chinook. Area restrictions to reduce impacts on specific Chinook stocks have occurred in the past, but have not occurred recently, and are not expected in 2017. Coho and steelhead harvest is expected to be similar to recent-year average rates. Sturgeon sales are generally not allowed during fall salmon gillnet fisheries. Sturgeon retention (within a specific size limit) is typically allowed only for subsistence purposes. Fall gillnet fisheries typically consist of 2½ to 4½-day weekly fishery periods. Sales of platform and hook-and-line caught fish, as well as fish caught in Klickitat River and Drano Lake tributary fisheries, are typically allowed throughout the fall period.

For 2017, allowable ESA impact rates (based on preseason forecasts) for treaty fisheries include a limit of 30% on SRW fall Chinook and an ESA limit of 13% on B-Index steelhead, based on pre-season forecasts. Actual allowed harvest rates depend on actual run sizes.

Seasons and regulations for platform/hook-and-line fisheries, including the area downstream of Bonneville Dam were adopted at the July 27, 2017 Compact Hearing and are available at http://www.dfw.state.or.us/fish/OSCRP/CRM/CAN/17/170727_notice.pdf.

Seasons and regulations for the initial three mainstem Treaty gillnet fishing periods, which start August 21, were adopted at the August 16, 2017 Compact Hearing and are available at http://www.dfw.state.or.us/fish/OSCRP/CRM/CAN/17/170816_notice.pdf.

2017 Columbia River Fall Fishery Model Summary

The following table summarizes Chinook catch, ESA-impact, and passage expectations, based on preseason planning.

Columbia River Fall Chinook Fishery Model Summary

Ocean Option:

Alt. 1

Coweeman Cal#2

26-Jul-17

5:57 PM

Columbia River Model Option:

Model

MR2017-Final Preseason

MR2017-Final Preseason

Management Guidelines	/Guideline	SRW	Total URB
Harvest Rate	45.0%	38.69%	38.74%
Non-Indian	15.0%	12.01%	12.08%
Treaty Indian	30.0%	26.68%	26.66%
% of Harvestable Surplus		Total	
Non-Indian	50%	34%	
Treaty Indian	50%	32%	
McNary Escapement	60,000	143,100	
LRH Ocean/Inriver Exp. Rate	41%	36.9%	
Non-Indian Wild B Index Steelhead	2%	1.8%	
Treaty Indian Total B Index Steelhead	13%	13%	
Upriver Coho to Bonneville Dam	50%	76%	
Lower Columbia Chum	5%	1.4%	

Non-Indian Catch Sharing					
SRW - IMPACTS			Brights - Mainstem		
	Impact	Percent		Mortalities	Percent Harvest
Sport	7.69%	64%	Sport	30,900	68% 30,700
Comm	4.32%	36%	Comm	14,600	32% 14,600
LRH - Impacts			Chinook - Mainstem		
	Impact	Percent		Mortalities	Percent Harvest
Sport	6.27%	69%	Sport	48,100	51% 47,900
Comm	2.86%	31%	Comm	45,900	49% 45,900

Available in river 9.13%
Ocean 13.23%
27.77% LRH

			Total	LRH	LRW	BPH	URB	BUB	LRB	PUB	SAB	SRW	LRH ER	SRW HR
Ocean Harvest			101,630	17,510	4,370	40,370	33,460	430	30	5,460				
Columbia River Run			613,840	98,750	13,610	164,390	275,210	3,470	220	44,490	13,700	12,400	9.1%	
Harvest Below Bonneville			Fishery Description											
Wk 32_Aug	0.0 days		Week of Aug 1	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Wk 33_Aug 6,8,10	0.0 days		Week of Aug 7	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Wk 34_Aug 13,15,17	0.0 days		Week of Aug 14	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Wk 35_Aug 20,22, 24	3.0 days		Week of Aug 21	20,870	1,880	40	12,740	5,190	70	880	70	230	1.2%	1.9%
Wk 36_Late late Aug 31	3.0 days		Week of Aug 28	25,030	2,570	0	14,150	6,220	130	1,820	130	280	1.6%	2.3%
Z1-5 L.Sep Chinook	0.0		Week of Sept 25	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Sept Z4-5	0.0		Week of Sept 18	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Oct Z1-5	0.0	* These fisheries will be addressed inseason after CHF/STH run updates are available	Week of Oct 2	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Seine Fishery			Oct.-Nov.	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Oct Coho 6-inch		CHF/STH run updates are available	Week of Oct 10	0	0	0	0	0	0	0	0	0	0.0%	0.0%
October TangleNet			Coho target	0	0	0	0	0	0	0	0	0	0.0%	0.0%
Select Areas			Average season	16,970	8,810	0	570	470	10	90	7,020	20	0.0%	0.2%
Buoy 10 Kept + Morts	2 F Bag		Thru L. Day	22,100	6,390	0	5,450	4,440	50	560	3,440	200	4.8%	1.6%
TP to Lewis	(with 7d MSF)		Thru Sept 14	10,590	1,880	460	820	6,200	40	1,120	60	270	1.2%	2.2%
Lewis to Bonn			Full season	11,300	380	0	500	8,810	100	1,510	0	400	0.3%	3.2%
Tributary Sport			Full season	8,330	6,780	1,540	0	0	0	0	0	0	0.0%	0.0%
Lower River Total			115,190	28,680	2,050	34,240	31,330	390	30	5,980	10,710	1,400	9.1%	11.31%
Bonneville Dam Passage			403,640			123,410	243,870	850		35,500		11,000		
Harvest Above Bonneville														
Zone 6 - Bonn to Hwy 395			Average season	4,080			1,920	0		2,170		90		0.7%
Treaty Comm. and C&S			Average season	145,060		32,500	73,360	920		38,280		3,310		26.7%
Hanford Reach Sport			Average season	10,060			10,060					0		
McNary Dam Passage			143,110				143,110							
Lower Granite Dam Passage														
Escapement				70,070		90,910		2,230		-4,950	2,990			
Hatchery				38,870		67,630		2,070		-3,360	1,720			
Natural				31,200	11,560	23,290	143,110	160	190	-3,190	1,260			
Hatchery Surplus				23,950		60,630		2,070		-3,760	820			
Natural Surplus					4,090		83,110							

Table 1. Federally-listed species found in Columbia River fishery management areas.

Species – ESU/DPS ¹	Current Designation	Listing Date	Effective Date
<u>Chinook</u>			
Snake River Fall	Threatened	22-Apr-92	22-May-92
Snake River Spring/Summer	Threatened	22-Apr-92	22-May-92
Upper Columbia Spring	Endangered	24-Mar-99	24-May-99
Upper Columbia Summer/Fall	Not warranted	--	--
Middle Columbia Spring	Not warranted	--	--
Lower Columbia River Spring/Fall	Threatened	24-Mar-99	24-May-99
Upper Willamette Spring	Threatened	24-Mar-99	24-May-99
Deschutes River Summer/Fall	Not warranted	--	--
<u>Steelhead</u>			
Snake River Basin	Threatened	18-Aug-97	17-Oct-97
Upper Columbia River ²	Threatened	18-Aug-97	17-Oct-97
Lower Columbia River	Threatened	19-Mar-98	18-May-98
Middle Columbia River	Threatened	25-Mar-99	24-May-99
Southwest Washington	Not warranted	--	--
Upper Willamette	Threatened	25-Mar-99	24-May-99
<u>Sockeye</u>			
Snake River	Endangered	20-Nov-91	20-Dec-91
Okanogan River	Not warranted	--	--
Lake Wenatchee	Not warranted	--	--
<u>Chum</u> – Columbia River	Threatened	25-Mar-99	24-May-99
<u>Coho</u> – Columbia River	Threatened	28-Jun-05	26-Aug-05
<u>Green Sturgeon</u>- Southern DPS	Threatened	7-Apr-06	7-Jul-06
<u>Eulachon</u> - Southern DPS	Threatened	17-Mar-10	17-May-10

^{1.} The ESU/DPSs in bold are present in the Columbia River basin during the time when fisheries described in this report occur, and therefore may be impacted by these fisheries.

^{2.} Status downgraded to threatened per U.S. District Court order in June, 2009.

Table 2. Columbia River fall salmonid returns, forecasts and actual, 2016-2017¹.

			2016		2017
			Forecast	Return	Forecast
Fall Chinook	LRH - Lower River	Hatch.	142,500	81,500	98,800
	LRW - Lower River	Wild	22,400	12,300	13,600
	BPH - Bonneville Pool	Hatch.	100,700	41,300	164,400
	URB - Upriver Bright		579,600	412,900	275,200
	<i>Snake River Wild</i>	<i>Wild</i>	<i>19,700</i>	<i>14,500</i>	<i>12,400</i>
	BUB - Bonn. Upr. Br.	Hatch.	21,300	9,600	3,500
	LRB - L. River Brights	Wild	1,300	11,000	200
	PUB - Pool Upr. Br.	Hatch.	76,400	67,200	44,500
	SAB - Select Area Br.	Hatch.	15,800	6,700	13,700
	Total Fall Chinook		960,200	642,500	613,800
Coho	Early stock		132,900	116,800	196,800
	Late stock		189,700	79,500	122,500
	Total Coho		322,600	196,300	319,300
Upriver Summer Steelhead (to Bonneville Dam)	Upriver Skamania Index	Total	9,200	12,238	11,300
		<i>Wild</i>	<i>3,400</i>	<i>4,436</i>	<i>4,100</i>
	A-Index	Total	230,400	128,890	112,100
		<i>Wild</i>	<i>89,100</i>	<i>29,146</i>	<i>33,000</i>
	B-Index	Total	25,800	42,916	7,300
		<i>Wild</i>	<i>7,400</i>	<i>3,469</i>	<i>1,100</i>
	Total Upriver Steelhead	Total	265,400	184,044	130,700
		<i>Wild</i>	<i>99,900</i>	<i>37,051</i>	<i>38,200</i>

¹. Columbia River mouth return, except summer steelhead is Bonneville Dam return. Numbers may not sum due to rounding.

Table 3. Stock accountability of adult fall Chinook returning to the Columbia River, 1980-2016.^{1,2}

Return Year	LRH	LRW	BPH	URB	BUB	LRB ³	PUB	SAB	Total Return
80-84 Ave	106,100	21,400	76,200	88,000	3,900		4,000		299,600
1985	111,000	13,300	33,200	196,400	5,700		3,100	1,600	364,300
1986	154,800	24,500	16,600	281,600	14,200		3,200	2,000	496,900
1987	344,000	37,900	9,100	420,700	25,800		31,200	2,300	871,000
1988	309,900	41,700	12,000	339,900	41,900		36,100	3,200	784,700
1989	130,900	38,600	26,800	261,300	65,200		27,900	1,200	551,900
1990	60,000	20,300	18,900	153,600	38,100		20,800	1,100	312,800
1991	62,700	19,800	52,400	103,300	23,800		11,600	2,000	275,600
1992	62,600	12,500	29,500	81,000	20,400		10,700	2,300	219,000
1993	52,300	13,300	16,800	102,900	18,100		9,400	2,100	214,900
1994	53,600	12,200	18,500	132,800	16,600		17,100	3,200	254,000
1995	46,300	16,000	33,800	106,500	14,900		19,300	6,000	242,800
1996	75,500	14,600	33,100	143,100	27,200		32,500	4,700	330,700
1997	57,400	12,300	27,300	161,700	28,700		30,300	3,800	321,500
1998	45,300	7,300	20,200	141,600	8,000	500	28,800	3,300	255,000
1999	39,900	3,300	50,200	165,900	13,700	900	36,200	2,900	313,000
2000	27,000	10,200	20,500	156,600	11,900	700	24,600	3,500	255,000
2001	94,300	15,700	125,000	232,400	42,200	800	33,500	4,900	548,800
2002	156,400	25,200	158,300	279,500	58,300	1,800	48,100	5,700	733,300
2003	154,500	25,400	180,600	374,200	80,600	2,100	67,400	8,100	892,900
2004	109,000	21,100	175,200	362,800	53,300	2,100	67,100	7,100	797,700
2005	79,400	16,300	103,500	277,200	51,400	1,200	47,000	6,600	582,600
2006	57,300	12,600	27,900	230,400	41,600	3,600	35,200	7,200	415,800
2007	32,700	4,900	14,500	114,000	23,500	700	23,400	6,500	220,200
2008	61,600	7,800	93,800	197,300	40,800	2,500	33,000	12,900	449,700
2009	76,600	8,400	49,000	212,100	38,000	900	34,100	10,600	429,700
2010	103,300	11,500	128,600	324,900	28,800	600	49,600	8,600	655,900
2011	109,100	15,400	70,500	322,100	26,600	1,900	58,700	16,400	620,700
2012	85,000	12,100	56,900	297,800	11,600	500	49,300	11,900	525,100
2013	104,800	25,800	86,700	778,300	33,900	1,700	214,000	23,400	1,268,600
2014	101,900	25,800	127,000	684,200	31,600	2,300	169,900	16,500	1,159,200
2015	128,900	32,400	166,500	795,700	35,900	3,400	131,400	11,400	1,305,600
2016	81,500	12,300	41,300	412,900	9,600	11,000	67,200	6,700	642,600

^{1.} Numbers may not sum due to rounding.

^{2.} The sum of the BUB, LRB, and PUB stocks represent the aggregate mid-Columbia Bright (MCB) stock.

^{3.} LRBs included in BUB stock until 1998 when LRBs designated as a separate stock from BUBs.

Table 4. Predicted and actual returns to the Columbia River of adult fall Chinook, 2011-2016.¹

Stock	Year	Preseason Forecast	Actual Return	Percent of Forecast
Lower River Hatchery (LRH)	2011	128.6	109.0	85%
	2012	128.4	85.0	66%
	2013	86.9	104.8	121%
	2014	100.7	101.9	101%
	2015	96.8	128.7	133%
	2016	142.5	81.5	57%
Lower River Wild (LRW)	2011	13.1	15.2	116%
	2012	16.2	12.1	75%
	2013	14.3	25.8	180%
	2014	33.4	25.8	77%
	2015	19.3	32.4	168%
	2016	22.4	12.3	55%
Bonneville Pool Hatchery (BPH)	2011	116.4	70.6	61%
	2012	60.0	56.9	95%
	2013	36.3	86.7	239%
	2014	103.2	127.0	123%
	2015	163.9	166.4	102%
	2016	100.7	41.3	41%
Upriver Bright (URB)	2011	399.6	322.2	81%
	2012	353.0	295.9	84%
	2013	434.6	784.3	180%
	2014	919.0	684.2	74%
	2015	518.3	795.9	154%
	2016	579.7	412.9	71%
Mid-Columbia Bright (MCB)	2011	100.3	87.3	87%
	2012	90.7	63.4	70%
	2013	97.6	243.4	249%
	2014	344.2	203.8	59%
	2015	114.7	170.6	149%
	2016	99.1	87.8	89%
Select Area Bright (SAB)	2011	8.3	16.4	198%
	2012	6.6	11.9	180%
	2013	8.9	23.3	262%
	2014	10.1	16.5	163%
	2015	12.2	11.4	93%
	2016	15.8	6.7	42%
Columbia River Total	2011	766.3	620.6	81%
	2012	654.9	525.2	80%
	2013	678.6	1,268.4	187%
	2014	1,510.6	1,159.1	77%
	2015	925.3	1,305.4	141%
	2016	960.2	642.4	67%

¹. Numbers may not sum due to rounding. Reported in thousands of fish.

Table 5. Estimated Columbia River return of Snake River wild fall Chinook adults, 1986-2016.

