



*Washington
Department of*
**FISH and
WILDLIFE**

**2023 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

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INTRODUCTION

This report describes fall fisheries in the mainstem Columbia River and includes a review of those fisheries that occurred in 2022 and expectations for 2023 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/Joint State hearing. The first Columbia River Compact Hearing of the 2023 fall management period is scheduled for 10:00 a.m. Wednesday July 18. The *U.S. v Oregon* Technical Advisory Committee (TAC) has contributed to and reviewed this report.

COMPACT and JOINT STATE PROCESS

The Columbia River Compact is an agreement between the states of Oregon and Washington through which the two states set commercial fishing regulations for concurrent jurisdiction waters of the Columbia River. The Columbia River Compact was established in 1915 by the respective state legislatures to resolve the difficulties which arose from the states unilaterally establishing commercial fishing seasons and regulations. The Compact provides that neither state may make, change, alter, or amend its fishing regulations without the consent and approbation of the other. Congress ratified the Compact in 1918.

The Compact is interpreted as being applicable only to commercial fisheries; however, in practice, the states also apply the principle of joint state management to regulation of recreational fisheries occurring in concurrent jurisdiction waters of the Columbia River.

Typically, public hearings are convened to provide a forum in which the states may discuss, negotiate, and reach agreement on specific fishing regulations. The states are typically represented by delegates of 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 fisheries.

When addressing regulations for Columbia River fisheries, the states consider the effect on escapement, treaty rights, and the impact on species listed under the Endangered Species Act (ESA; Table 1). Working together under the principles of the Compact, the states have the responsibility to address the allocation of limited resources between recreational, commercial, and treaty 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 18 hearing, fall-season Select Area and mainstem commercial fisheries plus fall-season treaty platform and hook-and-line fisheries will be under consideration. A second hearing is expected in mid-August to consider treaty mainstem commercial fisheries. Additional Compact and/or Joint State hearings will be scheduled throughout the fall management period as in-season 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 (Figures 1 & 4).

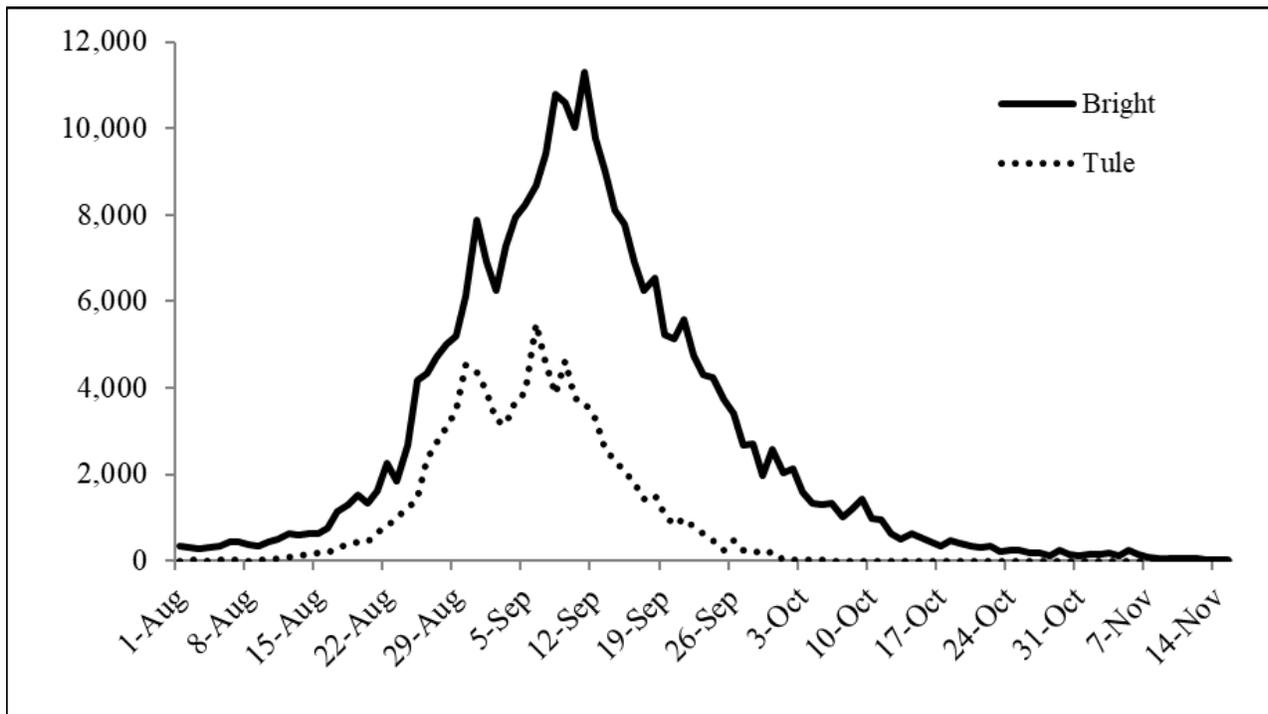


Figure 1. Average (2013-2022) daily passage of fall Chinook at Bonneville Dam.

Columbia River fall Chinook are comprised of seven management components: Lower River Hatchery (LRH), Lower River Natural-Origin (LRW), Select Area Bright (SAB), Bonneville Pool Hatchery (BPH), Upriver Bright (URB), Pool Upriver Brights (PUB), and Lower River Brights (LRB). The LRH and BPH components are considered tule stocks, and the remainder are considered bright stocks. General destinations of these various stock components are illustrated in Figure 2.

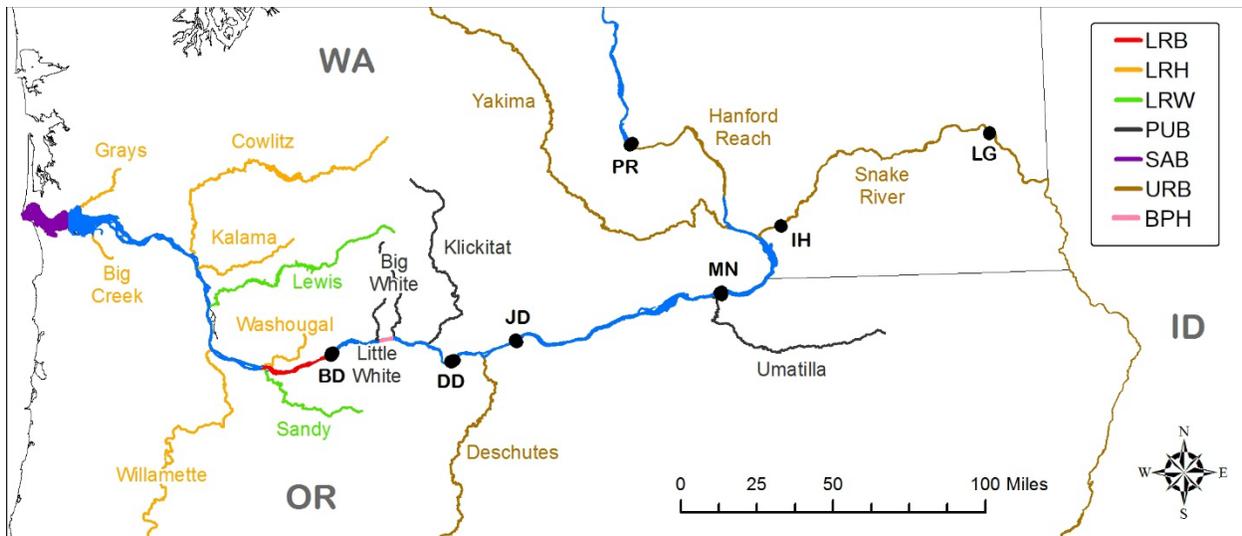


Figure 2. Fall Chinook terminal escapement destinations color coded by management stock (legend at top right of figure). Major dams along the mainstem Columbia River and Snake River are indicated by two letter abbreviations (BD = Bonneville Dam, DD = The Dalles)

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 natural-origin (SRW) fall Chinook are a sub-component of the URB stock. PUBs are a bright stock reared at Little White Salmon (LWSNFH), 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 National Fish Hatchery (SCNFH) 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 since 2009 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 1).

The lower Columbia River (LCR) run is comprised of stocks produced downstream of Bonneville Dam, and includes LRH, LRW, LRB, and SAB stocks. Of the four 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 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. The LRBs are a natural stock that spawn in the mainstem Columbia River approximately three miles downstream from Bonneville Dam. The LRB stock is closely related to URBs and is thought to have originated from mid-Columbia or upriver bright stocks. SABs are a hatchery stock that originated from Rogue River stock fall Chinook egg transfers during 1982-1986. Production of this stock is confined to Youngs Bay, with releases occurring from ODFW's Klaskanine Hatchery and Clatsop County Fisheries' (CCF) net pens.

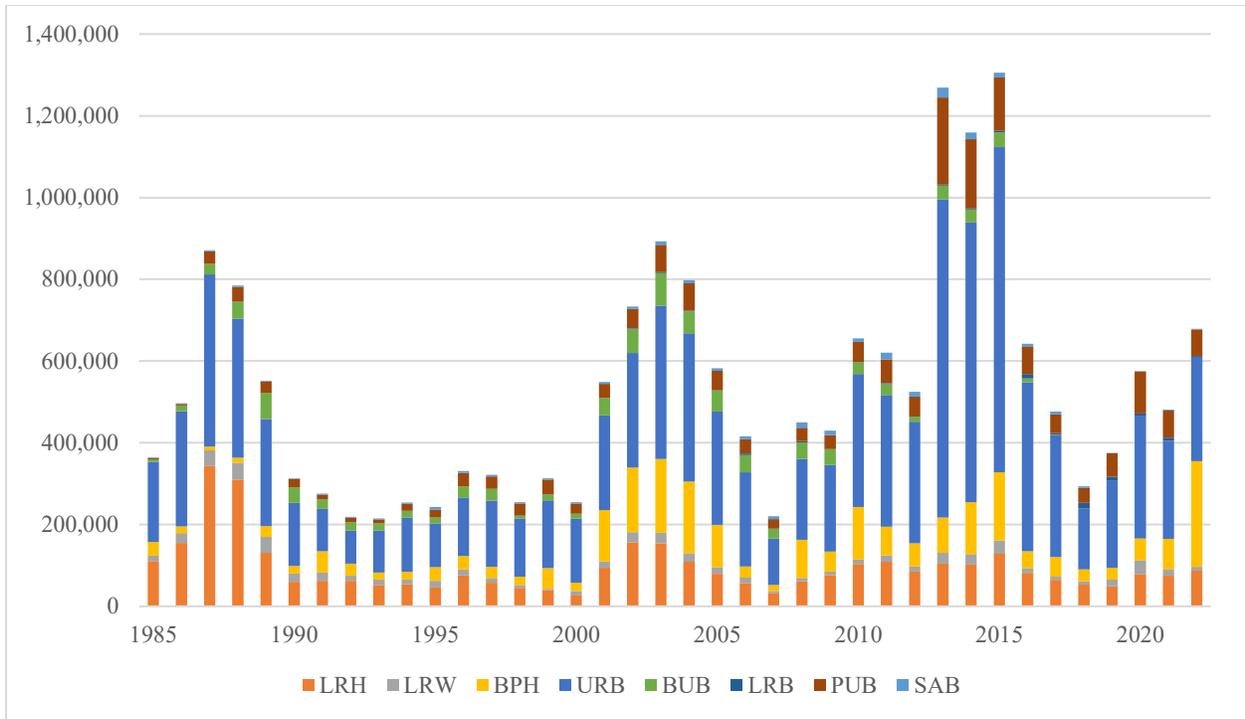


Figure 3. Minimum Adult Fall Chinook Run Entering the Columbia River

2022 Returns

The total Columbia River fall Chinook adult return during 2022 was 679,059 fish. The return was 96% of the recent 10-year average (2012-2021) return of 710,300 adults, and greater than the preseason forecast of 485,500 fish. The LRH, BPH, SAB, and URB returns exceeded preseason forecasts, while LRW, LRB, and PUB returns came in under forecasts. Passage at Bonneville Dam totaled 504,091 adults, with a peak daily count of 33,607 adult fish. Forecasted and actual returns for 2022 are presented in Table 2. Historical returns by stock are presented in Tables 3 and 4. Forecast accuracy is presented in Table 4. Recent-year average Chinook passage at Bonneville Dam is illustrated in Figures 1 and 4.

The 2022 LRH return was 87,542 adults, 119% of forecast and 107% of the recent 10-year average of 82,120 adult fish. Just over 47,100 adult fish returned to Oregon and Washington hatcheries downstream of Bonneville Dam, exceeding the broodstock goal of 13,200. LRH hatchery escapements included approximately 20,900 adult fish to Washington hatcheries (5,400 goal) and about 26,300 adult fish to Oregon hatcheries (6,000 goal). A tule production program was initiated in 2008 at Bonneville Hatchery. Eggs were initially transferred from SCNFH 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 also occur from the Deep River net pens and Klaskanine Hatchery. Naturally-spawning LRH fall Chinook accounted for an estimated 16,000 adults in Washington tributaries and 6,600 adult fish in Oregon tributaries. Natural spawners may include a mix of hatchery and natural-origin fish.

The 2022 LRW return totaled 9,374 adults. The return was 86% of forecast and 49% of the recent 10-year average return of 19,360 fish. The natural spawning escapement to the North Fork Lewis River of 6,700 exceeded the escapement goal of 5,700 LRW adults.

The 2022 BPH return of 258,271 adults was 280% of forecast and 364% of the recent 10-year average return of 71,040 fish. Adult returns of BPH included 85,300 fish to SCNFH, which exceeded the escapement goal of 6,000 adults. An additional 800 adult BPH strayed into Bonneville Hatchery. Naturally-spawning BPH fall Chinook accounted for an estimated 4,100 adult fish in Washington tributaries which may include a mix of hatchery and natural-origin fish.

The 2022 URB return of 254,880 adults was 111% of the forecast and 61% of the recent 10-year (2012-2021) average return of 416,640. The URB return comprised 38% of the Columbia River fall Chinook return. The McNary Dam passage of 155,651 adult fall Chinook exceeded the *U.S. v OR* management goal of 60,000 fish. The 2022 Hanford Reach fall Chinook spawning escapement of 27,890 adult fish was 28% of the recent 10-year average of 99,120 adults. The Deschutes River return of 14,660 adults was 105% of the recent 10-year average of 13,900 adults. The SRW fall Chinook return of 18,945 adults was 172% of forecast and 109% of the 2012–2021 average of 17,400 fish (Table 5). The SRW escapement to Lower Granite Dam totaled 13,309 adult fish.

The 2022 adult return included 3,039 LRB stock and 64,622 PUB stock. The LRB return was 35% of the forecast and 48% of the recent 10-year average return of 62,010 fish. The PUB return was 93% of the forecast and 69% of the recent 10-year average of 94,100 fish. PUB hatchery escapement included 10,100 fish to LWSNFH. PUB natural-spawn escapement totaled 12,400 fish in Washington tributaries upstream of Bonneville Dam.

The 2022 SAB return of 1,331 adults was 217% of forecast but only 15% of the recent 10-year average of 8,000 fish. The majority (97%) of SABs returning in 2022 were harvested in Columbia River fisheries or returned to hatcheries.

2023 Forecast

The forecast for the 2023 fall Chinook adult return to the Columbia River totals 554,000 (Table 2). The forecast is 82% of the 2022 actual return and 76% of the 2013–2022 average return (725,660 adults). Bright stocks represent 62% of the total forecast. The LRH forecast of 77,100 adults is 88% of the 2022 actual return, and below the recent 10-year average (82,400 adults). The LRW forecast of 8,700 adults is 46% of the recent 10-year average of 19,090 adults. The BPH forecast of 135,300 adults is 148% of the recent 10-year average of 91,180 adults. The forecasted return of 278,500 URB adults represents 50% of the projected total return and is 68% of the recent 10-year average (412,350 adults). Included in the URB forecast is the SRW forecast of 13,300 adult fish, which is 77% of recent 10-year average (17,370 adults) and 70% of last year's return. The LRB forecast of 4,400 adults is 68% of the recent 10-year average (6,460 adults), and the PUB forecast of 49,400 adults is 52% of the recent 10-year average (95,630 adults). The SAB forecast of 600 adult fish is 8% of the recent 10-year average return (7,340 adults).

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 tributaries downstream of Bonneville Dam, and a few systems 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 downstream of Bonneville Dam during May and June are categorized as lower river Skamania stock (destined for areas downstream of Bonneville Dam).

Upriver summer steelhead include hatchery and wild fish that pass Bonneville Dam during April through October. Fish passing from April through June are categorized as Skamania stock steelhead, destined mainly for tributaries within Bonneville Pool. Production of Skamania stock steelhead in hatcheries upstream of Bonneville Dam has decreased from historical levels. Steelhead caught in the Bonneville Pool from April 1 through June 30 are categorized as upriver Skamania Steelhead.

Steelhead that pass Bonneville Dam during July through October are categorized as A-Index or B-Index fish for the purpose of managing fisheries, based on fork length (A-Index <78 cm, B-Index \geq 78 cm). B-Index steelhead primarily return to tributaries in the Salmon and Clearwater rivers in Idaho and typically 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. Recent run-timing distribution at Bonneville Dam of A-Index and B-Index summer steelhead is shown in Figure 3. Steelhead caught in the mainstem Columbia River downstream of the Snake River from July 1 through October 31 are considered A-Index or B-Index steelhead. Additionally, steelhead caught in the mainstem Columbia River between The Dalles Dam and the mouth of the Snake River from November 1 through June 30 are also considered A-Index or B-Index steelhead.

Summer steelhead passage over Bonneville Dam is shown in Table 6, and passage over Lower Granite Dam is shown in Table 7. Index classification and hatchery-/natural-origin determination are dependent on biological sampling at the two hydroelectric facilities mentioned. See Table 2 for details on steelhead forecasts.

Steelhead harvest from non-treaty recreational fisheries occurs throughout the Columbia River basin and from treaty Indian fisheries in Zone 6 (between Bonneville and McNary Dams) and just downstream of Bonneville Dam. Recreational steelhead fisheries are mark-selective, allowing retention of fin-clipped fish only. Retention of steelhead in non-treaty commercial 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. The majority of the treaty Indian catch occurs during the fall gillnet fishery but catch also occurs in treaty platform and hook-and-line fisheries. Treaty Indian steelhead harvest is not mark-selective. Since the 1990s, the tribes have reduced catch of natural-origin steelhead during fall treaty Indian gillnet seasons.