Year	Columbia River Return	Non- Indian Zone 1-5 Harvest	Bonneville Dam Count	Treaty Zone 6 Harvest	Non-Indian Above BON Harvest	Lower Granite Run Size ¹
1986	2,830	652	2,178	723	12	449
1987	1,783	491	1,292	379	2	253
1988	3,558	944	2,614	965	7	368
1989	1,981	373	1,608	608	8	295
1990	508	71	437	169	2	78
1991	1,846	275	1,571	379	17	318
1992	1,289	112	1,178	202	6	549
1993	1,475	107	1,368	270	11	742
1994	958	0	958	173	1	406
1995	1,296	10	1,286	225	9	350
1996	1,729	95	1,634	350	3	639
1997	1,839	99	1,740	459	7	797
1998	730	21	709	165	4	306
1999	2,395	163	2,232	515	11	905
2000	2,612	179	2,432	520	9	1,148
2001	14,133	778	13,355	2,020	63	5,163
2002	3,665	250	3,416	709	11	2,116
2003	8,093	675	7,417	953	33	4,257
2004	8,174	706	7,467	877	21	3,329
2005	9,500	779	8,721	1,434	49	5,177
2006	12,202	928	11,274	2,136	34	4,669
2007	9,878	567	9,311	1,492	64	3,742
2008	8,738	622	8,115	1,615	30	3,930
2009	15,576	1,568	14,008	3,831	53	4,977
2010	12,855	971	11,884	2,141	34	7,995
2011	17,156	2,228	14,928	2,918	53	8,778
2012	19,360	2,641	16,719	3,433	61	12,797
2013	34,669	3,462	31,208	6,429	141	21,124
2014	20,752	2,484	18,268	4,096	32	14,172
2015	24,054	2,530	21,523	4,319	87	16,212
2016	14,493	2,023	12,568	2,907	96	9,656

¹. Includes release mortalities.

². Recent year harvest data for non-treaty recreational fisheries upstream of Bonneville Dam considered preliminary until catch record card data is finalized.

Table 6. Returns of upriver summer steelhead to Bonneville Dam (April- October), 1984-2016.

Year	Skamania Index		A-Index				B-Index				Total Passage		
	Wild	Total	Clipped Hatchery	Unclipped Hatchery	Wild	Total	Clipped Hatchery	Unclipped Hatchery	Wild	Total	Hatchery	Wild	Total
1984	2,490	20,780	-	-	52,447	195,751	-	-	13,768	98,011	245,837	68,705	314,542
1985	3,690	19,990	-	-	51,922	281,504	-	-	12,986	40,870	273,766	68,598	342,364
1986	5,520	24,830	-	-	56,570	287,508	-	-	9,984	64,016	304,280	72,074	376,353
1987	7,380	17,790	-	-	106,690	238,283	-	-	13,990	44,959	172,972	128,060	301,032
1988	4,180	22,360	-	-	64,331	173,151	-	-	17,742	81,643	190,901	86,253	277,154
1989	3,770	15,730	-	-	57,513	193,079	-	-	12,367	77,604	212,763	73,650	286,413
1990	3,690	18,710	-	-	27,102	115,628	-	-	8,811	47,174	141,909	39,603	181,512
1991	1,220	10,880	-	-	60,264	234,048	-	-	6,207	28,265	205,502	67,692	273,193
1992	2,940	14,910	-	-	44,294	241,524	-	-	12,715	57,438	253,923	59,948	313,872
1993	1,250	14,360	-	-	28,650	136,701	-	-	4,378	36,169	152,952	34,278	187,230
1994	1,380	12,330	-	-	21,212	120,971	-	-	5,152	27,463	133,020	27,744	160,764
1995	1,150	8,220	-	-	25,997	180,037	-	-	1,847	13,221	172,484	28,994	201,478
1996	1,310	10,830	-	-	25,721	174,464	-	-	3,912	18,693	173,044	30,943	203,987
1997	930	11,890	-	-	30,852	208,209	-	-	3,913	36,663	221,067	35,695	256,762
1998	1,610	9,440	-	-	34,836	134,687	-	-	3,415	40,241	144,507	39,861	184,368
1999	1,310	7,160	-	-	56,626	176,466	-	-	3,740	22,137	144,087	61,676	205,763
2000	5,728	16,619	-	-	63,628	216,723	-	-	8,368	40,909	196,527	77,724	274,251
2001	7,952	28,725	-	-	137,230	515,079	-	-	12,047	86,426	473,001	157,229	630,230
2002	9,671	24,991	-	-	87,276	323,124	-	-	32,333	129,882	348,717	129,280	477,997
2003	1,801	14,154	-	-	67,049	305,795	-	-	6,417	37,228	281,910	75,268	357,177
2004	3,289	20,148	-	-	60,421	250,615	-	-	9,202	37,398	235,249	72,912	308,161
2005	2,123	11,221	-	-	58,917	251,631	-	-	9,619	48,968	241,161	70,659	311,820
2006	2,181	9,882	-	-	63,735	245,168	-	-	8,466	74,128	254,796	74,382	329,178
2007	1,727	9,475	-	-	77,268	258,848	-	-	9,015	51,073	231,386	88,010	319,396
2008	4,489	15,832	-	-	81,648	245,823	-	-	18,529	93,429	250,418	104,666	355,084
2009	3,528	13,884	-	-	154,045	543,195	-	-	13,727	44,540	430,319	171,300	601,619
2010	10,357	29,270	-	-	120,531	304,002	-	-	22,364	77,146	257,166	153,252	410,418
2011	2,814	9,750	-	-	101,263	318,125	-	-	7,771	36,996	253,023	111,848	364,871
2012	3,023	3,023	-	-	55,464	192,134	-	-	6,813	27,723	165,515	65,300	222,880
2013	1,661	5,738	-	-	90,496	214,074	-	-	2,907	11,511	136,259	95,064	231,323
2014	4,782	13,525	-	-	109,279	260,130	-	-	13,341	47,057	193,310	127,402	320,712
2015	3,664	8,131	-	-	84,896	234,382	-	-	5,842	18,848	166,959	94,402	261,361
2016	4,436	12,238	92,225	7,519	29,146	128,890	33,839	5,608	3,469	42,916	146,993	37,051	184,044

Table 7. Returns of upriver summer steelhead to Lower Granite Dam, 1991-2016.^{1,2}

Run Year ³	<u>Group A</u>			<u>Group B</u>			<u>Total</u>		
	Hatchery	Wild	Total	Hatchery	Wild	Total	Hatchery	Wild	Total
1991-92	69,885	14,135	84,020	11,883	3,182	15,065	81,768	17,317	99,085
1992-93	83,420	13,617	97,037	25,566	5,777	31,343	108,986	19,394	128,380
1993-94	34,657	7,332	41,989	15,895	1,790	17,685	50,552	9,122	59,674
1994-95	31,956	5,873	37,829	7,178	2,231	9,409	39,134	8,104	47,238
1995-96	62,773	6,721	69,494	8,317	1,334	9,651	71,090	8,055	79,145
1996-97	67,075	5,980	73,055	12,211	1,645	13,856	79,286	7,625	86,911
1997-98	67,019	7,424	74,443	10,878	1,325	12,203	77,897	8,749	86,646
1998-99	43,832	7,074	50,906	17,455	2,301	19,756	61,287	9,375	70,662
1999-00	54,119	10,184	64,303	8,834	914	9,748	62,953	11,098	74,051
2000-01	79,599	17,689	97,288	17,128	2,886	20,014	96,727	20,575	117,302
2001-02	197,070	37,545	234,615	30,677	3,174	33,851	227,747	40,719	268,466
2002-03	122,269	28,308	150,577	57,976	13,623	71,599	180,245	41,931	222,176
2003-04	118,174	21,892	140,066	25,190	7,254	32,444	143,364	29,146	172,510
2004-05	103,391	18,297	121,688	25,184	4,774	29,958	128,575	23,071	151,646
2005-06	110,547	14,586	125,133	29,488	3,544	33,032	140,035	18,130	158,165
2006-07	100,444	7,877	108,321	39,212	1,633	40,845	139,656	9,510	149,166
2007-08	117,017	11,242	128,259	23,959	2,924	26,883	140,976	14,166	155,142
2008-09	107,283	18,217	125,500	47,711	5,659	53,370	154,994	23,876	178,870
2009-10	261,388	38,210	299,598	19,255	4,529	23,784	280,643	42,739	323,382
2010-11	128,471	34,549	163,020	35,692	9,584	45,276	164,163	44,133	208,296
2011-12	120,967	35,241	156,208	19,914	4,198	24,112	140,881	39,439	180,320
2012-13	68,378	19,806	88,184	17,665	3,337	21,002	86,043	23,143	109,186
2013-14	75,660	23,469	99,129	7,139	1,886	9,025	82,799	25,355	108,154
2014-15	93,460	39,286	132,746	22,900	8,822	31,722	116,360	48,108	164,468
2015-16	90,570	32,497	123,067	8,803	4,279	13,082	99,373	36,776	136,149
	Clipped Hatchery	Unclipped Hatchery	Wild	Total	Clipped Hatchery	Unclipped Hatchery	Wild	Total	
2016-17 ⁴	52,932	1,791	14,018	68,741	26,100	1,374	5,633	33,107	79,032 3,165 19,651 101,848

^{1.} Counts adjusted based on biological sampling at Lower Granite Dam.

^{2.} Hatchery-origin includes fish with clipped and unclipped adipose fins through 2015-16 run year.

^{3.} Run year is July 1 to June 30 the following year.

^{4.} Preliminary estimates based on visual sampling at Lower Granite Dam. Final estimates based on genetic analysis in December, 2017.

Table 8. Adult Coho returns to the Columbia River, 1980-2016.¹

	Lower Columbia River									
	Harvest					Hatchery Returns	Natural Escapement	Tributary Dam Count ⁷	Bonneville Dam Count	Minimum Run ⁸
	Commercial ^{2,3,4}		Recreational ^{5,6}							
Year	Zones 1-5	SAFE	Estuary	Mainstem	Tributary					
1980-84 ave	108.7	15.4	32.3	0.2	11.3	106.4		4.1	26.8	292.2
1985-89 ave	377.7	39.3	84.1	1.3	12.6	148.9	17.9	6.9	51.7	736.9
1990	47.6	18.6	18.5	0.4	9.7	88.8	10.8	2.0	11.6	208.0
1991	327.1	80.4	209.5	1.1	29.4	243.3	26.4	5.5	58.9	981.5
1992	38.2	15.8	43.1	0.6	8.4	86.9	9.4	5.2	17.8	225.4
1993	20.7	15.0	20.9	0.6	6.3	39.4	3.7	0.8	10.6	117.9
1994	6.0	54.6	1.8	0.9	3.4	78.0	4.2	4.1	20.3	173.4
1995	0.2	21.2	5.0	0.2	2.7	32.2	2.5	2.9	10.4	77.4
1996	5.8	20.4	4.5	0.3	3.6	62.2	4.1	0.6	15.7	117.1
1997	3.8	16.7	20.4	0.8	10.8	69.7	7.1	2.8	24.3	156.4
1998	0.3	22.8	3.2	3.7	3.0	87.9	7.5	1.3	46.3	175.9
1999	57.6	21.5	9.0	1.3	18.6	124.5	14.9	1.0	40.7	289.1
2000	110.2	58.2	21.5	1.6	36.1	228.6	10.3	6.2	85.6	558.3
2001	218.7	33.7	132.0	3.1	74.9	377.3	21.0	8.2	259.5	1128.3
2002	94.9	68.1	6.2	3.0	24.4	211.1	36.4	3.7	88.1	535.8
2003	143.8	113.5	54.4	1.1	22.5	205.4	35.4	11.4	125.7	713.2
2004	66.6	53.0	15.2	1.3	12.3	173.5	21.0	5.7	115.0	463.5
2005	30.3	64.5	6.9	0.6	9.9	142.3	13.7	3.3	83.3	354.7
2006	27.2	36.2	3.7	1.2	15.3	191.1	23.8	9.5	101.7	409.7
2007	30.2	10.1	8.4	0.9	23.3	161.0	15.3	10.6	89.2	349.0
2008	13.1	47.3	8.6	2.2	40.8	240.9	26.2	6.2	135.5	520.8
2009	43.8	80.4	48.1	4.0	36.5	260.4	29.7	32.3	224.9	760.2
2010	18.9	57.4	8.0	1.6	22.4	189.3	30.8	22.3	120.7	471.3
2011	13.5	48.8	7.6	1.7	16.4	108.3	25.2	8.7	146.5	376.5
2012	2.6	14.5	7.4	0.9	3.8	41.9	8.8	9.1	55.0	143.9
2013	9.8	38.6	7.6	1.0	9.7	81.9	11.2	21.6	59.6	241.0
2014	70.4	166.9	57.7	5.8	38.3	293.2	25.7	32.2	279.7	970.0
2015	4.8	26.6	36.9	1.0	4.9	44.1	11.2	4.5	37.4	171.4
2016	1.1	30.3	9.2	1.3	11.3	84.1	12.2	4.8	42.0	196.3

¹ Reported in thousands of fish² Landings since 2003 are preliminary.³ Zones 1-5 (Mainstem) includes jacks.⁴ Jacks landed in SAFE fisheries are not included (except for 1985 and 1986).⁵ Estuary (Buoy 10) fishery. Catch from this fishery prior to 1982 is included in ocean catch totals. Some non-Columbia River fish are caught in the estuary fishery and are included here.⁶ Mainstem (LCR) includes catch from above Astoria-Megler Bridge through 1999 and catch from above Tongue Point/Rocky Point thereafter.⁷ Includes Willamette Falls (Willamette River), North Fork Dam (Clackamas River), and Marmot Dam (Sandy River). No Marmot Dam counts after dam removal in 2007.⁸ May not match totals found in other sections of this report due to rounding

Table 9. Early stock adult Coho returns to the Columbia River, 1980-2016.¹

	Lower Columbia River									
	Harvest					Hatchery Returns	Natural Escapement	Tributary Dam Count ⁷	Bonneville Dam Count	Minimum Run ⁸
	Commercial ^{2,3,4}		Recreational ^{5,6}							
Year	Zones 1-5	SAFE	Estuary	Mainstem	Tributary					
1980-84 ave	35.2	15.4	20.2	0.2	6.3	63.7		2.8	21.9	157.6
1985-89 ave	126.3	39.3	52.0	1.0	6.8	78.8	6.3	5.5	45.6	360.3
1990	19.7	18.6	12.6	0.3	6.3	41.1	3.8	1.7	8.7	112.8
1991	122.8	80.4	143.3	0.8	15.1	107.2	9.2	4.3	43.2	526.3
1992	3.6	15.8	29.1	0.5	4.1	44.4	3.3	3.4	11.0	115.3
1993	5.9	15.0	16.5	0.5	2.9	22.9	1.3	0.7	8.0	73.7
1994	3.6	54.6	1.4	0.8	2.2	59.6	1.5	3.3	12.5	139.6
1995	0.0	21.2	4.9	0.2	1.6	20.4	0.9	2.3	6.9	58.4
1996	1.7	20.4	3.9	0.2	2.1	44.3	1.4	0.6	8.9	83.6
1997	1.5	16.7	19.3	0.8	6.4	39.1	2.5	2.8	18.4	107.3
1998	0.0	22.8	3.0	3.6	0.7	55.3	2.6	1.0	34.2	123.2
1999	14.0	21.5	7.8	0.9	11.1	60.0	5.2	1.0	32.9	154.4
2000	20.2	58.2	18.7	1.0	26.4	137.2	3.8	5.5	58.9	330.0
2001	67.8	33.7	114.9	2.6	40.1	200.9	7.8	6.3	225.4	699.3
2002	48.1	68.1	5.4	1.1	18.2	101.1	13.4	3.3	50.4	309.0
2003	71.2	113.5	47.4	0.8	18.0	141.3	13.4	10.8	93.8	510.2
2004	16.6	53.0	13.2	0.8	10.0	109.7	8.4	5.0	85.6	302.3
2005	14.3	63.5	6.0	0.3	7.5	88.0	5.5	2.9	63.6	251.7
2006	9.3	36.2	3.2	0.6	10.7	99.7	10.5	8.3	65.4	243.8
2007	7.9	10.1	7.3	0.5	17.1	99.6	6.2	9.7	62.2	220.6
2008	4.4	47.3	7.5	1.3	26.6	131.3	10.4	6.1	85.0	319.8
2009	20.7	80.4	41.9	2.1	20.9	144.7	12.4	31.0	135.6	489.8
2010	3.0	57.4	6.9	0.7	11.3	75.4	13.9	21.8	56.2	246.6
2011	6.2	48.8	6.6	0.9	5.6	48.1	10.3	8.3	117.7	252.6
2012	0.8	14.5	6.4	0.5	1.5	22.1	4.0	9.0	41.1	99.9
2013	3.6	38.6	6.6	0.6	3.0	42.6	5.1	20.4	33.0	153.7
2014	18.2	166.9	50.2	2.5	12.2	128.8	12.7	30.9	181.5	603.9
2015	1.4	26.6	32.1	0.5	1.4	19.9	4.5	4.3	26.9	117.6
2016	0.9	30.3	8.0	0.7	4.1	34.0	5.7	4.3	28.9	116.8

¹ Reported in thousands of fish

² Landings since 2003 are preliminary.

³ Zones 1-5 (Mainstem) includes jacks.

⁴ Jacks landed in SAFE fisheries are not included (except for 1985 and 1986).

⁵ Estuary (Buoy 10) fishery. Catch from this fishery prior to 1982 is included in ocean catch totals. Some non-Columbia River fish are caught in the estuary fishery and are included here.

⁶ Mainstem (LCR) includes catch from above Astoria-Megler Bridge through 1999 and catch from above Tongue Point/Rocky Point thereafter.

⁷ Includes Willamette Falls (Willamette River), North Fork Dam (Clackamas River), and Marmot Dam (Sandy River). No Marmot Dam counts after dam removal in 2007.

⁸ May not match totals found in other sections of this report due to rounding

Table 10. Late stock adult Coho returns to the Columbia River, 1980-2016.¹

Year	Lower Columbia River								Bonneville Dam Count	Minimum Run ⁸
	Harvest					Hatchery Returns	Natural Escapement	Tributary Dam Count ⁷		
	Commercial ^{2,3,4}		Recreational ^{5,6}							
	Zones 1-5	SAFE	Estuary	Mainstem	Tributary					
1980-84 ave	73.4	0.0	12.1	0.0	5.0	42.7		1.3	4.8	134.6
1985-89 ave	251.4	0.0	32.1	0.4	5.8	70.2	11.6	1.4	6.0	376.6
1990	27.9	0.0	5.9	0.0	3.5	47.7	7.0	0.3	2.9	95.2
1991	204.3	0.0	66.2	0.3	14.3	136.1	17.1	1.3	15.6	455.2
1992	34.7	0.0	14.0	0.0	4.3	42.5	6.1	1.8	6.8	110.2
1993	14.8	0.0	4.4	0.1	3.4	16.5	2.4	0.1	2.7	44.3
1994	2.4	0.0	0.4	0.1	1.2	18.4	2.7	0.9	7.7	33.8
1995	0.2	0.0	0.2	0.0	1.1	11.8	1.7	0.6	3.5	19.0
1996	4.0	0.0	0.6	0.0	1.4	17.9	2.7	0.0	6.8	33.5
1997	2.3	0.0	1.0	0.0	4.4	30.7	4.6	0.0	6.0	49.0
1998	0.2	0.0	0.2	0.2	2.3	32.6	4.9	0.2	12.1	52.7
1999	43.6	0.0	1.2	0.4	7.5	64.5	9.7	0.1	7.8	134.7
2000	89.9	0.0	2.8	0.6	9.8	91.5	6.5	0.6	26.7	228.4
2001	150.9	0.0	17.2	0.5	34.8	176.4	13.2	1.9	34.2	429.1
2002	46.8	0.0	0.8	2.0	6.2	110.0	23.0	0.4	37.7	226.9
2003	72.5	0.0	7.1	0.4	4.4	64.1	22.0	0.6	31.9	203.0
2004	50.0	0.0	2.0	0.5	2.3	63.8	12.6	0.6	29.5	161.2
2005	15.9	1.0	0.9	0.3	2.4	54.2	8.3	0.3	19.7	103.0
2006	18.0	0.0	0.5	0.6	4.6	91.4	13.3	1.2	36.3	165.9
2007	22.3	0.0	1.1	0.3	6.2	61.4	9.1	0.8	27.1	128.4
2008	8.7	0.0	1.1	1.0	14.2	109.6	15.8	0.1	50.5	200.9
2009	23.1	0.0	6.3	1.8	15.7	115.8	17.3	1.2	89.3	270.4
2010	15.9	0.0	1.0	0.9	11.1	113.8	16.9	0.6	64.5	224.7
2011	7.3	0.0	1.0	0.8	10.8	60.1	14.8	0.4	28.8	124.0
2012	1.8	0.0	1.0	0.4	2.3	19.9	4.8	0.1	13.9	44.0
2013	6.1	0.0	1.0	0.3	6.7	39.3	6.1	1.2	26.6	87.3
2014	52.2	0.0	7.5	3.3	26.1	164.5	12.9	1.3	98.2	366.0
2015	3.3	0.0	4.8	0.5	3.5	24.2	6.8	0.2	10.5	53.8
2016	0.3	0.0	1.2	0.7	7.2	50.1	6.5	0.5	13.1	79.5

¹ Reported in thousands of fish

² Landings since 2003 are preliminary.

³ Zones 1-5 (Mainstem) includes jacks.

⁴ Jacks landed in SAFE fisheries are not included (except for 1985 and 1986).

⁵ Estuary (Buoy 10) fishery. Catch from this fishery prior to 1982 is included in ocean catch totals. Some non-Columbia River fish are caught in the estuary fishery and are included here.

⁶ Mainstem (LCR) includes catch from above Astoria-Megler Bridge through 1999 and catch from above Tongue Point/Rocky Point thereafter.

⁷ Includes Willamette Falls (Willamette River), North Fork Dam (Clackamas River), and Marmot Dam (Sandy River). No Marmot Dam counts after dam removal in 2007.

⁸ May not match totals found in other sections of this report due to rounding

Table 11. Lower Columbia River Coho natural spawner estimates in Oregon and Washington tributaries, 2010-2015.¹

	2010			2011			2012		
Population	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked
Youngs Bay	174	68	39%	476	161	34%	241	129	54%
Big Creek	401	279	70%	333	160	48%	521	409	79%
Clatskanie	1,734	1,686	97%	1,553	1,546	100%	696	619	89%
Scappoose	1,960	1,960	100%	298	298	100%	210	210	100%
Clackamas	4,040	1,757	43%	2,498	2,254	90%	1,755	1,580	90%
Sandy	1,029	901	88%	3,813	3,494	92%	1,198	1,165	97%
Lower Gorge-Oregon	985	920	93%	471	216	46%	220	96	44%
Upper Gorge/Hood	1,521	223	15%	743	232	31%	759	169	22%
Grays/Chinook	2,005	388	19%	4,771	152	3%	1,023	795	78%
Elochoman/Skamokawa	3,093	834	27%	1,946	851	44%	708	505	71%
MAG	1,903	1,671	88%	1,023	807	79%	595	585	98%
L. Cowlitz (tribs. only)	7,383	6,274	85%	3,706	3,394	92%	NA	NA	
Coweman	3,916	3,528	90%	2,582	2,436	94%	3,105	2,964	95%
Toutle/Green	3,642	1,454	40%	526	365	69%	1,877	1,425	76%
SF Toutle	1,920	1,518	79%	631	490	78%	2,409	2,063	86%
Upper Cowlitz/Cispus	21,746	2,906	13%	20,745	7,875	38%	6,832	1,689	25%
Tilton	4,624	929	20%	8,216	2,025	25%	6,222	1,301	21%
Kalama ²	488	5	1%	NA	NA		320	69	21%
NF Lewis (Cedar Ck) ³	705	700	99%	620	604	97%	440	418	95%
EF Lewis	2,014	1,363	68%	1,091	1,025	94%	4,060	3,681	91%
Salmon Creek	NA	NA		1,562	1,248	80%	2,434	1,897	78%
Washougal	1,426	795	56%	609	562	92%	612	531	87%
Lower Gorge-Washington ⁴	545	385	71%	577	504	87%	654	524	80%
	2013			2014			2015		
Population	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked
Youngs Bay	NA	NA		NA	NA		NA	NA	
Big Creek	NA	NA		NA	NA		NA	NA	
Clatskanie	685	611	89%	3,397	3,246	96%	249	240	96%
Scappoose	979	979	100%	1,587	1,587	100%	487	487	100%
Clackamas	3,252	3,202	98%	12,444	10,670	86%	2,014	1,784	89%
Sandy	756	667	88%	6,111	5,942	97%	464	443	95%
Lower Gorge-Oregon	161	151	94%	739	362	49%	48	30	63%
Upper Gorge/Hood	1,599	561	35%	174	42	24%	11	4	36%
Grays/Chinook	3,415	1,212	35%	5,469	3,700	68%	430	86	20%
Elochoman/Skamokawa	1,262	721	57%	6,320	4,158	66%	336	168	50%
MAG	689	634	92%	2,551	2,239	88%	NA	NA	
L. Cowlitz (tribs. only)	1,585	1,565	99%	13,288	12,661	95%	5,587	5,132	92%
Coweman	4,700	4,047	86%	6,035	5,021	83%	1,023	767	75%
Toutle/Green	3,947	3,213	81%	9,025	6,255	69%	2,173	781	36%
SF Toutle	3,907	3,349	86%	13,536	10,960	81%	3,278	1,537	47%
Upper Cowlitz/Cispus	7,945	4	0%	32,070	6,923	22%	1,390	378	27%
Tilton	8,365	2,744	33%	14,973	9,074	61%	3,382	1,396	41%
Kalama ²	384	64	17%	1,066	99	9%	181	18	10%
NF Lewis (Cedar Ck) ³	2,083	1,339	64%	1,953	1,360	70%	356	267	75%
EF Lewis	3,558	3,251	91%	3,164	2,531	80%	467	389	83%
Salmon Creek	2,693	2,693	100%	4,257	4,257	100%	1,348	1,348	100%
Washougal	879	604	69%	2,119	737	35%	304	101	33%
Lower Gorge-Washington ⁴	1,432	1,125	79%	1,083	704	65%	731	650	89%

¹ Proportion unmarked does not include substantial numbers of unmarked adults from RSI programs in the Lower Cowlitz, NF Lewis, and Salmon Creek population

² in 2011—No carcass recoveries to determine proportion marked.


³ In 2010—does not include mainstem NF Lewis; only tributaries.

⁴ Includes Hamilton, Hardy and Duncan creeks.

Table 12. Columbia River Chum abundance in select Washington tributaries, 2005-2016.

Location	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 prelim	2016 prelim
Crazy Johnson Creek	1,418	3,819	870	1,093	996	865	2,304	3,475	1,925	1,541	4,193	5,987
WF Grays River	1,407	1,377	1,902	793	1,130	1,814	5,996	2,817	1,857	1,145	6,297	19,023
Mainstem Grays River	1,379	1,510	1,227	721	750	3,701	2,509	1,717	1,352	2,107	1,091	6,129
Grays R. broodstock take	132	119	135	88	107	288	294	220	250	246	128	128
I-205 area	923	869	576	644	1,154	2,148	4,912	2,586	1,466	1,472	4,757	5,245
Multnomah area	214	321	148	31	106	458	647	120	222	334	1,142	1,162
St Cloud area	97	180	3	1	29	126	343	1	84	85	344	242
Horsetail area	13	65	25	36	6	54	119	92	59	75	420	656
Ives area	288	466	132	295	171	214	162	230	175	409	1,306	1,500
Duncan Creek	7	42	9	2	26	48	85	4	27	24	153	208
Hardy Creek	74	109	12	3	46	175	157	75	56	108	350	354
Hamilton Creek	178	251	133	118	142	404	542	352	255	260	249	332
Hamilton Spring Channel	88	227	47	114	94	190	325	137	392	678	1,397	1,265
Grays R. return	4,336	6,825	4,134	2,695	2,983	6,668	11,103	8,229	5,384	5,039	11,709	31,267
I-205 to Bonneville return	1,882	2,530	1,085	1,244	1,774	3,817	7,292	3,597	2,736	3,445	10,118	10,964
Sum	6,218	9,355	5,219	3,939	4,757	10,485	18,395	11,826	8,120	8,484	21,827	42,231

Table 13. Treaty fall Zone 6 mainstem commercial gillnet seasons, 2016.

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
AUGUST		1	2	3	4	5	6
	7	8	9	10	11	12	13
	14	15	16	17	18	19	20
		6 am				6 pm	
	21	22	23	24	25	26	27
SEPTEMBER		6 am				6 pm	
	28	29	30	31	1	2	3
		6 am				6 pm	
	4	5	6	7	8	9	10
		6 am				6 pm	
OCTOBER	11	12	13	14	15	16	17
		6 am				6 pm	
	18	19	20	21	22	23	24
		6 am				6 pm	
	25	26	27	28	29	30	1
NOVEMBER		6 am				6 pm	
	2	3	4	5	6	7	8
		6 am				6 pm	
	9	10	11	12	13	14	15
		6 am				6 pm	
DECEMBER	16	17	18	19	20	21	22
	23	24	25	26	27	28	29
Zone 6: 							

^{1.} For specific area and gear regulations, please see Table 29. Commercial sale of platform and hook and line caught fish was allowed from Aug 1- Dec 31.

Table 14. Non-treaty fall commercial fishing seasons, 2016.

Main-Stem Commercial Seasons				
Days	Season	Dates	Special Regulations	
			Gear	Area/Other
9 hrs	Early Fall Gill Net	Aug 7, 9 PM - Aug 8, 6 AM	9" min. and 9 3/4" max. mesh size restriction. The multiple net rule is not in effect. Lighted buoys are required between official sunset and sunrise.	Zones 4-5. The Washougal and Sandy River sanctuaries are in effect. Chinook, coho, pink, and sockeye salmon and shad may be sold.
9 hrs		Aug 9, 9 PM - Aug 10, 6 AM	Same.	Same.
9 hrs		Aug 11, 9 PM - Aug 12, 6 AM	9" min. and 9 3/4" max. mesh size restriction. The multiple net rule is not in effect. Lighted buoys are required between official sunset and sunrise.	Zones 4-5. The Washougal and Sandy River sanctuaries are in effect. Chinook, coho, pink, and sockeye salmon and shad may be sold.
9 hrs		Aug 14, 9 PM - Aug 15, 6 AM	Same.	Same.
9 hrs		Aug 16, 9 PM - Aug 17, 6 AM	Same.	Same.
9 hrs		Aug 18, 9 PM - Aug 19, 6 AM	Same.	Same.
9 hrs		Aug 21, 9 PM - Aug 22, 6 AM	Same.	Same.
9 hrs		Aug 23, 9 PM - Aug 24, 6 AM	Same.	Same.
9 hrs		Aug 25, 9 PM - Aug 26, 6 AM	Same.	Same.
9 hrs		Aug 28, 9 PM - Aug 29, 6 AM	Same.	Same.
9 hrs		Aug 30, 9 PM - Aug 31, 6 AM	Same.	Same.
10 hrs	Mainstem Seine Fishery: Aug/Sep	Aug 22, 6 AM - 4 PM	Beach or purse seine. Only one net is allowed per vessel. Mesh size restricted to a 3.5 inch maximum. Net material to consist of 3-strand nylon; twine size ≥ #12. Seines may include a bunt of 1.0-2.0 inch knotless mesh. Net length not to exceed 200 fathoms and depth not to exceed 200 meshes. A chafing strip panel consisting of non-monofilament webbing is allowed on the bottom of the net with a maximum panel depth is five feet. Chafing mesh not to exceed 3.5-inch stretched measure for beach and 5-inch stretched measure for purse. Red corks are required at 25-fathom intervals and red corks must be in contrast to the corks used in the remainder of the net. Lead net is optional and only one may be used per fishing operation. Lead nets must be retrieved daily. No restriction on corkline, leadline or use of stringers or slackers. Lead nets may not exceed 100 fathoms in length and may not be vertically slackened.	Beach Seining restricted to zones 2 and 3. Purse seining restricted to zones 1 and 3. Elokomin-B, Cowlitz, and Kalama-B sanctuaries are in effect, Adipose or left ventral fin-clipped Chinook, adipose fin-clipped coho, pink, and sockeye salmon, and shad may be sold. All legally-caught salmon must be kept and sold. Hand sorting or use of knotless dip net is required for sorting. All fish must be sorted and/or released prior to removing entire seine from water. Dry sorting is not permitted and the sort time may not exceed 75 minutes. Participants must have a 2016 seine permit issued by Washington or Oregon. Permit holder/designated fisher must be present during fishing operations and have applicable permits/licenses in possession.
10 hrs		Aug 24, 6 AM - 4 PM	Same.	Same.
10 hrs		Aug 29, 6 AM - 4 PM	Same.	Same.
10 hrs		Aug 31, 6 AM - 4 PM	Same.	Same.
10 hrs		Sep 6, 6 AM - 4 PM	Same.	Same.
10 hrs				