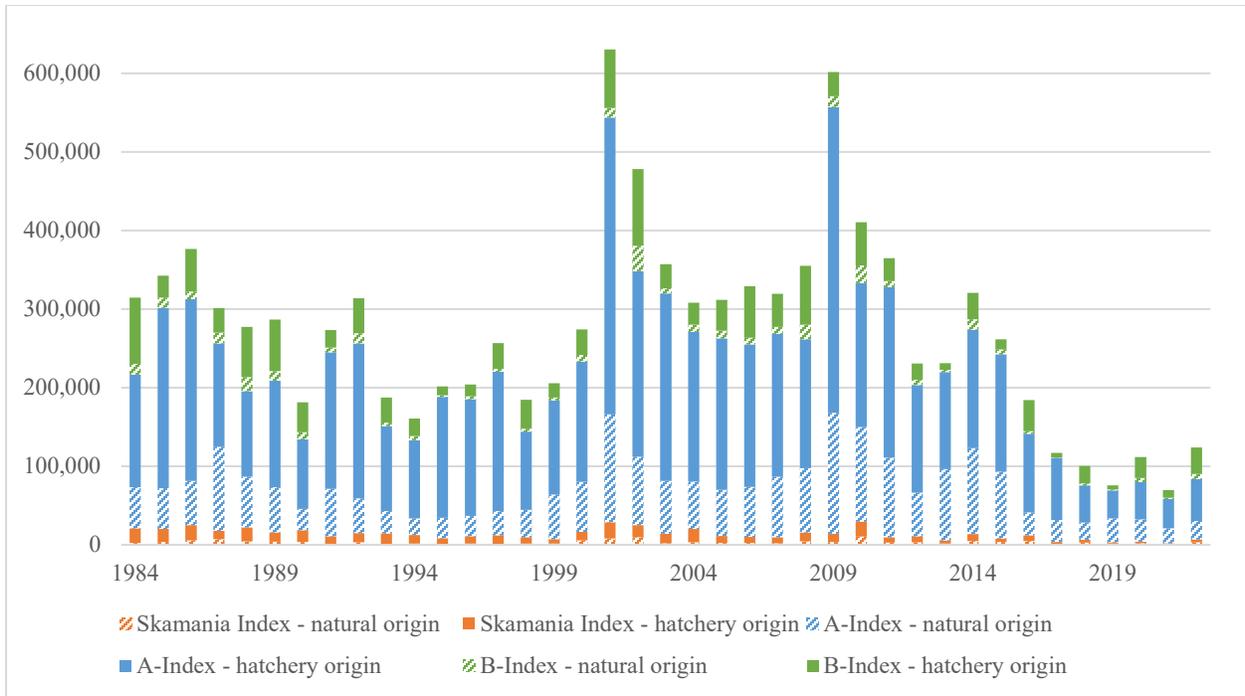


Figure 4. Minimum Upriver Summer Steelhead Run at Bonneville Dam

2022 Returns

The total upriver summer steelhead return to Bonneville Dam (April-October passage) in 2022 was 123,871 fish, and included 6,902 Skamania stock, 76,691 A-Index, and 40,278 B-Index. The 2022 return was 124% of the forecast of 99,700 upriver steelhead. Upriver steelhead passage at Bonneville Dam in 2022 was 73% the recent 10-year average return of approximately 170,300 fish. Natural-origin passage totaled 32,905 fish, which represented 27% of the return, compared to the recent 10-year average proportion of 33% (56,627 fish). Return estimates in this report are adjusted for unclipped hatchery fish based on sampling data collected at the Bonneville Dam adult fish trapping facility (AFF). From July through October, 845 steelhead were biologically sampled by CRITFC. Sampling at the AFF was halted for temperature restrictions for 13 days in August and September in 2022. Sampling is limited when temperatures exceed 70 °F and is ceased when water temperatures exceed 72°F.

The majority of summer steelhead passage at Bonneville Dam occurs during July through October. During these months in 2022, an estimated 116,969 steelhead passed Bonneville Dam, compared to the recent 10-year average of 163,000 fish. Passage during 2022 was 50% complete on August 17, compared to the recent 10-year average 50% passage date of August 18.

The upriver Skamania return to Bonneville Dam totaled 6,902 fish, including 2,979 (43%) natural-origin fish. The Skamania return was 99% of the recent 10-year average of 6,972 fish. The A-Index return of 76,691 was 55% of the recent 10-year average of 140,355 fish. Natural-origin fish represented 30% of the A-Index return, which was less than the recent 10-year average of 35%. The B-Index return totaled 40,278 fish, which was 176% of the recent 10-year of 22,928 fish. Natural-origin fish represented 17% of the B-Index return, slightly less than 10-year average of 19%.

The steelhead run year at Lower Granite Dam is from July 1 through June 30 of the following year. The preliminary 2022-2023 steelhead passage at Lower Granite Dam was 74,978 fish. Based on passage and visual sampling data, the preliminary composition was 28,572 B-Index fish (25% natural-origin) and 34,919 A-Index fish (15% natural-origin). About 30% of the unclipped B-Index fish were hatchery origin and about 11% of the unclipped A-Index fish were hatchery origin.

2023 Forecast

The 2023 forecast for the summer steelhead return to Bonneville Dam is 67,800 upriver fish, including 4,400 Skamania stock (2,100 natural-origin), 55,400 A-Index (17,300 natural-origin), and 8,000 B-Index (1,300 natural-origin). Overall, the forecast is 42% of the recent 10-year average return of 159,560 fish. The Skamania, A-Index, and B-Index forecasts are 67% and 43%, and 33% respectively, of the recent 10-year average returns (Tables 2 and 6).

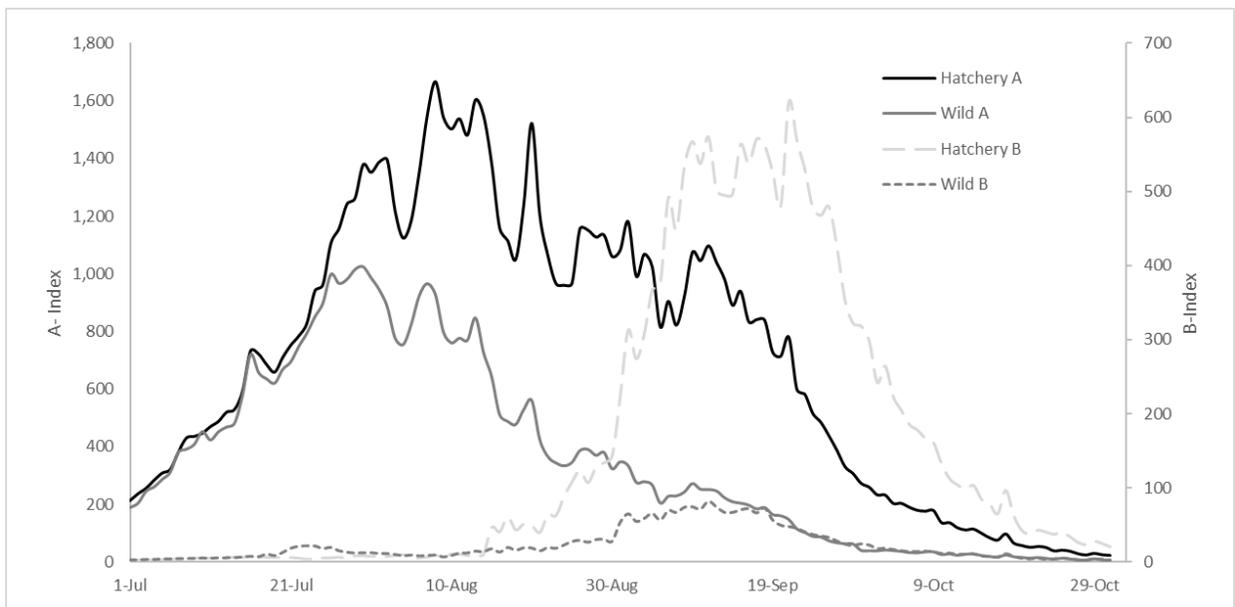


Figure 5. Estimated ten-year average (2013-2022) daily passage of A- and B-Index summer steelhead at Bonneville Dam.

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 (Figure 4). 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).

Columbia River tributaries in Oregon 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 LCR tributaries from December through February, beginning as early as 1949, indicated that natural-origin 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. Higher numbers of unmarked Coho have been observed in LCR tributaries since 2000, indicating that some remnant Oregon populations may persist in the LCR 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 River 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 LCR 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 now passing Bonneville Dam are from the *U.S. v. Oregon* Management Agreement mandated hatchery releases of 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 8, 9, and 10 for details on harvest, escapement, passage, and abundance.

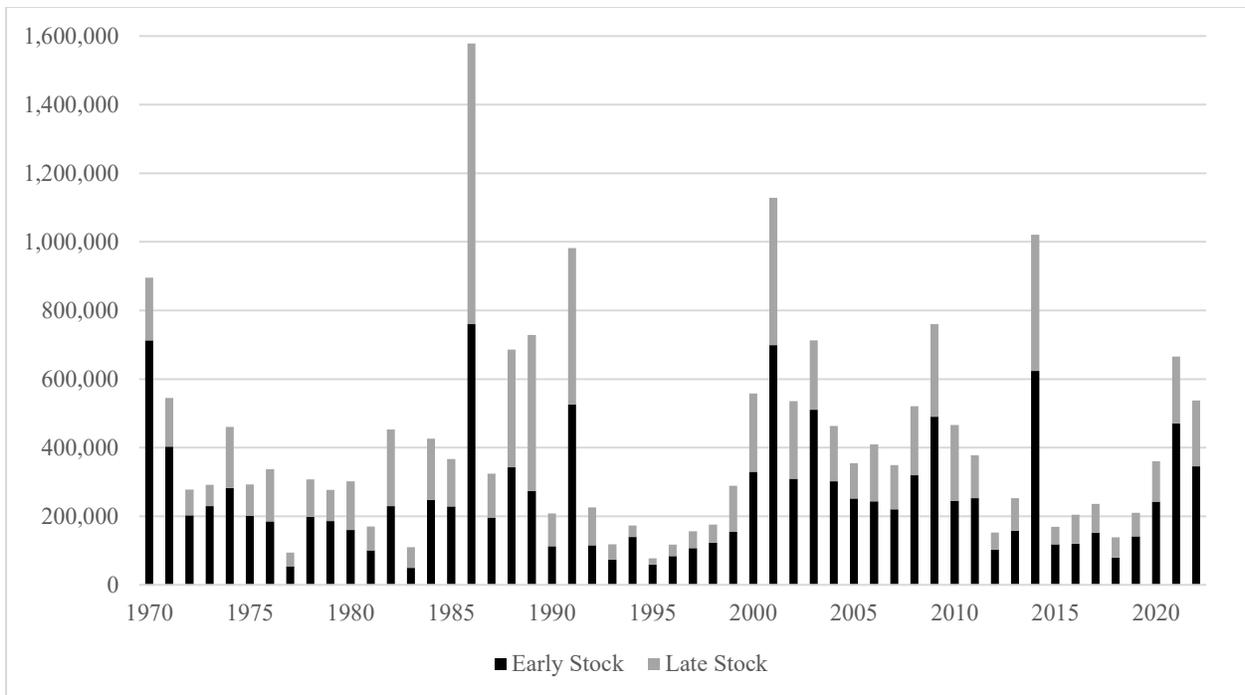


Figure 6. Minimum Adult Coho Run Entering the Columbia River

2022 Returns

The 2022 Columbia River Coho return of 540,067 adult fish was comprised of 354,301 early-stock fish and 185,766 late-stock fish (Table 2) and represented 79% of the forecasted return of 683,700 adults. The early stock Coho return was 80% of forecast, and the late stock return was 76% of forecast. Hatchery escapement to Washington and Oregon facilities downstream of Bonneville Dam (approximately 181,600 fish) was 95% of the recent 10-year average. The Bonneville Dam passage count of 168,086 adult Coho was 69% of the 2021 count. Passage represented 79% of the estimated total ocean abundance of Columbia River Coho destined for areas above Bonneville Dam. The preliminary estimate for natural escapement of LCR Coho is 46,900 adults, compared to the recent 10-year average of 31,900 fish.