Table 14. continued

Main-Stem Commercial Seasons (continued)				
Days	Season	Dates	Special Regulations	
			Gear	Area/Other
10 hrs	Mainstem Seine Fishery: Aug/Sep (cont.)	Sep 7, 6 AM - 4 PM	Same.	Same, except Chinook (marked or unmarked) may be kept and sold. All fin-clipped Chinook caught must be retained and sold when unclipped Chinook salmon retention is allowed.
10 hrs		Sep 8, 6 AM - 4 PM	Same.	Same, except Chinook that are kept must have a clipped adipose or left ventral fin. Unmarked Chinook may not be kept.
10 hrs		Sep 9, 6 AM - 4 PM	Same seine gear as previous page.	Same as August 22 rules.
10 hrs		Sep 12, 7 AM - 5 PM	Same.	Same.
10 hrs		Sep 13, 7 AM - 5 PM	Same.	Same.
10 hrs		Sep 14, 7 AM - 5 PM	Same.	Same, except Chinook (marked or unmarked) may be kept and sold. All fin-clipped Chinook caught must be retained and sold when unclipped Chinook salmon retention is allowed.
10 hrs		Sep 15, 7 AM - 5 PM	Same.	Same, except Chinook that are kept must have a clipped adipose or left ventral fin. Unmarked Chinook may not be kept.
10 hrs		Sep 16, 7 AM - 5 PM	Same.	Same.
10 hrs		Sep 19, 7 AM - 5 PM	Same.	Same.
10 hrs		Sep 21, 7 AM - 5 PM	Same.	Same.
10 hrs		Sep 26, 7 AM - 5 PM	Same.	Same.
10 hrs		Sep 27, 7 AM - 5 PM	Same.	Same.
10 hrs		Sep 28, 7 AM - 5 PM	Same.	Same.
10 hrs		Sep 29, 7 AM - 5 PM	Same.	Same.
10 hrs		Sep 30, 7 AM - 5 PM	Same.	Same.
9 hrs	Late Fall Gill Net	Sep 18, 8 PM - Sep 19, 5 AM	8" minimum mesh size restriction. The multiple net rule is in effect. Nets that are fished between the official sunset and official sunrise must have a lighted buoy at each end of the net that is not attached to the boat.	Zones 4-5. Sandy and Washougal River sanctuaries are in effect. Chinook, coho, pink, and sockeye salmon, and shad may be sold.
10 hrs		Sep 22, 8 PM - Sep 23, 6 AM	Same.	Same.

Table 14. continued

Select Area Commercial Seasons				
Days	Season	Dates	Special Regulations	
			Gear	Area/Other
1 1/2	Youngs Bay - Fall	Aug 2, 7 PM - Aug 4, 7 AM	9 3/4" max. mesh size restriction. Nets may not exceed 250 fathoms in length. Leadline not to exceed 2 lbs per fathom. Use of additional weights or anchors attached directly to the leadline is allowed upstream of markers located approximately 200 yards upstream of the mouth of the Walluski River and the upper deadline at Battle Creek Slough, in the lower Walluski River upstream to the Highway 202 Bridge, and in the Lewis and Clark River from the Alternate Highway 101 Bridge upstream to the overhead power lines immediately upstream of Barrett Slough. Red corks are required at 25-fathom intervals and red corks must be in contrast to corks in the remainder of the net. Nets that are fished between the official sunset and official sunrise must have a lighted buoy at the end of the net that is not attached to the boat. Multiple net rule is in effect.	Youngs Bay select fishing area includes all waters from the new Highway 101 Bridge upstream to the upper boundary markers at Battle Creek Slough; including the lower Walluski river upstream to the Highway 202 Bridge and the lower Lewis and Clark River upstream to the overhead powerlines immediately upstream of Barrett Slough. All waters are under State of Oregon jurisdiction and are open to Oregon and Washington fishers who possess the appropriate licenses. Chinook, coho, pink, and sockeye salmon, and shad may be sold.
1.5		Aug 9, 7 PM - Aug 11, 7 AM	Same.	Same.
1.5		Aug 16, 7 PM - Aug 18, 7 AM	Same.	Same.
1.5		Aug 23, 7 PM - Aug 25, 7 AM	Same.	Same.
12 hrs		Aug 29, 7 PM - Aug 30, 7 AM	Same, except 6" max. mesh size restriction in effect.	Same.
12 hrs		Aug 30, 7 PM - Aug 31, 7 AM	Same.	Same.
12 hrs		Aug 31, 7 PM - Sep 1, 7 AM	Same.	Same.
56		Sep 5, 7 PM - Oct 31, noon	Same.	Same.
12 hrs	Tongue Point / South Channel - Fall	Aug 24, 7 PM - Aug 25, 7 AM	Tongue Point: 6" max. mesh size restriction. Nets may not exceed 250 fathoms in length and leadline may not exceed 2 lbs per fathom. South Channel: 6" max. mesh size restriction. Nets may not exceed 250 fathoms in length and there is no weight restriction on the leadline. Use of additional weights or anchors attached directly to the leadline is allowed. In both fishing sites, nets that are fished between the official sunset and official sunrise must have a lighted buoy at the end of the net that is not attached to the boat. The multiple net rule is in effect.	Tongue Point Basin/South Channel select fishing areas (concurrent waters). Fishers in Tongue Point area may have on-board un-stored gill nets legal for the South Channel fishing area. Permanent transportation rules are in effect. Chinook, coho, pink, and sockeye salmon, and shad may be sold.
12 hrs Nightly		Aug 29 - Sep 1, 7 PM - 7 AM nightly	Same.	Same.
12 hrs Nightly		Sep 5 - Sep 9, 7 PM - 7 AM nightly	Same.	Same.
18 hrs Nightly		Sep 12 - Sep 16, 4 PM - 10 AM nightly	Same.	Same.

Table 14. continued

Select Area Commercial Seasons (continued)				
Days	Season	Dates	Special Regulations	
			Gear	Area/Other
18 hrs Nightly	Tongue Point / South Channel - Fall (cont.)	Sep 19 - Sep 23, 4 PM - 10 AM nightly	Same.	Same as previous entry.
18 hrs Nightly		Sep 26 - Sep 30, 4 PM - 10 AM nightly	Same.	Same.
18 hrs Nightly		Oct 3 - Oct 7, 4 PM - 10 AM nightly	Same.	Same.
18 hrs Nightly		Oct 10 - Oct 14, 4 PM - 10 AM nightly	Same.	Same.
18 hrs Nightly		Oct 17 - Oct 21, 4 PM - 10 AM nightly	Same.	Same.
18 hrs Nightly		Oct 24 - Oct 28, 4 PM - 10 AM nightly	Same.	Same.
12 hrs	Blind Slough / Knappa Slough - Fall	Aug 24 - Aug 25, 7 PM - 7 AM	9 3/4" max. mesh size restriction. Nets may not exceed 100 fathoms in length. No weight restriction on leadline. Use of additional weights and anchors attached to the leadline is allowed. Nets that are fished between the official sunset and official sunrise must have a lighted buoy at the end of the net that is not attached to the boat. The multiple net rule is in effect.	Blind Slough includes all waters from markers at the mouth of Gnat Creek to the markers at the mouth of Blind Slough. Knappa Slough includes all waters bounded by a line from the north marker at the mouth of Blind Slough, westerly to a marker on Karlson Island downstream to boundary lines defined by markers on the west end of Minaker Island to markers on Karlson Island and the Oregon shore. The area within a 100 foot radius at the mouth of Big Creek is closed. Chinook, coho, pink, and sockeye salmon, and shad may be sold.
12 hrs Nightly		Aug 29 - Sep 1, 7 PM - 7 AM nightly	Same.	Same.
12 hrs Nightly		Sep 5 - Sep 9, 7 PM - 7 AM nightly	Same.	Same.
14 hrs Nightly		Sep 12 - Sep 16, 6 PM - 10 AM nightly	Same.	Same.
16 hrs Nightly		Sep 19 - Sep 23, 6 PM - 10 AM nightly	Same.	Same.

Table 14. continued

Select Area Commercial Seasons (continued)				
Days	Season	Dates	Special Regulations	
			Gear	Area/Other
16 hrs Nightly	Blind Slough / Knappa Slough - Fall (cont.)	Sep 26 - Sep 30, 6 PM - 10 AM nightly	Same.	Same as previous entry.
16 hrs Nightly	Blind Slough Only	Oct 3 - Oct 7, 6 PM - 10 AM nightly	Same.	Same, except the Knappa Slough fisheries were rescinded at the 9/29 Compact.
16 hrs Nightly		Oct 10 - Oct 14, 6 PM - 10 AM nightly	Same.	Same.
16 hrs Nightly		Oct 17 - Oct 21, 6 PM - 10 AM nightly	Same.	Same.
16 hrs Nightly		Oct 24 - Oct 28, 6 PM - 10 AM nightly	Same.	Same.
12 hrs	Deep River - Fall	Aug 1, 7 PM - Aug 2, 7 AM	9 3/4" max. mesh size restriction. Nets may not exceed 100 fathoms in length. No weight restriction on headline. Use of additional weights and anchors attached to the headline is allowed. Nets that are fished between the official sunset and official sunrise must have a lighted buoy at the end of the net that is not attached to the boat. The multiple net rule is in effect.	Deep River select fishing area extending from the USCG channel marker #16 upstream to the town of Deep River (concurrent waters up to Highway 4 Bridge, Washington only above). Nets are not allowed to be tied off to any stationary structures and nets may not fully cross the navigation channel. Chinook, coho, pink, and sockeye salmon, and shad may be sold.
12 hrs		Aug 4, 7 PM - Aug 5, 7 AM		Same.
12 hrs		Aug 8, 7 PM - Aug 9, 7 AM		Same.
12 hrs		Aug 11, 7 PM - Aug 12, 7 AM		Same.
12 hrs Nightly		Aug 15 - Aug 19, 7 PM - 7 AM nightly	Same.	Same.
12 hrs Nightly		Aug 22 - Aug 26, 7 PM - 7 AM nightly	Same.	Same.
12 hrs Nightly		Aug 29 - Sep 2, 7 PM - 7 AM nightly	Same.	Same.
12 hrs Nightly		Sep 5 - Sep 10, 7 PM - 7 AM nightly	Same.	Same.
15 hrs Nightly		Sep 12 - Sep 17, 6 PM - 9 AM nightly	Same, except a 6" max. mesh size restriction.	Same.
15 hrs Nightly		Sep 19 - Sep 24, 6 PM - 9 AM nightly	Same.	Same.

Table 14. continued

Select Area Commercial Seasons (continued)				
Days	Season	Dates	Special Regulations	
			Gear	Area/Other
15 hrs Nightly	Deep River - Fall (cont.)	Sep 26 - Sep 30, 6 PM - 9 AM nightly	Same.	Same.
15 hrs Nightly		Oct 3 - Oct 7, 6 PM - 9 AM nightly	Same.	Same as previous entry.
15 hrs Nightly		Oct 10 - Oct 14, 6 PM - 9 AM nightly	Same.	Same.
15 hrs Nightly		Oct 17 - Oct 19, 6 PM - 9 AM nightly	Same.	Same.

Table 15. 2016 fall season mainstem fisheries catch (includes adults and jacks).

Treaty Indian Fisheries^{2,3}						
Fishery ¹	Chinook	Coho	Chum	Pink	Summer Steelhead	White Sturgeon
Commercial Gillnet, Platform. and Hook & Line (8/22-10/21)	147,259	6,010	0	0	12,535	54
Platform, Hook & Line (8/1-20 and 10/4-11/16)	1,490	104	0	0	1,020	0
Treaty Indian Total	148,749	6,114	0	0	13,555	54
Non-Treaty Fisheries						
Fishery ¹	Chinook	Coho	Chum ⁴	Pink	Summer Steelhead	White Sturgeon ⁵
Early Fall Mainstem Commercial	46,321	408	--	--	--	--
Late Fall Mainstem Commercial	11,619	257	--	--	--	--
<i>Subtotal</i>	<i>57,940</i>	<i>665</i>	--	--	--	--
Beach Seine Commercial	2	39	--	--	--	--
Purse Seine Commercial	1,113	565	--	--	--	--
<i>Subtotal</i>	<i>1,115</i>	<i>604</i>	--	--	--	--
Select Areas Commercial	12,431	34,723	--	--	--	--
<i>Subtotal</i>	<i>12,431</i>	<i>34,723</i>	--	--	--	--
Buoy 10 Sport ⁶	17,780	9,182	--	--	82	--
Lower River Sport ⁶	26,913	1,317	--	--	1,862	--
Bonn. Dam to Hwy 395 Sport ⁶	5,800	3,700	--	--	10,040	--
Hanford Reach Sport ⁶	16,860	35	--	--	20	--
<i>Subtotal</i>	<i>67,353</i>	<i>14,234</i>			<i>12,004</i>	
Non-Treaty Total	138,839	50,226	--	--	12,004	--
Grand Total	287,588	56,340	0	0	25,559	54

^{1.} Commercial landings are preliminary. See Tables 13, 14, 16, 20, and 29 for details on specific time, area, and gear restrictions during commercial seasons.

^{2.} Includes take-home and over-the-bank sales.

^{3.} Subsistence harvest not occurring during commercial fishing periods.

^{4.} Chum possession and sales prohibited beginning in October 2013.

^{5.} White Sturgeon retention downstream of Bonneville Dam prohibited.

^{6.} See text for detailed season description. Data includes kept catch only.

Table 16. Fishing periods, gear, and landings from mainstem Columbia River non-treaty commercial seasons, 2016.

Prelim / FINAL Landings Information Based on ODFW / WDFW Fish Receiving Tickets (12 / 23 / 16)												
Season	Fishing Period	Week	Hours	Zones	Mesh Size	Del.	Chinook	Coho	Sockeye	Pink	Chum ¹	Sturgeon ²
Spring	Mar 29, noon - 9 PM	14	9	1 - 5	≤ 4 1/4"	90	1,152	12	--	--	Prohibited	Prohibited
	Apr 5, 10 AM - 8 PM	15	10	1 - 5	≤ 4 1/4"	88	291	3	--	--	Prohibited	Prohibited
	May 11, noon - May 12, 2 AM	20	14	1 - 5	≤ 4 1/4"	58	665	271	--	--	Prohibited	Prohibited
	May 24, 7 PM - May 25, 7 AM	22	12	1 - 5	8" - 9 3/4"	55	359	5	--	--	Prohibited	Prohibited
	May 31, 7 PM - Jun 1, 7 AM	23	12	1 - 5	8" - 9 3/4"	44	542	7	--	--	Prohibited	Prohibited
	Jun 7, 7 PM - Jun 8, 7 AM	24	8	1 - 5	8" - 9 3/4"	55	306	0	--	--	Prohibited	Prohibited
Spring Season Totals (and average number of deliveries):						65	3,315	298	0	0	0	0
Summer	Jun 16, 9 PM - Jun 17, 5 AM	25	8	1 - 5	8" - 9 3/4"	95	1,991	--	350	--	Prohibited	Prohibited
	Jul 11, 9 PM - Jul 12, 5 AM	29	8	1 - 5	8" - 9 3/4"	50	999	--	6	--	Prohibited	Prohibited
	Summer Season Totals (and average number of deliveries):						73	2,990	0	356	0	0
August	Aug 7, 9 PM - Aug 8, 6 AM	33	9	4 - 5	9" - 9 3/4"	24	268	0	--	0	Prohibited	Prohibited
	Aug 9, 9 PM - Aug 10, 6 AM	33	9	4 - 5	9" - 9 3/4"	27	859	2	--	0	Prohibited	Prohibited
	Aug 11, 9 PM - Aug 12, 6 AM	33	9	4 - 5	9" - 9 3/4"	50	1,157	11	--	0	Prohibited	Prohibited
	Aug 14, 9 PM - Aug 15, 6 AM	34	9	4 - 5	9" - 9 3/4"	77	963	3	--	0	Prohibited	Prohibited
	Aug 16, 9 PM - Aug 17, 6 AM	34	9	4 - 5	9" - 9 3/4"	74	3,935	8	--	0	Prohibited	Prohibited
	Aug 18, 9 PM - Aug 19, 6 AM	34	9	4 - 5	9" - 9 3/4"	119	3,724	34	--	0	Prohibited	Prohibited
	Aug 21, 9 PM - Aug 22, 6 AM	35	9	4 - 5	9" - 9 3/4"	128	2,073	18	--	0	Prohibited	Prohibited
	Aug 23, 9 PM - Aug 24, 6 AM	35	9	4 - 5	9" - 9 3/4"	134	8,549	63	--	0	Prohibited	Prohibited
	Aug 25, 9 PM - Aug 26, 6 AM	35	9	4 - 5	9" - 9 3/4"	145	11,155	127	--	0	Prohibited	Prohibited
	Aug 28, 9 PM - Aug 29, 6 AM	36	9	4 - 5	9" - 9 3/4"	138	3,421	39	--	0	Prohibited	Prohibited
	Aug 30, 9 PM - Aug 31, 6 AM	36	9	4 - 5	9" - 9 3/4"	138	10,217	103	--	0	Prohibited	Prohibited
August Season Totals (and average number of deliveries):						96	46,321	408	0	0	0	0
Late-Fall	Sep 18, 8 PM - Sep 19, 5 AM	39	9	4 - 5	8" - 9 3/4"	118	7,162	122	--	0	Prohibited	Prohibited
	Sep 22, 8 PM - Sep 23, 6 AM	39	10	4 - 5	8" - 9 3/4"	99	4,457	135	--	0	Prohibited	Prohibited
	Late-Fall Season Totals (and average number of deliveries):						109	11,619	257	0	0	0
* Includes jacks.						Ave. Del.	Chinook *	Coho	Sockeye	Pink	Chum ¹	Sturgeon ²
TOTALS:						86	64,543	665	356	0	0	0
Beach Seine ³	Sep 12, 6 AM - 4 PM	38	14	2 and 3	≤ 3 1/2"	1	0	0	0	0	1	1
	Sep 14, 6 AM - 4 PM ⁴	38	14	2 and 3	≤ 3 1/2"	1	1	0	1	1	3	4
	Sep 19, 6 AM - 4 PM	39	14	2 and 3	≤ 3 1/2"	1	0	0	0	8	14	22
	Sep 26, 6 AM - 4 PM	40	14	2 and 3	≤ 3 1/2"	1	0	1	1	4	8	12
Beach Seine Season Totals (and average number of deliveries for periods fished):						1	1	1	2	13	26	39
Purse Seine	Aug 22, 6 AM - 4 PM	35	14	1 and 3	≤ 3 1/2"	0	0	0	0	0	0	0
	Aug 24, 6 AM - 4 PM	35	14	1 and 3	≤ 3 1/2"	0	0	0	0	0	0	0
	Aug 29, 6 AM - 4 PM	36	14	1 and 3	≤ 3 1/2"	0	0	0	0	0	0	0
	Aug 31, 6 AM - 4 PM	36	14	1 and 3	≤ 3 1/2"	0	0	0	0	0	0	0
	Sep 6, 6 AM - 4 PM	37	14	1 and 3	≤ 3 1/2"	2	22	5	27	10	1	11
	Sep 7, 6 AM - 4 PM ⁴	37	14	1 and 3	≤ 3 1/2"	4	428	33	461	53	2	55
	Sep 8, 6 AM - 4 PM	37	14	1 and 3	≤ 3 1/2"	4	154	18	172	106	18	124
	Sep 9, 6 AM - 4 PM	37	14	1 and 3	≤ 3 1/2"	3	92	3	95	53	11	64
	Sep 12, 7 AM - 5 PM	38	13	1 and 3	≤ 3 1/2"	2	78	15	93	43	6	49
	Sep 13, 7 AM - 5 PM	38	13	1 and 3	≤ 3 1/2"	2	129	16	145	36	5	41
	Sep 14, 7 AM - 5 PM	38	13	1 and 3	≤ 3 1/2"	1	22	3	25	10	0	10
	Sep 15, 7 AM - 5 PM	38	13	1 and 3	≤ 3 1/2"	1	40	4	44	19	3	22
	Sep 16, 7 AM - 5 PM	38	13	1 and 3	≤ 3 1/2"	0	0	0	0	0	0	0
	Sep 19, 7 AM - 5 PM	39	13	1 and 3	≤ 3 1/2"	0	0	0	0	0	0	0
	Sep 21, 7 AM - 5 PM	39	13	1 and 3	≤ 3 1/2"	2	16	7	23	22	10	32
	Sep 26, 7 AM - 5 PM	40	13	1 and 3	≤ 3 1/2"	1	4	3	7	27	14	41
	Sep 27, 7 AM - 5 PM	40	13	1 and 3	≤ 3 1/2"	0	0	0	0	13	6	19
	Sep 28, 7 AM - 5 PM	40	13	1 and 3	≤ 3 1/2"	1	4	3	7	53	15	68
	Sep 29, 7 AM - 5 PM	40	13	1 and 3	≤ 3 1/2"	1	11	3	14	16	3	19
	Sep 30, 7 AM - 5 PM	40	13	1 and 3	≤ 3 1/2"	0	0	0	0	8	2	10
Purse Seine Season Totals (and average number of deliveries for periods fished):						1	1,000	113	1,113	469	96	565
* Includes jacks.						ChF Adults	ChF Jacks	Total ChF *	Coho Adults	Coho Jacks	Total Coho *	
TOTALS:						1,001	114	1,115	482	122	604	
* Includes jacks.						Chinook *	Coho *	Sockeye	Pink	Chum ¹	Sturgeon ²	
2016 Grand Totals:						65,658	1,269	356	0	0	0	

1. The possession and sales of chum salmon was prohibited by Compact Action on September 26, 2013 for non-treaty commercial fisheries beginning in October, 2013.

2. Commercial fisheries downstream of Bonneville Dam were closed to the retention of white sturgeon during 2014-16 (ODFW/WFW action); green sturgeon retention prohibited since July 6, 2006 (NMFS SDPS Threatened 4/7/06).

3. Only beach seine fishing periods with associated landings are shown. For an entire listing of openers, please see purse seine seasons. Both beach seine and purse seine gears shared the same season structure.

4. Seine fisheries each had one day of non-mark selective Chinook retention and sales--September 14 for beach seine and September 7 for purse seine.

Table 17. Lower Columbia River winter/spring/summer/fall commercial landings, 2016.

2016 Lower Columbia River <u>Winter/Spring/Summer</u> Commercial Landings										
(Prelim / FINAL - OR/WA Fish Tickets - 12 / 23 / 16)										
<u>Season</u>	<u>CHINOOK</u>		<u>Z 1 - 5 Spring Chinook</u> ¹		<u>SOCKEYE</u>		<u>SHAD</u>		<u>WHITE STURGEON</u> ²	
<u>Mainstem</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Adults</u>	<u>Jacks</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>
Winter Sturgeon (no season in 2016)	0	0	--	--	0	0	0	0	No Retention	
Spring ¹	3,613	48,056	3,315	298	0	0	2,503	4,256	No Retention	
Summer	2,990	49,537	--	--	356	1,209	0	0	No Retention	
Shad (Area 2S)	--	--	--	--	--	--	267	720	No Retention	
Mainstem Totals	6,603	97,593	--	--	356	1,209	2,770	4,976	0	0
<u>Select Areas</u>										
Youngs Bay Winter	1,064	14,665			0	0	0	0	No Retention	
Youngs Bay Spring	3,794	44,865			0	0	0	0	No Retention	
Youngs Bay Summer	1,836	23,726			5	14	0	0	No Retention	
Tongue Point Winter	109	1,538			0	0	0	0	No Retention	
Tongue Point Spring	997	11,702			0	0	0	0	No Retention	
Blind & Knappa Sloughs Winter	140	1,937			0	0	0	0	No Retention	
Blind & Knappa Sloughs Spring	2,477	30,163			2	5	0	0	No Retention	
Deep River Winter	71	915			0	0	0	0	No Retention	
Deep River Spring	8	100			0	0	0	0	No Retention	
Select Area Totals	10,496	129,611			7	19	0	0	0	0
Lower Columbia River Commercial GRAND TOTALS Winter/Spring/Summer 2016	17,099	227,204			363	1,228	2,770	4,976	0	0

2016 Lower Columbia River <u>Fall</u> Commercial Landings										
(Prelim / FINAL - OR/WA Fish Tickets - 12 / 23 / 16)										
<u>Season</u>	<u>CHINOOK</u>		<u>COHO</u>		<u>PINK</u>		<u>CHUM</u> ³		<u>WHITE STURGEON</u> ²	
<u>Mainstem</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>
August (Zone 4 - 5 gillnet) ⁴	46,321	814,040	408	3,090	0	0	No Retention		No Retention	
August Subtotals	46,321	814,040	408	3,090	0	0	No Retention		No Retention	
Late-Fall (Zone 4 - 5; 8-9 ^{3/4} inch gillnet)	11,619	178,916	257	2,258	0	0	No Retention		No Retention	
Late-Fall (Zone 1 - 5; 8-9 ^{3/4} inch gillnet)	0	0	0	0	0	0	No Retention		No Retention	
Late-Fall (Zone 1 - 3 tangle-net)	0	0	0	0	0	0	No Retention		No Retention	
Late-Fall (Z 1 - 3; 6-inch max gillnet)	0	0	0	0	0	0	No Retention		No Retention	
Late-Fall Subtotals	11,619	178,916	257	2,258	0	0	No Retention		No Retention	
Beach Seine (Zone 1 - 5) ⁵	2	16	39	139	0	0	No Retention		No Retention	
Purse Seine (Zone 1 - 5) ⁵	1,113	13,132	565	3,802	0	0	No Retention		No Retention	
Seine Subtotals	1,115	13,148	604	3,941	0	0	No Retention		No Retention	
Fall Mainstem Totals (all gears)	59,055	1,006,104	1,269	9,289	0	0	0	0	0	0
<u>Select Areas</u>										
Youngs Bay	6,398	61,558	15,784	119,795	0	0	No Retention		No Retention	
Tongue Point	2,007	20,133	11,284	81,952	0	0	No Retention		No Retention	
Blind Slough & Knappa Slough	2,027	25,731	1,493	11,794	0	0	No Retention		No Retention	
Deep River	1,999	22,819	6,162	47,343	3	11	No Retention		No Retention	
Fall Select Area Totals	12,431	130,241	34,723	260,884	3	11	0	0	0	0
Lower Columbia River Commercial GRAND TOTALS Fall 2016	71,486	1,136,345	35,992	270,173	3	11	0	0	0	0

PRELIMINARY GRAND TOTALS 2016										
	<u>CHINOOK</u>		<u>COHO</u>		<u>PINK</u>		<u>CHUM</u> ³		<u>WHITE STURGEON</u> ²	
	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>
	88,585	1,363,549	35,992	270,173	3	11	No Retention		No Retention	
for Lower Columbia R. Commercial Fisheries										
	<u>SOCKEYE</u> ⁴		<u>SHAD</u>		<u>SMELT (Mainstem)</u>		<u>GREEN STURGEON</u> ⁶			
	<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Pounds</u>		<u>Numbers</u>	<u>Pounds</u>		
	364	1,234	2,770	4,976	4,822				No Retention	

1. During spring salmon seasons in Zones 1 - 5, 3,613 total Chinook were landed, of which 3,315 were adults and 298 were jacks.

2. All non-Indian commercial fisheries downstream of Bonneville Dam were closed to the retention of white sturgeon during 2016 based on OFWC and WFWC action.

3. The possession and sales of chum salmon was prohibited by Compact Action on September 26, 2013 for non-treaty commercial fisheries beginning in October, 2013.

4. Includes one sockeye for six pounds was landed during the August Zone 4 - 5 gillnet fishery on August 19.

5. Fall seining: beach seine = two total Chinook (one adult & one jack) and 39 total coho (13 adults; 26 jacks); purse seine = 1,113 total Chinook (1,000 adults; 113 jacks) and 565 total coho (469 adults; 96 jacks).

6. The retention of green sturgeon has been prohibited since July 6, 2006 (NMFS listed the Southern DPS as threatened on April 7, 2006 which became effective July 6, 2006).

Table 18. Stock composition of adult fall Chinook catch in mainstem Columbia River fisheries, 2016.¹

<i>Non-Treaty Fisheries</i>	LRH	LRW	BPH	URB	MCB²	Other³	Total
Buoy 10 Recreational ⁴	4,710	0	1,525	6,229	1,022	2,524	16,010
Lower Columbia Recreational ⁴ Above Bonneville Dam	1,365	1,207	309	18,112	4,109	85	25,187
Recreational ⁵	0	0	0	19,482	3,155	24	22,661
August Commercial	5,641	29	7,276	25,859	5,149	148	44,102
September/October Commercial	448	89	1,166	6,573	3,268	33	11,577
Seine Commercial ⁴	279	69	153	577	317	0	1,395
Select Area Commercial	4,588	0	21	879	385	3,916	9,789
<i>Subtotal</i>	17,031	1,394	10,450	77,711	17,405	6,730	130,721
<i>Treaty Fisheries</i>							
Sales to Licensed Buyers	32	0	16,144	84,861	17,355	493	118,885
C&S, OTB and other non-ticketed catch	0	0	12	11,152	2,116	2	13,282
<i>Subtotal</i>	32	0	16,156	96,013	19,471	495	132,167
Grand Total	17,063	1,394	26,606	173,724	36,876	7,225	262,888

1. Based on updated catch estimates; therefore, catch may not match data presented elsewhere in this report.

2. Includes lower river bright (LRB) stock.

3. Out of basin stocks/strays.

4. Includes release mortalities.

5. Includes Zone 6 and Hanford Reach.

Table 19. Fall season summer steelhead harvest and incidental release mortalities in mainstem Columbia River non-treaty fisheries, 1999-2016.¹

Year	Commercial Below BON ²				Recreational Below BON				Recreational BON - Hwy 395				Dip-Ins ³				Total Fall Season			
	Released Clipped Hatchery		Released Unclipped		Kept Clipped Hatchery		Released Unclipped		Kept Clipped Hatchery		Released Unclipped		Kept Clipped Hatchery		Released Unclipped		Clipped Hatchery		Unclipped	
	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index
1999	125	52	35	9	3,577	469	123	5	4,522	929	113	23	2,712	681	96	12	10,937	2,132	367	49
2000	217	56	67	14	4,401	649	165	31	5,167	1,925	150	28	8,701	1,896	274	54	18,486	4,527	656	127
2001	394	214	87	24	4,419	615	192	22	11,462	2,529	193	35	16,006	3,966	385	59	32,281	7,324	857	139
2002	565	331	153	92	2,971	550	139	54	8,664	3,993	111	107	7,938	4,267	215	131	20,137	9,142	618	385
2003	1,384	389	165	62	3,943	228	182	19	4,779	533	75	15	11,798	1,520	236	34	21,904	2,671	658	130
2004	868	267	206	69	2,387	92	95	6	2,947	453	70	18	8,080	923	229	29	14,281	1,735	600	122
2005	549	209	112	48	2,462	179	102	16	5,142	1,554	88	56	9,188	1,764	209	49	17,341	3,706	511	168
2006	423	241	120	26	3,610	638	157	15	5,367	2,326	127	51	8,925	3,613	301	44	18,325	6,819	704	137
2007	182	145	54	24	4,293	453	158	12	8,250	4,661	201	182	11,221	3,950	454	77	23,946	9,209	867	294
2008	386	270	141	63	2,026	562	99	22	4,169	2,432	137	87	3,864	2,430	141	58	10,445	5,695	519	229
2009	740	68	239	29	7,049	276	412	26	8,607	2,936	286	152	19,653	3,040	600	126	36,050	6,320	1,537	334
2010	460	210	210	77	5,090	954	276	64	4,075	2,355	135	138	6,907	2,881	314	114	16,532	6,401	935	392
2011	921	236	292	31	11,191	862	731	42	7,015	1,377	286	59	7,178	1,529	302	37	26,305	4,004	1,610	170
2012	418	65	142	20	5,126	492	308	39	5,774	2,482	185	88	4,442	1,060	139	24	15,759	4,100	773	170
2013	356	34	208	11	6,045	94	645	3	3,634	727	170	69	6,952	547	408	14	16,986	1,402	1,430	97
2014	527	119	335	31	5,870	505	514	13	4,182	1,246	250	63	7,196	1,916	449	47	17,775	3,787	1,549	152
2015	417	55	172	15	4,124	88	258	3	6,072	1,477	259	52	10,904	661	483	21	21,517	2,280	1,172	90
2016	458	72	147	13	1,371	491	83	3	2,087	2,492	52	17	3,442	1,862	70	14	7,358	4,916	352	48
5-yr Ave	435	69	201	18	4,507	334	362	12	4,350	1,685	183	58	6,587	1,209	310	24	15,879	3,297	1,055	111
10-yr Ave	487	127	194	31	5,219	478	348	23	5,387	2,219	196	91	8,176	1,988	336	53	19,267	4,811	1,074	198

1. From fisheries occurring Aug-Dec. All steelhead considered A-Index or B-Index upriver summer steelhead. Stock Composition and % unclipped based on Bonneville Dam sampling, LCR creel, or on-board observation data. Data for 2016 are preliminary, and all data are subject to change.