The 2023 forecast for the Columbia River Coho return is 595,300 adults, which includes 354,000 early stock and 241,300 late stock (Table 2). The forecast is 157% of the recent 10-year average of 379,600 fish. The individual forecasts for early and late stock Coho are 145% and 179% of the recent 10-year averages, respectively. Bonneville Dam passage is expected to be about 272,900 adult Coho, representing 60% of the forecasted total ocean abundance of Columbia River Coho destined for areas upstream of Bonneville Dam. Broodstock escapement needs of 4,900 early stock and 11,500 late stock adults to hatcheries downstream of Bonneville Dam are expected to be achieved.

Chum

Chum salmon (Chum) 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 Washington and one in Oregon) release fed-fry that contribute to the lower Columbia population. The Washougal/Vancouver 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 Chum to ODFW's Big Creek Hatchery (BCH) provided fed-fry for release in Oregon waters. In fall 2014, Chum 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 occurred through 2014, and then again 2018 and 2019.

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. In 2013, the reporting metric for the LCR Chum abundance index was changed from fish/mile to estimates of escapement. Table 12 has been updated to report escapement estimates for the major populations of LCR Chum. The combined estimated return for the major populations in 2022 of approximately 28,590 fish is greater than the recent 10-year average return (17,955 adults). While variable, reported returns to spawning areas outside of the major populations of LCR Chum generally number less than 200 fish annually.

In the fall of 2022, returns of Chum to Big Creek Hatchery were the second highest observed in at least 40 years (n=1,599). This enabled the Program to Restore Oregon's Chum Salmon (PROCS) to meet fry release goals and experimentally reintroduce Chum in the Big Creek and Clatskanie River Recovery Populations. Because of the large return no egg transfers from Grays River Hatchery were needed this year. For the conservation broodstock, a total of 350 Chum (176 females and 174 males) were spawned over four days in November 2022, resulting in 508,954 eggs being collected. Otoliths are currently being analyzed to verify the origin of the adult fish, but parentage-based tagging has revealed that 67% were wild/unmarked and 33% were hatchery/marked. Most adults spawned for the conservation broodstock in 2022 were age-4 (85; BY 2018). In the spring of 2023, a total of 422,955 fed-fry were released into Big Creek on March 29 and April 10.

After broodstock collection goals were met, PROCS experimented with several reintroduction techniques. First, an additional 40 Chum (20 females and 20 males; ~50,000 eggs) were spawned

for use in a remote site incubator (RSI). These eggs were raised to the eyed stage at Big Creek Hatchery, given a unique thermal mark, and transferred to the RSI in Page Creek (Clatskanie River Recovery Population) to develop into fry. Subsequent fry could leave volitionally and ideally would imprint and return successfully to Page Creek as adults. Second, another 68 Chum (34 females and 34 males; ~85,000 eggs) were spawned for experimental release as unfed fry. These eggs were given a unique thermal mark and raised to the fry stage at the hatchery before being released. Unlike the conservation broodstock fry which are ponded and fed at Big Creek Hatchery before being released, these fry were released unfed into two creeks. A portion were released into Page Creek (n=50,623) near the RSI location, so that PROCS could compare the two reintroduction strategies. The remaining unfed fry (n=24,882) were released into Gnat Creek (Big Creek Recovery Population), so that PROCS could measure the success of unfed fry releases versus adult outplanting. Finally, the remaining adults returning to the hatchery were transported to spawn volitionally in nearby streams (n=1,133). In the Big Creek Recovery Population, 479 Chum (307 females and 172 males) were taken to Bear and Little Bear creeks, and 45 fish (28 females; 17 males) were put in Gnat Creek. In the Clatskanie River Recovery Population, adults were taken to the Clatskanie River (403: 217 females and 186 males), Conyers Creek (146: 79 females and 67 males), and Stewart Creek (60: 26 females and 34 males) to spawn.

Chum were observed in 12 spawning reaches via surveys conducted by Oregon Salmonid Inventory and Sampling (OASIS) and PROCS projects in the fall 2022. Adults were observed and recovered in the Lewis and Clark, SF Klaskanine, and Wallooskee rivers in the Youngs Bay Recovery Population, and in Bear, Little Bear, Big, and Plympton creeks in the Big Creek Recovery Population. Additionally, outplanted adults were observed by OASIS survey crews in the Clatskanie River and in Conyers Creek in the Clatskanie River Recovery Population.

PROCS operated screw traps in Bear Creek, Conyers Creek, and the Clatskanie River in the spring of 2023. Preliminary estimates suggest that ~120,000 Chum fry outmigrated from the Clatskanie River, ~140,000 Chum fry were produced in Bear Creek, and ~1,000 Chum fry were exiting Conyers Creek in 2023. Although Conyers Creek seems to have produced fewer fry than last year, the Clatskanie River and Bear Creek traps had record-breaking catches for the project due to the outplanting that occurred last fall. In addition to the screw traps, PROCS has begun monitoring Chum presence in Oregon with environmental DNA (eDNA). In the fall of 2022, five sites from the Scappoose Creek, Sandy River, and Clackamas River Recovery Populations were sampled for Chum eDNA with the help of partners from Columbia Soil and Water Conservation District, East Multnomah Soil and Water Conservation District, Greater Oregon City Watershed Council, and the Clackamas River Basin Council. No positive detections were found, but eDNA samples have been archived for use in other projects or to detect other species. A select number of these sites were again sampled in the spring of 2023 to ensure that positive detections weren't missed last fall (i.e., if Chum fry are detected in the spring, then Chum adults were missed the previous fall). PROCS has funding through 2024 to continue Chum eDNA monitoring.

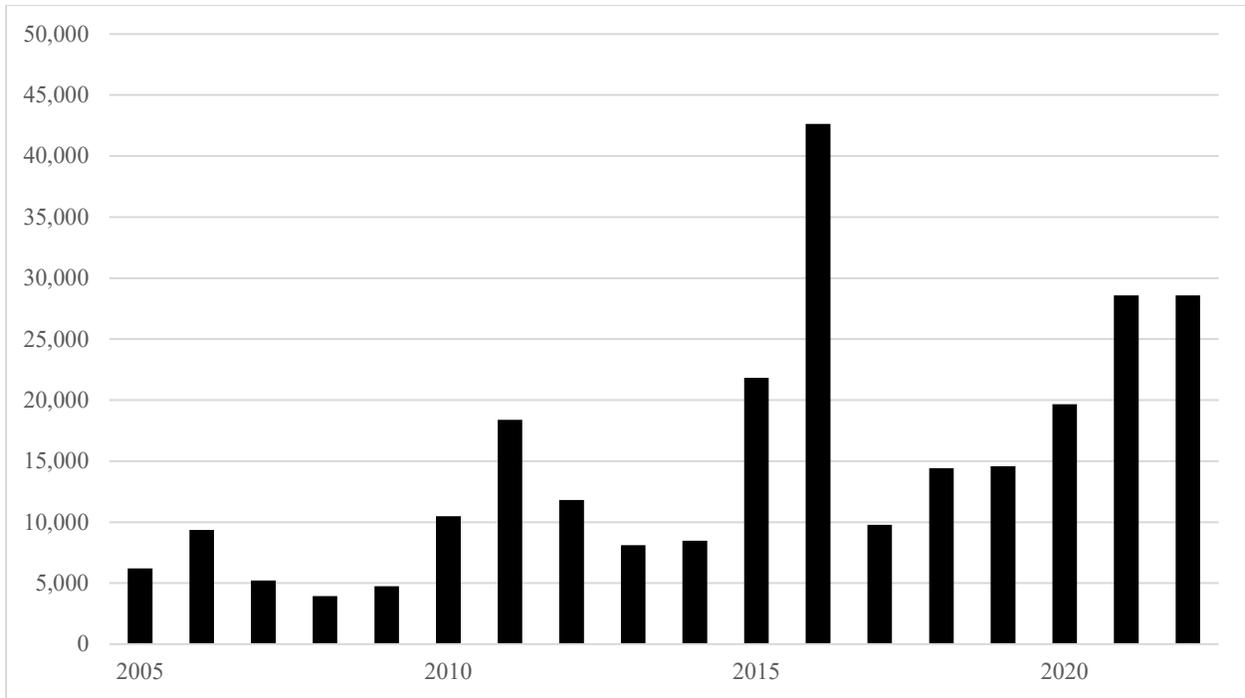


Figure 7. Minimum Adult Chum Entering the Columbia River

MANAGEMENT GUIDELINES

Endangered Species Act

Status reviews occurring since 1991 have been conducted in the Columbia Basin on ESA-listed salmon and steelhead (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 since 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, as described in the 2018-2027 *U.S. v Oregon* Management Agreement (2018–2027 MA). This BA was submitted in June 2017, and a Biological Opinion (BO) was subsequently issued by the National Marine Fisheries Service (NMFS) in February 2018. The current BO expires after December 31, 2027, concurrent with the 2018–2027 MA.