2. Reflects incidental release mortalities (clipped and unclipped). Includes seine fisheries. BON = Bonneville Dam

3. Includes Dip-In mortalities in select Zone 6 tributaries where steelhead may "dip in" to seek cool-water refuge. Kept catch based on Catch Record Cards.

Table 20. Time, area, and gear restrictions for early fall non-treaty commercial mainstem fisheries, 2009-2016.

Year	Date(s)	Hours	Area	Mesh Size
2009	Aug 4-5, Aug 6-7	7pm – 7am nightly	Zones 1-5	9” min
	Aug 9-10	"	Zones 2-5	"
	Aug 18-19, Aug 20-21	8pm – 6am nightly	Zones 3-5 upstream of Kalama River	"
	Aug 25-26	"	Zone 5	"
2010	Aug 3-4, Aug 5-6	7pm – 7am nightly	Zones 1-5	9” min
	Aug 8-9	"	"	"
	Aug 10-11	"	Zones 2-5	"
	Aug 19-20	8pm – 6am nightly	Zones 4-5	"
	Aug 22-23, Aug 24-25	9pm – 6am nightly	"	"
	Aug 30-31	"	"	"
2011	Aug 4-5	9pm – 6am nightly	Zones 1-5	9” min
	Aug 16-17, Aug 18-19	"	Zones 4-5	"
	Aug 21-22, Aug 23-24	"	"	"
	Aug 25-26, Aug 28-29	"	"	"
	Aug 30-31	"	"	"
2012	Aug 5-6	9pm – 6am nightly	Zones 1-5	9” min
	Aug 12-13, Aug 14-15	"	Zones 4-5	"
	Aug 16-17, Aug 19-20	"	"	"
	Aug 21-22, Aug 23-24	"	"	"
	Aug 26-27, Aug 28-29	"	"	"
2013	Aug 11-12, Aug 13-14	9pm – 6am nightly	Zones 4-5	9” min
	Aug 15-16, Aug 18-19	"	"	"
	Aug 20-21, Aug 22-23	"	"	"
	Aug 25-26	"	"	"
	Aug 28-29	9pm – 2am	"	"
2014 Gillnet	Aug 3-4, Aug 5-6	9pm – 6am nightly	Zones 4-5	9” min
	Aug 7-8, Aug 10-11	"	"	"
	Aug 12-13, Aug 14-15	"	"	"
	Aug 17-18, Aug 19-20	"	"	"
	Aug 21-22, Aug 24-25	"	"	"
	Aug 26-27, Aug 28-29	"	"	"
	Sep 1-2	9pm – 2am	"	"
2014 Seine	Aug 19, 21, 26	6am – 7:30pm	Zones 1-2	3.5” max
	Aug 28	"	"	"
2015 Gillnet	Aug 9-10, Aug 11-12	9pm – 6am nightly	Zones 4-5	9” min
	Aug 13-14, Aug 16-17	"	"	"
	Aug 18-19, Aug 20-21	"	"	"
	Aug 23-24, Aug 25-26	"	"	"
	Aug 27-28	"	"	"
	Aug 31	2am – 6am	Zones 4-5	9” min
2015 Seine	Aug 24-26	6am – 8pm	Zones 2-3	3.5” max
	Aug 31	"	"	"
2016 Gillnet	Aug 7-8, Aug 9-10,	9pm – 6am nightly	Zones 4-5	9” min
	Aug 11-12, Aug 14-15,	"	"	"
	Aug 16-17, Aug 18-19,	"	"	"
	Aug 21-22, Aug 23-24,	"	"	"
	Aug 25-26, Aug 28-29	"	"	"
	Aug 30-31	"	"	"
2016 Seine	Aug 22, Aug 24,	6am – 4pm	Zones 2, 3 (Beach)	3.5” max
	Aug 29, Aug 31	"	Zones 1, 3 (Purse)	"

Table 21. Landed catch from early fall non-treaty commercial mainstem fisheries, 1970-2016.

Year	Season ¹	Fishing Days	Chinook Adults	Coho	Steelhead ²	Sturgeon ³	
						White	Green
1970-74 Ave.	Aug 9-26	12	96,260	29,660	5,800	2,660	1,320
1975-79 Ave.	Aug 8-21	6	51,560	3,320	--	4,500	1,060
1980-84 Ave.	Aug 30-Sep 3 (2 yrs no season)	<0.5	30,600	2,480	--	680	300
1985	None	0	--	--	--	--	--
1986	Jul 30-Aug. 6	4	800	0	--	5,400	5,100
1987	Aug. 9-12	3	11,500	100	--	3,900	3,200
1988	Aug. 14-15	0.5	51,100	300	--	1,700	2,300
1989	Aug. 7-29	13	29,800	100	--	1,800	0
1990	Aug. 12-24	10	6,700	20	--	1,500	0
1991	Aug. 25-29	4	5,400	10	--	500	0
1992	Sept. 8-9	0.5	2,200	400	--	800	1,800
1993	None	0	--	--	--	--	--
1994	None	0	--	--	--	--	--
1995	None	0	--	--	--	--	--
1996	Aug. 26-29	3	4,400	0	--	300	0
1997	Aug. 4 - 25	2	1,300	1	--	1,900	1,500
1998	Aug. 4 - 26	2	1,800	0	--	2,600	700
1999	Aug. 4 - 24	2	1,400	0	--	2,900	500
2000	Aug. 3-23	3	7,400	200	--	2,800	600
2001	Aug. 5-25	7	6,600	660	--	5,700	340
2002	Aug. 4-28	10	19,500	60	--	1,700	0
2003	Aug. 4-28	8	15,700	300	--	2,600	11
2004	Aug. 3-26	8	11,300	40	--	2,500	6
2005	Aug. 4-26	8	11,400	90	--	2,100	30
2006	Aug. 2-25	8	10,700	800	--	1,900	--
2007	Aug. 2-24	4	4,000	60	--	2,700	--
2008	Aug. 3-25	7	14,400	80	--	2,800	--
2009 ⁴	Aug. 4-26	6	28,200	1,300	--	3,000	--
2010	Aug. 3-25	7	21,800	440	--	1,900	--
2011 ⁵	Aug. 4-31	8	25,000	1,600	--	1,300	--
2012	Aug. 5-29	9	23,300	300	--	1,000	--
2013	Aug 11-29	8	44,300	400	--	700	--
2014 ⁶	Aug 3-Sept 2	13	46,900	830	--	--	--
2015 ⁶	Aug 9-31	9.5	33,400	160	--	--	--
2016 ⁶	Aug 7-31	11	46,321	408	--	--	--

^{1.} Minimum mesh size: 1970-1974 7-1/4"; 1975-1979 8"; 1980-2004 see Table 23, 2005 see Table 15.

^{2.} Sale of steelhead in non-treaty fisheries prohibited since 1975.

^{3.} Sale of Green Sturgeon prohibited effective July 7, 2006. Retention of White Sturgeon prohibited beginning in 2014.

^{4.} One Chum salmon was landed during the 2009 August 18-19 fishing period.

^{5.} Eight Pink salmon were also landed during August 2011.

^{6.} Estimated catch from mainstem Columbia River commercial seine fisheries not included; see Table 24.

Table 22. Closed fishing areas during late fall mainstem non-treaty fishing seasons, 2007-2016.

Year	Date(s)	Closed Area
2007	Sep 20-21, Sep 27-28, Oct 3-4, Oct 4-5, Oct 28-29, Oct 30-31	Zones 1-3
	Sep 24, Sep 26, Oct 1, Oct 3, Oct 11, Oct 17, Oct 23, Oct 25	Zones 4-5
2008	Sep 23-24, Sep 24-25, Sep 25-26, Sep 28-29, Sep 29-30, Sep 30-Oct 1, Oct 1-2, Oct 2-3, Oct 8-9, Oct 9-10, Oct 15-16, Oct 16-17, Oct 21-22, Oct 23-24, Oct 26-27, Oct 28-29, Oct 30-31	Zones 1-3 Longview Bridge - Lewis River Longview Bridge - Beacon Rock
	Oct 16, Oct 22, Oct 29	
2009	Sep 24-25, Sep 28-29, Sep 30-Oct 1, Oct 1-2, Oct 4-5, Oct 7-8, Oct 13-14, Oct 15-16, Oct 18-19, Oct 20-21, Oct 22-23, Oct 25-26, Oct 27-28	Zones 1-3
	Sep 28, Sep 30, Oct 21 Oct 28	Zones 4-5 Zones 1 and 4-5
2010	Sep 22-23, Oct 14-15, Oct 17-18, Oct 19-20, Oct 21-22	Zones 1-3
	Oct 12, Oct 14, Oct 20	Zones 4-5
2011	Sep 19-20, Sep 20-21, Oct 13-14 Oct 18-19, Oct 19-20	Zones 1-3
	Oct 13, Oct 19	Zones 4-5
2012	Sep 19-20, Sep 23-24, Sep 25-26	Zones 1-3
2013	Sep 15-16, Sep 17-18, Sep 19-20	Zones 1-3
	Sep 22-23, Sep 24-25, Oct 1-2 Oct 3-4, Oct 6-7, Oct 8-9, Oct 10-11, Oct 13-14, Oct 15-16 Oct 17-18, Oct 20-21, Oct 22-23 Oct 24-25, Oct 27-28, Oct 29-30, Oct 31-Nov 1	
	Oct 2, Oct 3, Oct 7, Oct 8, Oct 9, Oct 10, Oct 14, Oct 15, Oct 16 Oct 18, Oct 21, Oct 23, Oct 25	Zones 4-5
2014	Sep 14-15, Sep 16-17, Oct 2-3 Oct 5-6, Oct 7-8, Oct 9-10, Oct 12-13, Oct 14-15, Oct 16-17 Oct 19-20, Oct 21-22, Oct 23-24 Oct 26-27, Oct 28-29, Oct 30-31,	Zones 1-3
	Oct 1, Oct 2, Oct 6, Oct 7, Oct 8 Oct 9, Oct 10, Oct 13, Oct 14, Oct 15 Oct 16, Oct 17, Oct 20, Oct 21, Oct 22, Oct 23, Oct 24, Oct 27, Oct 28, Oct 29, Oct 30, Oct 31	Zones 4-5
2015	Sep 15-16, Sep 20-21, Sep 22-23	Zones 1-3
	Sep 27-28	
	Oct 1, Oct 5, Oct 7, Oct 12, Oct 20	Zones 4-5
2016	Sep 18-19, Sep 22-23	Zones 1-3

Table 23. Landed catch from late fall mainstem and Select Area non-treaty commercial fishing seasons, 1980-2016.

Year	Mainstem Season ¹	Mainstem Fishing Days	Adult Chinook		Coho		Chum ³	Steelhead ⁴	Sturgeon	
			Columbia Mainstem	Select Area ²	Columbia Mainstem	Select Area ²			White ⁵	Green ⁶
1980-84 Ave.	Sep 10-Nov 16	21	17,880	15,840	101,540	19,960	1,080	--	5,740	670
1985-89 Ave.	Sep 12-Nov 15	39	16,564	16,100	37,738	40,640	1,520	--	3,780	1,320
1990	Sep 18-Oct 31	26	35,300	3,100	47,400	27,600	800	--	3,100	2,200
1991	Sep 10-Nov 5	32	33,500	2,100	324,400	82,100	400	--	2,400	3,200
1992	Sep 22-Oct 30	22	14,100	1,500	37,900	19,600	700	--	4,200	400
1993	Sep 20-Oct 20	17	16,700	300	20,600	15,500	40	--	7,100	2,200
1994	Oct 9-Oct 19	4	1,500	100	6,000	57,800	20	--	3,400	200
1995	Oct 9 & Oct 12	2	50	500	200	22,300	0	--	6,000	400
1996	Sep 16-Oct 25	17	7,600	5,000	5,600	22,400	20	--	6,700	600
1997	Sep 24-Nov 7	23	3,800	4,000	3,800	17,100	39	--	7,900	100
1998	Oct 7-Nov 6	7	1,000	2,100	300	23,600	11	--	8,200	200
1999	Sep 20-Nov 4	23	4,600	2,100	57,600	23,000	101	--	4,300	400
2000	Sep 18-Nov 1	21	3,440	2,300	110,400	58,300	26	--	5,300	700
2001	Sep 17-Oct 31	27	14,900	3,100	219,100	33,800	116	--	20	0
2002	Sep 16-Oct 31	19	16,100	8,700	99,500	70,400	12	--	4,500	200
2003	Sep 15-Oct 31	23	42,700	9,700	149,500	117,100	6	--	3,600	30
2004	Sep 19-Oct 29	16	29,800	12,600	66,500	51,900	90	--	3,300	50
2005	Sep 19-Oct 28	18	16,100	8,700	32,300	65,800	10	--	3,900	20
2006	Sep 19-Oct 25	10	15,300	4,600	27,500	37,700	3	--	3,600	--
2007	Sep 19-Oct 31	26	8,200	4,500	30,100	10,500	38	--	2,900	--
2008	Sep 18-Oct 31	23	13,700	14,000	13,000	55,200	22	--	3,300	--
2009	Sep 24-Oct 28	21	6,800	12,000	43,900	81,000	29	--	2,100	--
2010	Sep 22-Oct 22	11	9,400	20,700	18,500	58,800	275	--	1,500	--
2011	Sep 18-Oct 20	10	26,400	22,900	11,800	49,500	144	--	1,200	--
2012	Sep 19-Oct 22	15	13,500	23,700	2,300	15,400	37	--	400	--
2013	Sep 15-Nov 1	34	40,700	24,100	9,400	42,300	0 ⁸	--	400 ⁹	--
2014 ⁷	Sep 14-Oct 31	40	52,100	24,200	68,500	168,500	-- ⁸	--	-- ⁹	--
2015 ⁷	Sep 15-Oct 20	10	47,800	18,100	3,900	27,400	-- ⁸	--	-- ⁹	--
2016 ⁷	Sep 18-23	2	11,619	12,431	257	34,723	-- ⁸	--	-- ⁹	--

^{1.} Number of Oregon and Washington terminal areas and fishing days vary from year to year, and some early fall fisheries are included. Between 1983 and 1995 only Oregon terminal fisheries occurred. Prior to 1979, landings listed for Youngs Bay are minimal since salmon could be sold outside Youngs Bay during concurrent mainstem fishing periods.

^{2.} Includes 1970-present Youngs Bay Select Area, 1980-1982 Washington terminal and 1996-present Big Creek, Tongue Point, Blind Slough, and Deep River Select Area, and 2000-2005 Steamboat Slough Select Area landings.

^{3.} Includes landings from Select Area fall fisheries beginning in 1997.

^{4.} Sale of steelhead in non-treaty fisheries prohibited since 1975.

^{5.} Includes landings from Select Area fall fisheries from August 1 through October 31.

^{6.} Green sturgeon retention prohibited since July 7, 2006.

^{7.} Estimated catch from mainstem Columbia River commercial seine fisheries not included; please see Table 24.

^{8.} Chum possession and sales prohibited for non-treaty commercial fisheries beginning in October 2013.

^{9.} White sturgeon retention prohibited since 2014.

Table 24. Estimated landed catch from Columbia River non-treaty commercial seine fisheries, 2014-2016.¹

2014 Estimated Landed Catch from Mainstem Columbia River Non-Treaty Commercial Pilot Seine Research Fisheries											
Gear	Dates	Fishing Days	Hours	Weeks	Zones	Chinook			Coho		
						Adults	Jacks	Totals	Adults	Jacks	Totals
Beach Seine	Aug 19-Sep 30	22	12.5-13.5	34-40	1-5	1,133	204	1,337	489	20	509
Purse Seine	Aug 19-Sep 30	22	12.5-13.5	34-40	1-5	1,306	151	1,457	542	19	561
						2,439	355	2,794	1,031	39	1,070
2015 Estimated Landed Catch from Mainstem Columbia River Non-Treaty Commercial Seine Fisheries											
Gear	Dates	Fishing Days	Hours	Weeks	Zones	Chinook			Coho		
						Adults	Jacks	Totals	Adults	Jacks	Totals
Beach Seine	Aug 24-Sep 30	23	13-14	35-40	2-4	572	109	681	55	3	58
Purse Seine	Aug 24-Sep 30	23	13-14	35-40	2-4	2,191	121	2,312	509	20	529
						2,763	230	2,993	564	23	587
2016 Estimated Landed Catch from Mainstem Columbia River Non-Treaty Commercial Seine Fisheries²											
Gear	Dates	Fishing Days	Hours	Weeks	Zones	Chinook			Coho		
						Adults	Jacks	Totals	Adults	Jacks	Totals
Beach Seine	Aug 22-Sep 30	20	10	35-40	2-3	1	1	2	13	26	39
Purse Seine	Aug 22-Sep 30	20	10	35-40	1&3	1,000	113	1,113	469	96	565
						1,001	114	1,115	482	122	604

^{1.} Catch estimates based on observation data.

^{2.} Seine fisheries allowed one day of non-mark selective Chinook retention and sales – September 14 for beach seine and September 7 for purse seine.

Table 25. Select Area fall commercial fisheries landings, 2009-2016.

Year	Site	Chinook	Coho	Chum	White Sturgeon	
2009	Youngs Bay	6,565	49,329	0	72	
	Tongue Point	872	16,918	1	11	
	Blind Slough ¹	3,991	10,043	0	20	
	Deep River	562	4,660	2	11	
		11,990	80,950	3	114	
2010	Youngs Bay	8,048	27,564	0	37	
	Tongue Point	1,402	6,734	0	31	
	Blind Slough ¹	10,205	5,201	1	45	
	Deep River	1,011	19,260	11	3	
		20,666	58,759	12	116	
2011	Youngs Bay	12,339	26,538	Pink	Chum	
	Tongue Point	2,527	6,504	13	1	No retention
	Blind Slough ¹	5,768	1,388	19	1	No retention
	Deep River	2,295	15,083	4	2	No retention
		22,929	49,513	6	129	No retention
2012	Youngs Bay	16,197	5,986		Chum	
	Tongue Point	2,466	3,902		3	No retention
	Blind Slough ¹	3,366	1,534		0	No retention
	Deep River	1,691	3,932		2	No retention
		23,720	15,354		20	No retention
				25	0	
2013	Youngs Bay	14,359	14,254	Pink	Chum ²	
	Tongue Point	5,821	14,157	3	0	38
	Blind Slough ¹	2,362	3,882	5	0	42
	Deep River	1,592	10,002	2	0	14
		24,134	42,295	5	0	8
				15	0	102
2014	Youngs Bay	11,829	65,917	Pink		
	Tongue Point	5,460	50,752	1		No retention
	Blind Slough ¹	4,661	24,573	0		No retention
	Deep River	2,248	27,255	0		No retention
		24,198	168,497	1		No retention
				2		0
2015	Youngs Bay	6,765	11,463	Pink		
	Tongue Point	3,614	9,721	0		No retention
	Blind Slough ¹	3,405	1,698	1		No retention
	Deep River	4,303	4,519	1		No retention
		18,087	27,401	1		No retention
				3		
2016	Youngs Bay	6,398	15,784	Pink		
	Tongue Point	2,007	11,284	0		No retention
	Blind Slough ¹	2,027	1,493	0		No retention
	Deep River	1,999	6,162	0		No retention
		12,431	34,723	3		

¹. Includes August target Chinook fishing periods in Knappa Slough.

². Chum possession and sales prohibited beginning September 30, 2013 in all Select Area fishing sites.

Table 26. Angler trips and catch in the Buoy 10 recreational fishery, 1982-2016.¹

Fishery	Chinook			Coho		Total	
	Angler Trips	Catch	Catch/ Trip	Catch	Catch/ Trip	Catch	Catch/ Trip
1982 Buoy 10 Total	17,336	723	0.04	18,857	1.09	19,580	1.13
1983 Buoy 10 Total	7,128	604	0.08	3,574	0.5	4,178	0.59
1984 Buoy 10 Total	67,365	12,177	0.18	74,370	1.1	86,547	1.28
1985 Buoy 10 Total	32,156	2,655	0.08	25,387	0.79	28,042	0.87
1986 Buoy 10 Total	102,190	15,600	0.15	120,422	1.18	136,022	1.33
1987 Buoy 10 Total	124,594	42,100	0.34	47,170	0.38	89,270	0.72
1988 Buoy 10 Total	186,051	30,770	0.17	143,417	0.77	174,187	0.94
1989 C&H Total	7,922	492	0.06	3,195	0.4	3,687	0.47
1989 Buoy 10 Total	144,848	15,900	0.11	78,720	0.54	94,620	0.65
1989 Grand Total	152,770	16,392	0.11	81,915	0.54	98,307	0.64
1990 C&H Total	3,225	54	0.02	28	0.01	82	0.03
1990 Buoy 10 Total	76,411	5,149	0.07	18,435	0.24	23,584	0.31
1990 Grand Total	79,636	5,203	0.07	18,463	0.23	23,666	0.3
1991 C&H Total	2,759	39	0.01	1,151	0.42	1,190	0.43
1991 Buoy 10 Total	168,921	11,549	0.07	207,527	1.23	219,076	1.3
1991 Grand Total	171,680	11,588	0.07	208,678	1.22	220,266	1.28
1992 Buoy 10 Total	115,481	10,655	0.09	43,082	0.37	53,737	0.47
1993 Buoy 10 Total	75,774	5,288	0.07	20,932	0.28	26,220	0.35
1994 Buoy 10 Total	9,253	0	0	1,795	0.19	1,795	0.19
1995 Buoy 10 Total	25,186	607	0.02	5,026	0.2	5,633	0.22
1996 Buoy 10 Total	18,034	1,409	0.08	4,537	0.25	5,946	0.33
1997 Buoy 10 Total	55,725	13,153	0.24	20,357	0.37	33,510	0.6
1998 Buoy 10 Total	29,998	5,784	0.19	3,175	0.11	8,959	0.3
1998 Astoria Bridge Total	11,044	3,484	0.32	3,142	0.28	6,626	0.6
1998 Grand Total	41,042	9,268	0.23	6,317	0.15	15,585	0.38
1999 Buoy 10 Total	49,568	9,850	0.20	8,960	0.18	18,810	0.38
2000 Buoy 10 Total	72,518	6,085	0.08	21,478	0.30	27,563	0.38
2001 Buoy 10 Total	125,829	12,709	0.10	132,035	1.05	144,744	1.15
2002 Buoy 10 Total	84,434	19,438	0.23	6,205	0.07	25,643	0.30
2003 Buoy 10 Total	88,827	16,316	0.18	54,440	0.61	70,756	0.80
2004 Buoy 10 Total	68,818	16,016	0.23	15,169	0.22	31,185	0.45
2005 Buoy 10 Total	55,183	9,287	0.17	6,878	0.12	16,165	0.29
2006 Buoy 10 Total	40,608	1,710	0.04	3,683	0.09	5,393	0.13
2007 Buoy 10 Total	36,064	3,776	0.10	8,356	0.23	12,132	0.34
2008 Buoy 10 Total	32,467	8,349	0.26	8,573	0.26	16,922	0.52
2009 Buoy 10 Total	72,803	5,941	0.08	48,127	0.66	54,068	0.74
2010 Buoy 10 Total	52,300	6,807	0.13	7,980	0.15	14,787	0.28
2011 Buoy 10 Total	49,409	10,919	0.22	7,614	0.15	18,533	0.38
2012 Buoy 10 Total	65,070	18,550	0.29	7,385	0.11	25,935	0.4
2013 Buoy 10 Total	65,767	22,594	0.34	7,620	0.12	30,214	0.46
2014 Buoy 10 Total	107,522	26,788	0.25	57,744	0.54	84,532	0.79
2015 Buoy 10 Total	108,319	36,535	0.34	36,920	0.34	73,455	0.68
2016 Buoy 10 Total	94,950	17,780	0.19	9,182	0.10	26,962	0.28

¹. Includes catch and effort from the 1989-1991 Chinook/Hammond fisheries and 1998 Astoria Bridge fishery.

Table 27. Fall salmon angler trips and catch on the lower Columbia River, August-October, 1980-2016.

Year	Angler Trips	Chinook		Coho		Steelhead	
		Adults	Jacks	Adults	Jacks	Kept	Released
1980	25,262	1,155	390	85	81	213	0
1981 ¹	29,213	1,022	1,174	139	579	776	0
1982 ¹	20,909	117	696	96	803	0	0
1983 ¹	26,817	962	1,250	174	2,329	79	0
1984 ¹	38,837	1,472	1,316	715	538	1,747	684
1985 ¹	44,793	2,032	5,449	1,106	444	3,418	593
1986	47,855	2,146	3,136	4,027	503	3,390	1,188
1987	59,322	4,357	1,437	930	3,047	2,274	1,038
1988	51,831	4,443	1,492	475	1,491	3,905	603
1989	64,911	5,523	935	184	382	3,698	897
1990	57,180	3,568	1,257	351	2,919	2,503	588
1991	51,470	2,640	530	1,090	1,277	4,442	850
1992	48,993	1,871	1,401	586	1,511	6,443	879
1993	50,011	3,694	512	551	52	5,958	1,134
1994 ¹	27,678	229	37	941	83	2,854	710
1995 ¹	50,165	4,563	1,172	199	85	5,067	591
1996	55,437	9,324	448	774	61	3,270	386
1997	64,477	8,447	389	813	504	3,065	494
1998 ¹	65,884	6,993	629	595	574	2,747	564
1999 ¹	70,673	8,652	322	1,276	502	4,046	1,282
2000	80,759	7,620	1,332	1,620	2,429	5,050	1,957
2001	97,253	9,355	804	3,068	381	5,034	2,141
2002	110,796	21,182	757	3,011	367	3,521	1,931
2003	113,330	26,195	465	1,145	21	4,171	2,008
2004 ²	87,404	17,719	497	1,273	62	2,479	1,006
2005 ^{1, 2}	86,594	18,256	184	586	21	2,641	1,182
2006 ^{1, 2}	89,287	13,398	318	1,173	38	4,248	1,723
2007 ^{1, 2}	79,793	8,089	634	881	28	4,746	1,693
2008 ^{1, 2}	80,772	10,675	770	2,248	327	2,591	1,213
2009 ^{1, 2}	117,975	14,711	1,843	3,989	45	7,325	4,380
2010 ^{1, 2}	114,285	17,326	949	1,584	19	6,034	3,394
2011 ^{1, 2}	147,343	28,169	2,551	1,667	17	12,053	7,729
2012 ^{1, 2, 3}	128,831	22,438	4,175	884	95	5,618	3,514
2013 ^{2, 3}	141,481	31,879	2,583	951	240	6,139	6,471
2014 ^{1, 2, 3}	143,946	26,336	2,688	5,761	115	6,375	5,269
2015 ^{1, 2, 3}	131,374	41,525	1,909	995	99	4,212	2,605
2016 ^{1, 2, 3}	133,300	25,133	1,780	1,317	98	1,862	1,168

1. Partial Chinook closure years.

2. One adult Chinook daily bag limit (adopted during all or part of the fishery).

3. Includes 7-day mark-selective fisheries (MSF) in 2012, 2014 and 2015, a 20-day MSF in 2013 and a 21-day MSF in 2016.

Table 28. Mainstem fall Chinook recreational fisheries upstream of Bonneville Dam, 2002-2016.

Bonneville Dam to Hwy 395 Recreational Fishery		
Year	Adult Chinook	Chinook Season
2002	2,961	Aug 1 - Dec 31
2003	4,005	Aug 1 - Dec 31
2004	3,465	Aug 1 - Dec 31
2005	3,515	Aug 1 - Dec 31, Chinook closed Oct 1 - 19
2006	2,224	Aug 1 - Dec 31, Chinook closed Sep 16 - 29
2007	2,763	Aug 1 - Dec 31, Chinook closed Sep 20 - 28
2008	3,125	Aug 1 - Dec 31
2009	3,349	Aug 1 - Dec 31
2010	5,272	Aug 1 - Dec 31
2011	5,212	Aug 1 - Dec 31
2012	5,974	Aug 1 - Dec 31
2013	19,995	Aug 1 - Dec 31
2014	9,864	Aug 1 - Dec 31
2015	13,260	Aug 1 - Dec 31
2016 ¹	5,800	Aug 1 - Dec 31
Hanford Reach Recreational Fishery		
Year	Adult Chinook	Chinook Season
2002	7,325	Aug 16 - Oct 22
2003	6,457	Aug 16 - Oct 22
2004	8,082	Aug 16 - Oct 22
2005	7,542	Aug 16 - Oct 22
2006	4,055	Aug 16 - Oct 22
2007	4,614	Aug 16 - Oct 22
2008	5,638	Aug 1 - Oct 22
2009	6,553	Aug 1 - Oct 15
2010	10,985	Aug 1 - Oct 21
2011	11,614	Aug 1 - Oct 21
2012	13,097	Aug 1 - Oct 21
2013	24,906	Aug 1 - Oct 31
2014	28,679	Aug 1 - Oct 31
2015	33,885	Aug 16 - Oct 31
2016 ²	16,860	Aug 16 - Oct 31

¹ Columbia River from Pasco, WA to Priest Rapids Dam.

² Preliminary.

Table 29. Treaty fishery open area and Spring Creek Sanctuary restrictions during fall season commercial set gillnet seasons, 1995-2016.

Year	Open Area	Spring Creek Sanctuary
1995	Zone 6	Large sanctuary all season
1996	All of Zone 6 except closed below Hood River Bridge Sep 23-28	Large sanctuary all season
1997	All of Zone 6 except closed below Hood River Bridge Sep 9-13	Large sanctuary Aug 7-Sep 6. Enlarged sanctuary from Light #27 to Light #35, Washington shore to mid-channel, Sep 17-20
1998	All of Zone 6 except closed below Hood River Bridge Sep 8-12	Large sanctuary Sep. 1-12. Enlarged sanctuary from Light #27 to Light #35, Washington shore to mid-channel, September 15-28
1999	Zone 6	Small sanctuary all season
2000	Zone 6	Large sanctuary all season
2001	Zone 6	Large sanctuary Aug 28-Sep 8. Small sanctuary Sep 11-29
2002	Zone 6	Large sanctuary Aug 28-Aug 31. Small sanctuary Sep 11-28
2003	Zone 6	Small sanctuary all season
2004	Zone 6	Small sanctuary all season
2005	Zone 6	Small sanctuary all season
2006	Zone 6	Large sanctuary all season
2007	Zone 6	Large sanctuary all season
2008	Zone 6	Large sanctuary Aug 19 – Sept 26. Sept 30-Oct 10 reduced to 50' radius. No sanctuary Oct 20-23
2009	Zone 6	Large sanctuary 5 of 6 weekly fishing periods. No min. mesh restrictions all season
2010	Zone 6	Small sanctuary all season, except no sanctuary final week (Oct 19-22). 8" min. mesh restrictions on final 3 weekly periods
2011	Zone 6	Standard sanctuary first 5 openings. Small sanctuary final two weeks. 8" min. mesh restrictions all season
2012	Zone 6	Standard sanctuary first 4 openings. Small sanctuary last 3 openings. 8" min. mesh restriction all season.
2013	Zone 6	Standard sanctuary first 3 openings. Small sanctuary last 4 openings. 8" min. meshes restriction all season.
2014	Zone 6	Standard sanctuary first 5 openings. Small Sanctuary last 4 openings. 8" min mesh restriction all season
2015	Zone 6	Standard sanctuary first 5 openings. Small sanctuary last two openings. 8" min mesh restriction all season
2016	Zone 6	Standard sanctuary first 4 openings, and 6 th opening. Small sanctuary 5 th opening and last three openings. 8" min mesh restriction for the first seven out of nine total openings.