Columbia River Salmon Management Guidelines

The parties to *U.S. v Oregon* are currently operating under the 2018–2027 MA. This agreement provides specific fishery management constraints for upriver spring, summer, and fall Chinook, upriver Coho, Sockeye, and upriver steelhead. Excerpts from the 2018–2027 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 2018–2027 MA. Table A4 only addresses impacts to B-Index steelhead in fall season fisheries; however, the BO does address ESA impact limits to A-Index steelhead in the fall season as well as steelhead impacts in other management periods. All mainstem non-treaty fall fisheries (downstream of the Highway 395 Bridge near Pasco, Washington) occurring from August through December are managed to not exceed impact rates of 2% each on natural-origin A-Index and natural-origin B-Index steelhead. Treaty fisheries are managed based on the abundance-based harvest rate schedule for the aggregate return of hatchery- and natural-origin B-Index steelhead.

Table A-1. 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%	2.0%	15.0%
20,000	Any	15%	2.0%	17.0%
35,000	>200,000	20%	2.0%	22.0%
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 natural-origin Coho (LCN Coho)

As part of the 2018–2027 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-origin 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, 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 downstream of Bonneville Dam 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.

Table A-2. Lower Columbia River natural origin (LCN) Coho - Exploitation Rate Matrix

Parental Escapement (percent of full seeding)	Marine Survival Index a/				
	Very Low ≤0.06%	Low ≤0.08%	Medium ≤0.17%	High ≤0.40%	Very High >0.40%
Normal	10%	15%	18%	23%	30%
Very Low *	≤ 10%	≤ 15%	≤ 18%	≤ 23%	≤ 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 natural-origin tule Chinook (LCR tule)

Fall-season fisheries in the Columbia River and ocean that harvest LCR tules are managed according to an ER schedule that varies based on the combined LRH Chinook abundance. The LRH Chinook management stock is 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.

Table A-3. 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 downstream of the confluence with the Snake River are managed according to the abundance-based harvest rate schedule from the 2018–2027 MA (Table A3). 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; this holds even if non-treaty mark-selective Chinook fisheries (which reduce the relative impact to ESA-listed SRW fall Chinook) are implemented.

Upriver fall Chinook escapement goals include 6,000 adult BPH fall Chinook (3,500 females) to SCNFH, and a 60,000 adult URB fall Chinook (natural and hatchery) management goal at McNary Dam.

Table A-4. 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

1. If the Snake River natural fall Chinook forecast is less than the 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 run size forecasts, a fishing plan is developed annually for non-treaty recreational and commercial fisheries through the NOF management process. The fisheries described in the following section were structured and guided by preseason planning efforts and informed by in-season data. Preseason plans for fall fisheries that occurred in 2022 can be found in the “Fall Season Expectations” section of the 2022 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- to late-September timeframe. Incidental landings of steelhead occurred in both early and late fall seasons until commercial sales were outlawed 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 reduced allocation guidelines for LCR tute Chinook. Late fall season fisheries targeting Chinook typically occur from mid to late September through the end of October within Zones 4-5. Prior to 2006, the late fall season primarily 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 and again in 2019-2022, 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. 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). Since 2017, sturgeon sales have been allowed in fall mainstem commercial fisheries, primarily during August.

2022 Early Fall Commercial Mainstem Fisheries

The 2022 early fall (August) mainstem gillnet season consisted of eight, nine-hour fishing periods in Zones 4-5 during August 10–September 2. A 9-inch minimum mesh size restriction was in place for all periods to minimize handle of steelhead and under-sized sturgeon. White Sturgeon sales (44-50 inches FL) were allowed with a weekly landing limit of four fish per participating vessel in effect. The number of deliveries ranged from 13–62 per fishing period. Landings for the early fall season included 24,219 Chinook, 929 Coho, and 184 White Sturgeon. Chinook landings were 91% of preseason expectations. Coho landings in the early fall season were about 154% of the recent 10-year average of 603 fish. See Tables 14-21 for details on season structure and catches.

2022 Late Fall Commercial Mainstem Fisheries

The late fall mainstem season consisted of seven Chinook-directed fishing periods occurring in Zones 4-5 between September 18 and October 6. The minimum mesh size for all periods was 8-inches. White Sturgeon sales (44-50 inches FL) were allowed for all seven periods, with a six-fish weekly landing limit in effect. Landings for the late fall Chinook-directed season included 6,508 Chinook, 1,223 Coho, and 85 White Sturgeon.

2022 Commercial Alternative Gear Fall Fisheries

Due to low projected returns for steelhead and below average expectations for LRH fall Chinook, non-treaty commercial seine and pound net fisheries were not considered, and did not occur, in 2022.

Given the robust Coho forecast, a late-fall commercial tangle net fishery occurred based on in-season indications the 2022 return would meet expectations. During the 25-period fishery that occurred from September 16 to October 28 in Zones 1-3, landings totaled 3,797 hatchery Coho, 221 Chinook, and zero White Sturgeon. Daily effort for this fishery peaked early in the season at 15 deliveries and declined steadily to one delivery on the last day. Regulations for this fishery included a 3.75-inch maximum mesh size, 30-minute maximum soak time, and other live-capture fishing regulations.

2022 Combined Commercial Mainstem Fisheries

The combined fall season Chinook landings of 30,948 were 89% of preseason expectations, and the actual URB run size was 111% of the preseason forecast. Coho landings totaled 5,949 fish in mainstem commercial fisheries which was 52% of the recent 10-year average. Combined sturgeon landings for fall mainstem non-treaty commercial fisheries totaled 269 fish representing 34% of the 800 commercial guideline for 2022. See Tables 14-20 and 22 for details on late fall season structure and harvest. Estimates of mortalities of released fish are made using the following release mortality rates: tangle net (≤ 3.75 -inch mesh; Coho, steelhead, chum = 23.6%); gillnet (8-8.75-inch mesh: steelhead, chum = 44.8%); gillnet (9-9.75-inch mesh: steelhead = 38.3%).

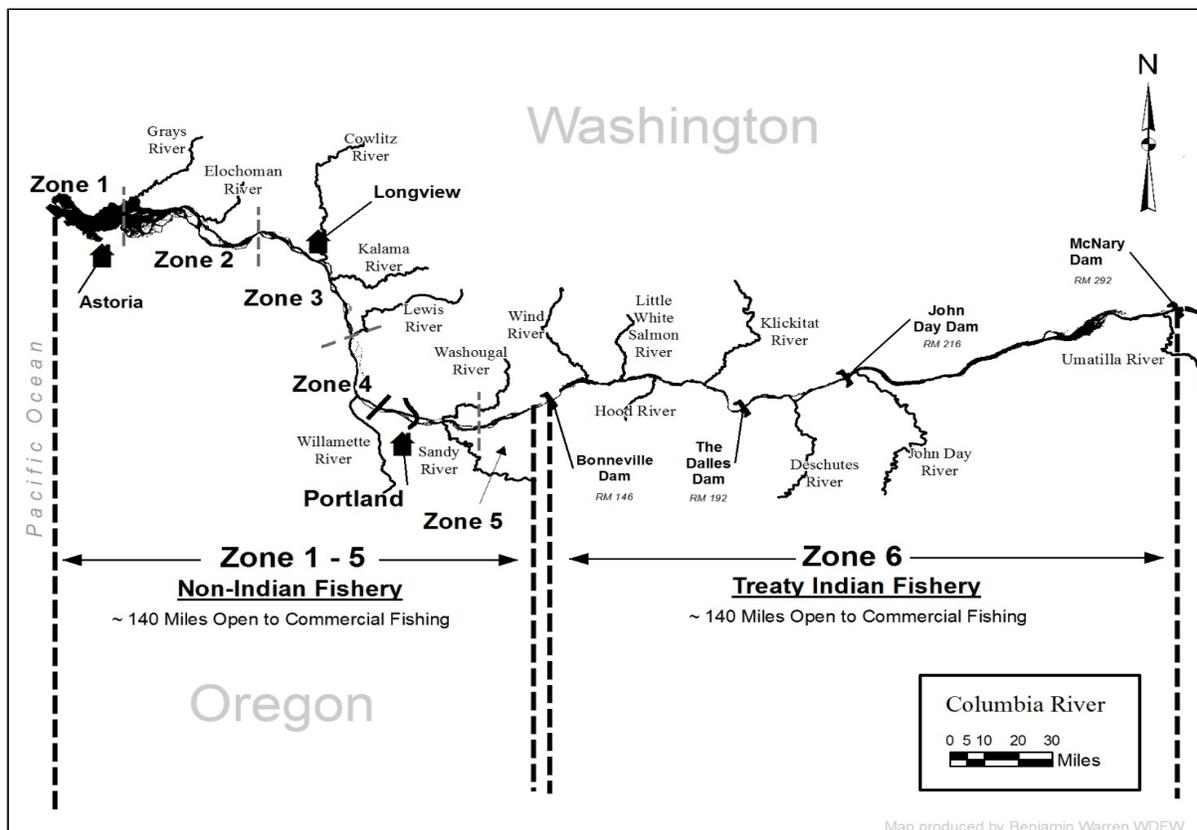


Figure 8. Columbia River commercial fishing zones.

Non-Treaty Recreational Fisheries

The fall recreational salmon fishery occurs throughout the Columbia River with primary catch areas in the estuary (Buoy 10), the LCR between Tongue Point and Bonneville Dam, and the Hanford Reach area below Priest Rapids Dam. The Buoy 10 fishery traditionally 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 traditionally 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 on the mainstem Columbia River between Bonneville and McNary dams near most tributary mouths with more substantial fisheries near the Deschutes and Klickitat rivers and in the mainstem upstream of McNary Dam. Significant fisheries for summer steelhead also occur during the late fall and early winter in the mainstem between McNary Dam and the Highway 395 Bridge when steelhead retention is allowed. In all these fisheries, regulations require anglers to release unclipped steelhead and Coho, except anglers may keep unclipped Coho 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 most of the catch occurred at or directly downstream of 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. More recently, many anglers have switched from anchoring with wobblers to trolling with small spinners and rotating flashers which allows them to fish any stage of the tide. The recreational catch of adult fall Chinook on the mainstem has increased over time from an average of 2,300 during the 1980s, to 5,000 fish during the 1990s, 14,700 during the 2000s, and 23,600 during the 2010s. Angler trips have also increased from an average of about 41,000 trips in the 1980s, to 54,200 trips in the 1990s, 94,400 trips in the 2000s, and 118,400 trips during the 2010s. 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 to meet ESA and harvest-sharing guidelines. The states also adopted MSF (mark-selective fishery) rules for fall Chinook during a portion of the 2012-2017 mainstem fishing seasons downstream of Warrior Rock to reduce the relative impacts to LCR wild fall Chinook.

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 with large returns. While the average number of angler trips by decade has increased since the 1990s, Chinook harvest has increased disproportionately, from an average of 6,700 in the 1990s, to 10,000 in the 2000s, and 19,100 during the 2010s. 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 required the states to reduce opportunity for Chinook since 2007, with retention seasons averaging 29 days during August and early September. The states also adopted MSF rules for fall Chinook during a portion of the 2013–2016 and 2021–2022 Buoy 10 fisheries to reduce the relative impacts to LCR wild fall Chinook.

Estimates of mortalities of released fish are made using the following release mortality rates for Buoy 10 and mainstem Columbia River (Chinook, Coho: 19.0% (21% for barbed hooks); steelhead, chum: 10.0%).

2022 Buoy 10 Recreational Fishery

The Buoy 10 fishery was planned to be open to Chinook retention August 1 through August 24 under mark-selective regulations, followed by a period of non-selective fishing from August 25 through September 7. During the retention period, the daily bag limit was set at two adult salmonids, of which no more than one could be a Chinook. Mark-selective Coho retention was planned for August 1 through December 31, with the bag limit increasing from two to three adult salmonids on September 8. Steelhead retention was scheduled to be closed August through October. The preseason catch expectations (including release mortalities) for the Buoy 10 fishery were about 32,850 Chinook and up to 63,400 Coho.

The 2022 Buoy 10 fishery opened August 1 for adipose fin-clipped Chinook and Coho. The season began with a daily bag limit of two adult salmonids, of which only one could be a Chinook. Throughout the first two weeks of the fishery effort ranged from 7,078 to 10,665 angler trips per week and weekly average catch rates ranged from 0.23 to 0.24 Chinook kept per angler. An estimated total of 4,159 Chinook were kept through August 14. Effort and catch increased sharply during the last full week of the mark-selective fishery (August 15 through August 21), with about 24,000 angler trips and over 19,000 Chinook handled (9,410 kept and 10,259 released) and an average weekly kept catch rate of 0.39 Chinook per angler. Peak weekly effort (27,720 angler trips) and kept catch (12,055 Chinook) occurred from August 22 through August 28, when the fishery transitioned to non-mark selective regulations and experienced catch rates (weekly average = 0.43 Chinook kept per angler) that were much higher than anticipated. During the last two days of the fishery, from August 29 through August 30 there were 2,726 Chinook kept for 4,278 angler trips (0.64 Chinook kept per angler).

Throughout the mark-selective fishery Chinook catch tracked slightly above preseason expectations (LCR tule fall Chinook ER expected 1.85%; in-season 2.05%). However, once the Chinook fishery transitioned to non-mark selective, the Chinook handle rates and proportion of LRH tule fall Chinook in the catch were significantly higher than expected. The states met on August 29 and prohibited Chinook retention effective August 31, allowing Coho retention to remain open. Due to a combination of Buoy 10 LRH accrual and remaining Chinook catch projections in the recreational fishery below Bonneville Dam, the states met again on September 1 and closed all recreational salmonid angling from the Buoy 10 line upstream to Bonneville Dam effective September 2 to remain within allowed ESA impacts. On September 13 the states met to re-open fisheries expected to have low Chinook encounters which allowed hatchery Coho retention from the Buoy 10 line upstream to the Tongue Point/Rocky Point line effective September 15. This approach assumed fewer than 1,000 Chinook would be handled and that the proportion of LRH fall Chinook would only be 5-10% of the total, equating to a LCR impact of about 0.02% ER. Staff continued to assess recreational fishery options with limited LCR tule impacts. On September 28 the states met and were able to re-open Chinook retention, effective October 1, based on an updated URB run size and CWT analyses. In early October, TAC provided a refined estimate of bright/tule Chinook passage at Bonneville Dam that resulted in a projection that aggregate non-treaty harvest would exceed the allowed 15% URB rate. As a result, the states

decided to close Chinook retention on October 8. Based on creel estimates, only five Chinook were kept and 120 released in the Buoy 10 fishery after the initial Chinook closure on August 31.

Coho catch rates were low during the first three weeks of August; weekly average catch rates ranged from 0.02 to 0.05 Coho kept per angler. Total kept catch was 1,262 Coho through August 21. Weekly average catch rates increased during the last two weeks of August into early September and ranged between 0.13 to 0.32 Coho kept per angler. Peak weekly Coho kept catch (3,627 Coho) occurred from August 22 through August 28. The highest weekly average catch rate for Coho occurred from August 29 through September 1 with a total of 2,179 Coho kept for 6,768 angler trips (0.32 Coho kept per angler). As described above, all salmonid angling was closed from September 2 through September 14 from Buoy 10 to Bonneville Dam. By mid-September impact risks to Chinook were reduced, which allowed opportunity for Coho angling from the Buoy 10 line upstream to the Tongue Point/Rocky Point line. Effort steadily declined from mid-September through October and few Coho were caught during this period. From September 15 through October 31 there were an estimated 900 Coho kept for 8,883 angler trips. Weekly average catch rates during this period ranged from 0 to 0.19 Coho kept per angler.

The final season structure did not match the preseason plan due to higher than expected Chinook catch rates and a greater proportion of LRH tulle fall Chinook in the kept catch which led to closures in the Buoy 10 fishery for Chinook and all non-treaty salmonid fisheries downstream of Bonneville Dam. The states were able to re-open low-risk fisheries, while continuing to closely monitor the run and assess risks of further Chinook impacts. Steelhead retention was closed from August through October as planned preseason.

Table A-5. Summary of 2022 Buoy 10 Fishery Retention Regulations

08/01 to 08/24	Two adult salmonid daily bag limit, only one Chinook allowed. Chinook and Coho must be adipose fin-clipped. Steelhead retention prohibited.
08/25 to 8/30	Two adult salmonid daily bag limit, only one Chinook allowed. Coho must be adipose fin-clipped. Steelhead retention prohibited.
8/31 to 9/1	Two adult salmonid daily bag limit. Chinook retention prohibited. Coho must be adipose fin-clipped. Steelhead retention prohibited.
9/2 to 9/14	Closed for all salmonids.
9/15 to 9/30	Three adult salmonid daily bag limit. Coho must be adipose fin-clipped. Chinook and steelhead retention prohibited.
10/1 to 10/7	Three adult salmonid daily bag limit, only one Chinook allowed. Coho must be adipose fin-clipped. Steelhead retention prohibited.
10/8 to 12/31	Three adult salmonid daily bag limit, only two hatchery steelhead allowed. Coho and steelhead must be adipose fin-clipped. Chinook retention prohibited.

The 2022 Buoy 10 fishery in the Columbia River estuary consisted of 85,187 total angler trips with a total kept catch of 28,355 adult Chinook and 8,847 adult hatchery Coho (Table 25). Anglers released a total of 21,933 Chinook, 5,222 Coho, and 79 summer steelhead. The total Chinook kept catch ranked fifth since 1982. Total angler effort in the fishery was the seventh highest in the last 20 years and 14th highest since 1982. See Tables 15, 18, 19a, 19b, and 25 for additional detail.

2022 Lower Columbia Mainstem Recreational Fishery

Fall-season salmon fisheries on the Columbia River downstream of Bonneville Dam opened August 1 for fall Chinook and Coho. Non-treaty fall fisheries were constrained most by LCR tule Chinook and upriver summer steelhead. The states adopted Chinook retention seasons during August 1–September 7 and October 1–December 31 between the west Puget Island line and Warrior Rock and August 1–September 13 and October 1–December 31 between Warrior Rock and Bonneville Dam. As in recent years, the states closed summer steelhead retention between Buoy 10 and Bonneville Dam effective August 1–October 31. The retention of hatchery Coho was open in conjunction with Chinook seasons in both areas, and all salmonid angling closed when the retention of Chinook was prohibited. The daily bag limit in both areas was two adult salmon (Chinook or hatchery Coho) but only one could be a Chinook. The states adopted party-fishing rules for boat anglers whereby each angler aboard a vessel could continue to deploy gear until the anglers achieved a boat limit. The preseason catch expectation for the 2022 mainstem recreational fishery was 17,000 adult Chinook, including 9,500 URB and 2,700 LRH fall Chinook, and up to 5,700 hatchery Coho.

Similar to recent years, high water temperatures adversely affected catch rates for Chinook in the recreational fishery from Cathlamet upstream to Bonneville Dam during August. Catch rates improved between west Puget Island and Warrior Rock during the last week of August. Through August 31, the total Chinook catch from west Puget Island to Warrior Rock was 3,300 fish, which was similar to expectations; but the proportion of LRH in the catch and impacts to LCR fall Chinook were much lower than expected. The catch in the fishery from Warrior Rock to Bonneville Dam was only 1,000 fish by August 31, and impacts to LCR fall Chinook were much lower than expectations in this fishery.

The states closed Buoy 10 early effective August 31 because catches of LRH and impacts to LCR tule fall Chinook in that fishery exceeded expectations. Based on updated in-season catch and stock composition data from the Buoy 10 fishery after the fishery closed, it became apparent that the Buoy 10 fishery used all the LCR fall Chinook ESA impacts allocated to recreational fisheries. With no LCR fall Chinook ESA impacts remaining to prosecute mainstem recreational fisheries and catch rates increasing in both areas of the LCR fishery, the states met on September 1 and closed salmonid angling effective September 2 between Buoy 10 and Bonneville Dam. Through September 1, the total catch between west Puget Island and Bonneville Dam was 4,700 adult Chinook.