Table 30. Fall treaty fishery mainstem Columbia River landings, 1980-2016.

Year	Season ²	Fishing Days ³	Numbers Landed ¹			
			Chinook Adults	Coho	Steelhead ⁴	White Sturgeon ⁵
80-84 ave. ⁶	Aug 6- Nov 5	15	41,760	1,640	19,720	260
85-89 ave. ⁷⁻¹¹	Aug 23- Oct 15	36.6	116,620	11,880	63,260	3,125
1990 ¹²	Aug. 8-Sept. 29	34	79,300	2,900	30,700	1,700
1991 ¹³	Aug. 12-Oct. 28	20	51,100	12,800	41,100	--
1992	Aug. 10-Oct. 17	32	28,100	1,000	52,400	100
1993	Aug. 9-Oct. 2	26	30,400	1,000	28,800	100
1994 ¹⁴	Aug. 29-Oct. 15	10	33,700	1,300	15,500	500
1995	Aug. 29-Sept. 15	9	41,400	400	20,400	400
1996	Sept. 2-Sept. 28	17	63,200	700	19,000	300
1997	Aug. 27-Sept. 20	16	65,000	600	22,700	<100
1998	Aug. 25-Sept. 25	22	44,700	1,500	12,600	<100
1999	Aug. 31-Oct. 2	22	77,200	2,300	17,300	0
2000	Aug. 30-Sept. 23	17	52,100	6,300	15,500	0
2001 ¹⁵	Aug. 28-Sept. 29	18	103,900	5,400	29,200	806
2002	Aug 28-Sep 28	18.5	129,700	1,600	13,800	300
2003 ¹⁶	Aug 26-Oct 11	27.5	123,600	5,800	14,900	200
2004	Aug 25-Oct 16	30	127,600	10,300	14,600	64
2005	Aug 22-Sept. 30	25	113,500	5,400	13,700	138
2006	Aug 21-Oct 6	29.5	76,290	7,577	21,130	78
2007 ¹⁷	Aug 22-Oct 6	25.5	36,782	8,030	19,457	90
2008 ¹⁷	Aug 19 – Oct 23	37.0	106,625	21,625	26,339	94
2009 ¹⁷	Aug 24- Oct 1	23.0	98,622	15,675	36,755	34
2010 ¹⁷	Aug 24- Oct 22	25.5	132,642	11,485	26,733	150
2011 ¹⁷	Aug 22- Oct 6	28.5	114,247	22,941	15,034	853
2012 ¹⁷	Aug 21-Oct 4	22.5	82,879	7,070	15,211	109
2013 ¹⁷	Aug 19-Oct 3	27.5	227,568	8,850	17,156	77
2014 ¹⁷	Aug 18-Oct 16	41.5	264,458	40,480	25,551	76
2015 ¹⁷	Aug 17-Oct 2	33.5	258,957	2,956	16,571	13
2016 ¹⁷	Aug 22-Oct 21	40.5	132,167	6,114	13,555	54

1. Includes Spring Creek terminal area fishing since 1975 (1977-83 & 92), sales to the general public and C&S catches beginning in 1994, Klickitat R. dipnets catches during open mainstem seasons, and extended Klickitat River commercial seasons beginning in 1988. Includes mainstem Columbia River landings downstream of Bonneville Dam beginning in 2015 consistent with MOUs/MOAs.

2. For Commercial Gillnet openings - Minimum mesh size: 1970-1974 none; 1975 7-1/2"; 1976-1982 8"; 1983 none; 1984 none, except 8" Oct 9-15; 1985 none, except 8" Sep 14-28; 1986 none, except 8" Sep 6-Oct 4; 1987 none; 1988 none, except 8" Aug 17-27 and Sep 18-24 and 8" and 9" test fishery Sep 28-Oct 1; 1989 8" except none Aug 7-12; 1990 8" except none Sep 3-5, Sep 12-15 below Hood River Br., Sep 17-22, and Sep 24-29; 1991-97 none; 1998 8"; 1999 none except 8" Sep 15-18 and Sep 29-Oct 2; 2000-2002 none. See Table 29 for more details

3. Mainstem commercial gillnet seasons only, unless otherwise noted.

4. Sales to licensed buyers during sockeye and fall seasons only through 1984. Sales to licensed buyers, general public and C&S catch from 1985-present.

5. No sturgeon sales allowed in set net fisheries since 1991. Includes landings in fall set-line fisheries.

6. Includes Nov 1-5 Coho fishery below Klickitat River in 1982.

7. Spring Creek Sanctuary opens to fishing Aug 23-28 and Aug 29-Sep 3.

8. Includes Sep 29-Oct 4 dipnets and experimental gillnet fishery. An additional catch of 1,000 Chinook occurred above Priest Rapids Dam. Over half of the Coho catch (24,100) occurred in the Klickitat River

- dipnet fishery.*
9. *An additional catch of 2,200 Chinook occurred above Priest Rapids Dam.*
 10. *Includes Sep 28-Oct 1 test fishery in John Day Pool. No sturgeon sales allowed after Sep 3. An additional catch of 2,300 Chinook and an estimated 300 steelhead occurred above Priest Rapids Dam. Includes 5,500 Coho captured in an extended Klickitat River dipnets season.*
 11. *No sturgeon sales allowed. An additional catch of 800 Chinook occurred above Priest Rapids Dam. Includes 6,100 Coho captured in an extended Klickitat River dipnets season.*
 12. *An additional 200 Chinook catch occurred above Priest Rapids Dam. Includes 1,900 Coho captured in an extended Klickitat River dipnets season.*
 13. *Includes 5,500 Coho captured in an extended Klickitat River dipnet season.*
 14. *An additional catch of 570 Chinook and 70 steelhead occurred above Priest Rapids Dam. An additional catch of 220 Chinook and 80 steelhead occurred above McNary Dam.*
 15. *Target sturgeon gillnet seasons adopted for Zone 61 (Bonneville Pool) during Nov 14-30 and Zone 63 (John Day Pool) during Nov 14-Dec 7.*
 16. *Target sturgeon gillnet season adopted for Zone 61 (Bonneville Pool) during Dec 1-14. No sturgeon were landed.*
 17. *Includes all fall season harvest – Aug 1-Dec 31.*

Table 31. Fall treaty fisheries catch composition, 2016.¹

Fishery			Chinook ²	Steelhead	Sturgeon	Coho ²	Walleye
Platform, Hook & Line	Weeks 32-34 8/1 – 8/20	Ticket	1,330	834	0	0	7
		Non-Ticket	149	116	0	0	0
	Late Fall (10/22-12/31)		11	70	0	104	0
		Total	1,490	1,020	0	104	7
	Commercial Gillnet	Week 35 8/22 – 8/26	Ticket	8,710	583	0	6
Non-Ticket			877	24	0	9	7
Total			9,587	607	0	7	10
Week 36 8/29 – 9/2		Ticket	20,426	505	0	23	0
		Non-Ticket	2,081	9	8	23	9
		Total	22,507	514	8	46	9
Week 37 9/5 – 9/9		Ticket	43,320	1,468	0	559	1
		Non-Ticket	4,121	173	0	85	1
		Total	47,441	1,641	0	644	2
Week 38 9/12 – 9/16		Ticket	28,669	1,532	0	899	2
		Non-Ticket	2,944	159	7	16	6
		Total	31,613	1,691	7	915	8
Week 39 9/19 – 9/23		Ticket	17,654	1,756	0	741	1
		Non-Ticket	1,736	480	3	85	1
		Total	19,390	2,236	3	826	2
Week 40 9/26 – 9/30		Ticket	7,780	2,071	0	519	0
		Non-Ticket	836	402	11	55	5
		Total	8,616	2,473	11	574	5
Week 41 10/3 – 10/7		Ticket	4,133	1,293	0	914	1
		Non-Ticket	414	257	25	114	0
		Total	4,547	1,550	25	1,028	1
Week 42 10/10 – 10/14		Ticket	1,946	693	0	1,202	2
		Non-Ticket	135	372	0	197	2
		Total	2,081	1,065	0	1,399	4
Week 43 10/17 – 10/21		Ticket	1,381	312	0	458	9
		Non-Ticket	96	446	0	105	9
		Total	1,477	758	0	563	18
Total			147,259	12,535	54	6,010	59
Grand Total			148,749	13,555	54	6,114	66

^{1.} Ticketed catch estimates based on preliminary landings. Non-ticketed catch includes C&S (take home) and sales directly to the public (over the bank sales). Includes sales from Zone 6 and downstream of Bonneville Dam, consistent with state/tribal MOUs/MOAs. Commercial gillnet catch includes platform and hook and line catch during the statistical week that the gillnet opening occurred.

^{2.} Includes adults and jacks.

Table 32. Aerial set net counts for Zone 6 treaty Indian fall gillnet salmon fisheries during statistical weeks, 35-40, 1999-2016.

Year	Average	Minimum	Maximum
1999	435	366	468
2000	527	485	626
2001	370	296	452
2002	364	306	436
2003	275	183	331
2004	231	113	297
2005	339	187	450
2006	387	205	502
2007	429	205	528
2008	555	443	691
2009	619	403	707
2010	634	441	758
2011	588	434	672
2012	629	343	762
2013	595	403	726
2014	499	412	571
2015	520	401	671
2016	542	423	703

Table 33. Fall season treaty impact rates on wild and total B-Index (since 2008) upriver summer steelhead, 1999-2016.¹

Year	Actual Wild Impacts			B-Index allowed	
	A-Index	B-Index	Total B	Wild	Total B
1999	5.4%	12.6%		15.0%	
2000	4.3%	14.3%		15.0%	
2001	4.0%	11.5%		15.0%	
2002	2.7%	3.4%		15.0%	
2003	2.5%	14.9%		15.0%	
2004	3.2%	11.1%		15.0%	
2005	3.8%	12.3%		15.0%	
2006	5.2%	16.0%		15.0%	
2007	3.6%	11.6%		15.0%	
2008	4.5%	14.4%	15.2%	NA	15%
2009	5.2%	15.4%	16.8%	NA	20%
2010	4.0%	13.4%	15.7%	NA	20%
2011	7.2%	31.0%	21.1%	NA	20%
2012	7.6%	18.6%	13.5%	NA	15%
2013	6.8%	14.0%	14.0%	NA	13%
2014	7.5%	15.6%	12.2%	NA	20%
2015	6.3%	13.7%	12.1%	NA	13%
2016	10.0%	20.8%	10.1%	NA	20%
5-yr Ave	7.6%	16.5%	12.4%		16%
10-yr Ave	6.3%	16.8%	14.5%		

¹. Beginning in 2008 under the U.S. v Oregon Management Agreement, treaty fisheries during the fall season are managed for total B-Index impacts (not just wild). The result is that treaty and non-treaty impacts are no longer additive when comparing to allowed rates. All data subject to change. Includes sales to licensed buyers only prior to 1994. Includes public sales and C&S catch beginning in 1994.

². Treaty harvest is not corrected for impacts to unclipped hatchery-origin fish and is therefore an over-estimate of the true wild impact rate.

Table 34. Fall season non-treaty harvest and impact rates on wild upriver summer steelhead, 1999-2016.¹

Year	Wild Summer Steelhead		Actual Impacts		Impacts Allowed	
	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index
1999	367	49	0.6%	1.3%	2%	2%
2000	656	127	1.0%	1.5%	2%	2%
2001	857	139	0.6%	1.2%	2%	2%
2002	618	385	0.7%	1.2%	2%	2%
2003	658	130	1.0%	2.0%	2%	2%
2004	600	122	1.0%	1.3%	2%	2%
2005	511	168	0.9%	1.8%	2%	2%
2006	704	137	1.1%	1.6%	2%	2%
2007	867	294	1.1%	3.3%	2%	2%
2008	519	229	0.6%	1.2%	2%	2%
2009	1,537	334	1.0%	2.4%	2%	2%
2010	935	392	0.8%	1.8%	2%	2%
2011	1,610	170	1.6%	2.2%	2%	2%
2012	773	170	1.4%	2.5%	2%	2%
2013	1,430	97	1.6%	3.3%	2%	2%
2014	1,549	152	1.4%	1.1%	2%	2%
2015	1,172	90	1.4%	1.5%	2%	2%
2016	352	48	1.1%	0.7%	2%	2%
5-yr Ave	1,055	111	1.4%	1.8%	2%	2%
10-yr Ave	1,074	198	1.2%	2.0%	2%	2%

1. Based on A-Index and B-Index run sizes at Bonneville Dam. All data reported as incidental release mortalities for non-treaty commercial and recreational fisheries from the Columbia River mouth upstream to Hwy 395 Bridge near Pasco, Washington (plus a portion of the harvest in select tributaries to account for 'dip-in' fish) during August through October. Data includes area upstream of The Dalles Dam during Nov-Dec. Data since 2016 is preliminary and all data is subject to change.

Table 35. Lower Columbia Natural (LCN) Coho ocean and in-river exploitation rates, 2005-2016.

Exploitation Rates				
Year ¹	Ocean	Columbia ²	Actual	Allowed
2005	11%	7%	18%	21%
2006	7%	7%	13%	15%
2007	12%	7%	19%	20%
2008	4%	4%	7%	8%
2009	11%	11%	21%	20%
2010	8%	7%	14%	15%
2011	6%	8%	14%	15%
2012	10%	3%	13%	15%
2013	10%	3%	13%	15%
2014	12%	5%	17%	23%
2015	17%	7%	24%	23%
2016	8%	2%	9%	18%

¹ Coho ESA-listed in August 2005.

² Includes non-treaty mainstem and Select Area commercial and sport fisheries.

Table 36. Lower Columbia River tule fall Chinook exploitation rates, 2002-2016.¹

Year	Ocean	Columbia ¹	Total	Allowable
2002				49%
2003				49%
2004				49%
2005				49%
2006	35%	11%	46%	49%
2007	41%	9%	50%	42%
2008	27%	7%	35%	41%
2009	23%	11%	34%	38%
2010	29%	6%	35%	38%
2011	24%	11%	35%	37%
2012	33%	10%	43%	38%
2013	24%	9%	33%	41%
2014	33%	7%	40%	41%
2015	28%	7%	35%	41%
2016	26%	10%	36%	38%

¹. Fall season non-treaty mainstem fisheries.

Table 37. ESA impact summary for fall season fisheries, 2016.¹

Management Guidelines	Pre-Season Planned		Post-Season Actual	
	ESA Allowed	Total	ESA Allowed	Total
Fall Chinook¹				
Snake River Wild	45%	44.76%	45%	37.9%
Non-Treaty	15%	15.2%	15%	14.6%
Treaty	30%	30.1%	30%	23.3%
LCR Tule ER (Ocean and Columbia R.)	41%	38.9%	41%	36.0%
Upriver Summer Steelhead²				
Non-Treaty Wild A-Index Steelhead	2%	1.2%	2%	1.1%
Non-Treaty Wild B-Index Steelhead	2%	2.0%	2%	0.7%
Treaty Total B-Index Steelhead	15%	15.0%	20%	10.1%
LCN Coho ER (Ocean and Columbia R.)	18%	13.0%	18%	9.4%
Lower Columbia Chum	5%	1.4%	5%	0.0%

¹. Adults only, based on updated catch estimates. All data preliminary. Non-treaty data includes fisheries from Buoy 10 upstream to Hwy. 395, near Pasco, WA.

². Non-treaty summer steelhead impacts include tributary catch from “dip-ins”.