The states held a Joint State Hearing on September 13 to consider recreational fishing options that were unlikely to accrue any additional ESA impacts to LCR fall Chinook. The states reopened Chinook and Coho fishing in the Columbia River from the eastern tip of Reed Island (RM 127) upstream to Bonneville Dam (RM 146) and coho retention in the Buoy 10 fishery. Review of CWTs collected during the previous 20 years from the recreational fishery in the Columbia River Gorge area downstream of Bonneville Dam showed only one LRH tag and none after September 1. Similarly, a Buoy 10 target coho fishery during the latter half of September was expected to have minimal ESA impact (0.02%) to LCR fall Chinook. Catch rates in the Chinook fishery upstream of Reed Island averaged almost two Chinook kept per boat during the first six days of the fishery but dropped off quickly thereafter. The total catch in the Gorge salmon fishery during

September 15-30 was just under 4,000 adult Chinook kept from 8,500 angler trips with no additional ESA impacts to LCR fall Chinook.

Even though the recreational fishery exceeded its ESA impact allocation for LCR fall Chinook, the states continued to consider fishery options that would either accrue no additional LCR impacts or would not affect the ability of the states to prosecute additional planned commercial fisheries. The states held a hearing on September 28 and reopened Chinook and Coho angling from Buoy 10 upstream to Reed Island effective October 1-31. On October 3, TAC downgraded the URB return from the most recent in-season projection of 323,000 adults to 267,000, which meant that non-treaty fisheries were projected to exceed their URB harvest-sharing guideline if fisheries continued as planned. Non-treaty fisheries were expected to remain under the ESA impact limit for SRW fall Chinook due to the mark-selective Buoy 10 fishery. The states held a hearing on October 5 and closed Chinook retention in mainstem fisheries from Buoy 10 upstream to the Highway 395 Bridge effective October 8. The fisheries remained open to Coho retention. Winter steelhead fisheries downstream of The Dalles Dam did open as scheduled effective November 1, 2022.

The 2022 mainstem recreational fishery on the lower Columbia produced 52,993 angler trips with kept catches of 9,863 adult fall Chinook, 2,157 Chinook jacks, 1,632 adult hatchery Coho, and 125 hatchery Coho jacks (Table 26). The total adult Chinook catch was the 18th highest since 1980 and included 5,700 URB and 300 LRH stock fall Chinook. The angler trip total was the lowest since 1995 and 30th highest total since 1980, and the CPUE for adult Chinook was the 12th highest since 1980. Summer steelhead retention remained closed during the entire fall season for the fourth time since 1976. Anglers released an estimated 1,325 adult Chinook, 615 adult Coho, and 452 summer steelhead during August–October 2022. See Tables 15, 18, 19a, 19b, and 26 for additional detail.

2022 Columbia Mainstem Recreational Fisheries upstream of Bonneville Dam

The Columbia River is typically open for Chinook, hatchery steelhead, and Coho retention during the fall season in the area from Bonneville Dam upstream to the Highway 395 Bridge near Pasco, WA. Additional areas of the Columbia River upstream of the Highway 395 Bridge, such as the Hanford Reach, are also open during the fall season. Since 2017, fall season catch estimates for the salmon and steelhead fisheries from Bonneville Dam upstream to the Highway 395 Bridge have been based on creel programs. The catch estimates for the Hanford Reach fishery are also based on a robust creel program. See Tables 15, 18, 19a, 19b, and 27 for seasons and catch detail.

Bonneville Dam to Highway 395 Fishery

This fishery is often referred to as the ‘Zone 6’ recreational fishery; however, it does extend upstream of McNary Dam to the Highway 395 Bridge near Pasco, WA. Chinook catch from Bonneville to the Highway 395 Bridge during 2017–2021 ranged from 960 to 6,400 adult fish annually. The majority of the catch occurs within the Zone 6 area proper. In 2022, Chinook retention was open from August 1 to October 7. Harvest is estimated at 9,781 adult Chinook kept (1,474 released), 4,917 adult Coho kept (427 released), and 57 steelhead kept (226 released hatchery- and natural-origin fish) based on creel results (Tables 15, 19a, 19b, and 27). Due to low steelhead returns, steelhead retention was closed from Bonneville Dam to The Dalles Dam from

August 1 through October 31, and The Dalles Dam to Highway 395 from September 1 through December 31.

Hanford Reach Fall Chinook Fishery

The Hanford Reach fall Chinook sport fishery opened from August 16 through October 31 in the area from the Highway 395 Bridge upstream to Priest Rapids Dam with a daily bag limit of two adults.

An estimated 10,246 adult fall Chinook, 933 jack fall Chinook, and 187 Coho were harvested from about 28,500 angler trips in this fishery. Approximately 126 adult Chinook were also caught and released. The 2022 Chinook harvest is 58% of the recent 10-year average (Table 27).

Select Area Fisheries

The Select Area Fisheries Project is a cooperative program that strives to deliver quality commercial and recreational salmon fishing opportunities in areas that maximize the return of hatchery production to fisheries. Hatchery production and targeted commercial fisheries for Coho and Chinook occur in the Select Areas. The Select Areas are off-channel and terminal areas in the LCR and include Youngs Bay, Blind Slough/Knappa Slough, and Tongue Point/South Channel in Oregon and Deep River in Washington.

Commercial fisheries in the Select Areas target adult salmon that return from juvenile net-pen and hatchery releases in these areas. Fall-season commercial fisheries have occurred in Youngs Bay since 1962 and in Blind Slough/Knappa Slough, Tongue Point/South Channel, and Deep River since 1996. Select Area fall fishery impacts to ESA-listed fish are minimal, and fisheries are managed to remain within allowable harvest impact rates and catch guidelines. Fall fisheries in the Select Areas 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 Tongue Point/South Channel and Blind Slough/Knappa Slough fisheries. Coho and Chinook produced for Select Area fisheries also contribute to the LCR recreational and commercial fisheries, as well as recreational and commercial fisheries in the ocean.

Recreational fishing occurs in the Select Area sites and associated tributaries. Under permanent regulations, Youngs Bay, Blind Slough/Knappa Slough, and Deep River areas are open all year for retention of Chinook and adipose fin-clipped Coho with a daily bag limit of two adult salmonids. Recreational catches in Oregon and Washington Select Areas is estimated from expanded harvest card data turned in voluntarily by anglers and are not available until at least the following calendar year.

2022 Select Area Fisheries

During the 2022 fall management period, landings included 6,166 Chinook and 78,504 Coho. Landings were about 4.5% and 85% above the recent 5-year (2017-2021) averages (5,900 and 42,388) for Chinook and Coho, respectively. Retention of White Sturgeon was allowed in Select Areas for the sixth consecutive year after a multi-year retention closure from 2014 through 2016. Retention continued through fall season in 2022 since there were still fish remaining on the sub-allocation after the winter/spring/summers season fisheries were complete. A total of 168 White

Sturgeon were landed during fall season which was 19% below the recent 5-year average (2013, 2017 – 2019, 2021) of 208 (years that allowed harvest). Landings of Select Area commercial fisheries are summarized in Tables 22 - 24. Season structure is described in Table 14.

In Youngs Bay, the fall commercial fishery was opened later than usual to allow for additional escapement of SAB fall Chinook to aide broodstock collection. Prior to 2021, there were weekly 36-hour periods in the first three weeks of August. Since 2021, the fishery began the last full week of August. In 2022, there were two 12-hour overnight periods August 22 and 25. A 3.5-day period was set for the following week from 7 PM August 29 through 7 AM September 2nd. The fishery was then open continuously from 7 PM September 5 through noon October 31 (55 days). Typically, the periods in August are Chinook-directed fisheries while the remaining fisheries target Coho. The upper fishing boundary during the fall season is at Battle Creek Slough. This boundary is downstream from the typical boundary at the confluence Youngs and Klaskanine rivers and is in place to allow for escapement of SAB fall Chinook to the hatcheries. The maximum mesh size during the fall fisheries was 6-inches. Prior to 2021, when fall fishing began in early August, the allowed mesh size was 9¾-inches for the first three weeks of August then was reduced when Coho were more abundant in the river toward the end of August. Net length is restricted to 250-fathoms maximum in Youngs Bay. The 2022 fall commercial fishery in Youngs Bay harvested 1,969 Chinook and 35,381 Coho. Landings were about 76% and 211% of the recent 5-year (2017-2021) averages (2,591 and 16,771) for Chinook and Coho, respectively.

In Blind Slough/Knappa Slough, the fall commercial fishery was open for two 12-hour periods per week from August 29 through September 2nd. Thereafter, four 16-hour periods per week were prosecuted from September 5 through October 28 (32 periods). The maximum mesh size was 6-inches throughout the season. Net length is restricted to 100-fathoms maximum in Blind Slough/Knappa Slough. In total, the 2022 fall commercial fishery in Blind Slough/Knappa Slough was open for 34 fishing periods, resulting in harvest of 1,526 Chinook and 15,302 Coho. Landings were about 28% and 95% above the recent 5-year (2017-2021) averages (1,192 and 7,828) for Chinook and Coho, respectively.

In Tongue Point/South Channel, the season structure of the fall commercial fishery was very similar to that of Blind Slough/Knappa Slough. This structure was designed to provide concurrency between the two fishing sites as requested by commercial fishers. Commercial periods between the two areas were generally concurrent except that during September 5 to October 28 the open periods were 18 hours in Tongue Point/South Channel compared with 16 hours in Blind Slough/Knappa Slough. Maximum net length is 250-fathoms in Tongue Point/South Channel. The 2022 fall commercial fishery in Tongue Point/South Channel was open for a total of 34 fishing periods with landings of 2,435 Chinook and 25,866 Coho. Landings were about 86% and 98% above the recent 5-year (2017-2021) averages (1,310 and 13,081) for Chinook and Coho, respectively.

In Deep River, the 2022 fall commercial fishery was in the fourth year of a transition from harvest of early to late-stock Coho. The season was planned to span the latter part of the early fall (mid-September to mid-October) and late fall (mid-October through late November) return timing. The season opened with four 15-hour periods per week from September 12 through October 14. From October 17 through November 24, the season continued with two days of fishing per week. The maximum mesh size was 6-inches. Net length is restricted to 100-fathoms maximum in Deep

River. The 2022 fall commercial fishery in Deep River was open for 32 15-hour periods. The last Coho landed in Deep River was November 3. A total of 236 Chinook and 1,955 Coho were landed. Landings were 29% and 42% of the recent 5-year (2017-2021) averages (807 and 4,708) for Chinook and Coho, respectively.

The 2022 recreational fisheries in Washington and Oregon Select Areas occurred as per permanent regulations. Preliminary estimates of 2022 recreational harvest in Oregon Select Area sites and tributaries are 830 fall Chinook, which is 39% above of the 10-year (2012–2021) average of 596, and 808 Coho, which is 257% of the 10-year average of 315 (Table 24). Catch from recreational fishers in Deep River has not been reported by WDFW as they are still processing incoming harvest report cards. WDFW expects a preliminary estimate will be available in September 2023. Data from 2021 and prior show that there have been no Chinook caught during fall in Deep River since 2017, and no Coho caught since 2018.

Treaty Indian Mainstem Fisheries

During the fall season, treaty Indian fisheries occur in the mainstem Columbia River from just downstream of Bonneville Dam upstream to McNary Dam (Figure 5). They include commercial and ceremonial and subsistence (C&S) fisheries. Like non-treaty fisheries occurring from the Columbia River mouth upstream to Highway 395 Bridge near Pasco, WA, treaty mainstem fisheries are managed in accordance with harvest rate schedules in the 2018–2027 *U.S. v. Oregon* MA. The URB harvest rate is used as a surrogate for harvest rates on SRW Chinook. The B-Index harvest rate is used to control impacts on ESA-listed steelhead. Treaty Indian landings and fishery structures are summarized in Tables 13, 15, 18, and Tables 28-31. ESA impacts are shown in Tables 32, 36 and 37. Fall season treaty Indian tributary fisheries (including those in the Snake Basin) are not discussed in this report.

2022 Treaty Indian Commercial Fisheries

The 2022 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. Platform and hook-and-line fishing was open for both subsistence and commercial purposes throughout the fall season. The commercial gillnet salmon fishery occurred between August 22 and October 6 and consisted of seven weekly fishing periods ranging from 3.5 to 5.5 days long (30.5 fishing-days total). This was just slightly higher than the ten-year average of 30 days. The standard fall-season Spring Creek Hatchery closed area was in effect for the first three gillnet periods. An 8-inch minimum mesh size restriction was in place for all gillnet openings. Aerial surveys were conducted weekly; set net counts averaged 305 nets per survey, which is below the 10-year average (Table 31). Sale of platform hook-and-line caught fish was allowed August 1 through December 31. Tribal platform and hook-and-line fisheries downstream of Bonneville Dam were open according to agreements with the States. Fifty adult Chinook, ten steelhead, and 60 Coho were harvested downstream of Bonneville Dam.

Fall season treaty fisheries landed 181,803 Chinook (175,898 adults), 9,492 steelhead, 11,165 Coho (Tables 15, 18 and 30). Sturgeon landings during the fall salmon gillnet season totaled 92 fish. A total of 34 walleye were also caught in the fall fishery. The tribes allowed legal-sized sturgeon to be retained only for subsistence use during the fall salmon gillnet season. The Chinook

catch was highest in the first and second full weeks of September (Table 30). A creel system is used to estimate the total catch so commercial fish tickets represent only part of the harvest. Of the total catch, 19% of the Chinook, 22% of the steelhead, and 22% of the Coho were taken home or sold directly to the public. ESA impacts to both URB and SRW Chinook were 16.2% and 16.4% respectively¹ (Tables 36 and 37). Impacts to total B-Index summer steelhead totaled 11.1%, compared to the 13.0% limit (Tables 32 and 33).

2022 Fishery Impacts

Fall fisheries are structured to maximize harvest of healthy fish stocks while remaining within ESA-impact guidelines for multiple species/stocks. Tables 32-37 provide impact rate summaries for treaty Indian and non-treaty fisheries.

Table A-6. Summary of 2022 Management

2022 Management	Total	Preseason Goal/ Guideline
Total URB HR	29.09%	45.0%
Non-Treaty	12.92%	15.0%
Treaty Indian	16.18%	30.0%
Snake River Natural-origin HR	27.74%	45.0%
Non-Treaty	11.30%	15.0%
Treaty Indian	16.44%	30.0%
LRH Ocean/In-river ER	30.61%	38.0%
<i>In-River ER</i>	7.85%	
Non-Treaty Natural-origin A-Index Steelhead	0.33%	2.0%
Non-Treaty Natural-origin B-Index Steelhead	0.44%	2.0%
Treaty Total B-Index Steelhead	11.13%	13.0%
LCN Coho	11.67%	23.0%
Lower Columbia Chum	0.73%	5.0%
Percent of Upriver Chinook Harvestable Surplus		
Non-Treaty	26%	50%
Treaty Indian	36%	50%
McNary Escapement	155,400	60,000
Percent Upriver Coho to Bonneville Dam	79%	50%

For 2022 preseason planning, fisheries were developed based on an URB run size of 229,700 adults and an SRW run size of 11,000 adults. According to Table A3 of the MA, returns in this range allow for a harvest rate of 45% (15% non-treaty and 30% treaty). The final URB run size was

¹ When non-treaty mark selective fisheries in the lower Columbia River are large enough, there can be differences in the URB and SRW mark rate caused by the effect of the mark selective fisheries on the mark rate at Bonneville.

254,880 adults which included 18,945 Snake River Wild Chinook, allowing a total URB HR of 45% (15% non-treaty and 30% treaty). The realized URB harvest rates were 16.18% in treaty Indian fisheries and 12.92% for non-treaty fisheries. There was a mark-selective component in the non-treaty fall Chinook fishery in 2022 which resulted in a 11.30% SRW HR for all non-treaty fisheries combined; treaty fisheries had a 16.44% HR on SRW fall Chinook. The ER for LCR natural-origin tule Chinook totaled 30.61%, compared to the limit of 38% for combined ocean and non-treaty in-river (mainstem Columbia River) fisheries. The combined ER for non-treaty in-river fisheries was 7.85%, or 26% of the total.

The ER for LCN Coho totaled 11.67%, compared to the limit of 23.0% in combined ocean and in-river fisheries. The ER from non-treaty in-river fisheries was 1.5%, or 12% of the total.

Impacts to the combined hatchery and natural B-Index summer steelhead from treaty Indian fisheries totaled 11.13%, compared to the 13.0% limit. Incidental release mortalities from non-treaty fall fisheries resulted in an ESA impact of 0.44% to natural-origin B-Index steelhead, compared to the 2.0% limit.

2023 FALL SEASON FISHERY EXPECTATIONS

Non-Treaty Fisheries

Based on preseason run size forecasts, a preliminary fishing plan was developed for Columbia River non-treaty fisheries through the NOF management process. Specific recommendations for fall commercial seasons will be presented at Compact Hearings occurring throughout the fall management period. Initial regulations for fall-season recreational fisheries are already in place and have been publicized. As the fall management period progresses, run size updates for upriver stocks will occur, which may alter fishery plans. Upriver Chinook run sizes cannot typically be updated until mid-September. Stock composition and estimated ESA impacts for all fisheries will be updated in-season as catch estimates and stock composition (determined from coded-wire tag data) become available. These data may differ from preseason expectations, which could result in modifications to fall fishery plans/seasons.

2023 Non-Treaty Columbia River Fall Fishery Chinook Fishery Plan

The plan reflects the intent of the Washington and Oregon Fish and Wildlife Commission policies/regulations and the management objective to optimize non-treaty (commercial and recreational) fisheries harvest of Chinook and Coho within the limitations of the ESA. The plan was developed during the March and April 2023 PFMC and NOF meetings, which included input from commercial and recreational fishery representatives.

ESA limits (based on preseason forecasts) for 2023 non-treaty fall fisheries include a 15% harvest rate (HR) for SRW Chinook (URB stock is the surrogate), a 38% ER for LCR tule Chinook (LRH stock is the surrogate), a 23% ER for LCN Coho (unmarked Coho are the surrogate), a 2% impact rate for natural-origin A-Index steelhead, and a 2% impact rate for natural-origin B-Index steelhead. The ERs for LCR tule Chinook and LCN Coho include harvest from combined ocean and Columbia River fisheries. Constraining stocks for Columbia River fisheries include LRH

(LCR fall Chinook surrogate) and URB (SRW surrogate) Chinook and natural-origin B-Index steelhead.

The preseason expectation for combined non-treaty Columbia River (in-river) fisheries is 12.0% HR on SRW (13.5% on URBs), an ER of 9.4% on LCR tule Chinook, and 4.6% ER on LCN Coho. ESA impacts to natural-origin A- and B-Index steelhead are expected to be 0.4% and 0.7%, respectively.

The non-treaty conservation responsibility for ESA-listed Chinook is shared between recreational and commercial fisheries. The sharing for in-river LRH impacts is expected to be 70% recreational and 30% commercial. Sharing of SRW impacts are currently expected to be 62% recreational and 38% commercial. Recreational fisheries downstream of Bonneville Dam will not achieve the season objectives as described in the Oregon rules due to the LCR Chinook constraints.

Goals/expectations for the recreational fishery:

The following describes the planned seasons and daily bag limits for all fall mainstem recreational fisheries:

- The daily adult bag limit will be two salmonids (but no more than one may be a Chinook) throughout the season in all areas with the following exceptions:
 - Buoy 10 increases to three fish (hatchery Coho only) beginning September 5.
 - From Buoy 10 upstream to The Dalles Dam, steelhead may not be retained from August 1 through October 31.
 - From The Dalles Dam upstream to Highway 395 at Pasco, WA, the daily adult salmonid bag may not include more than one hatchery steelhead during August and steelhead may not be retained September 1 through December 31.
- 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.
- Barbless hooks are required when fishing for salmonids
- Wild/unmarked Coho must be released downstream of the Hood River Bridge.

In the area from Buoy 10 upstream to the west end of Puget Island, the recreational fishery will begin on August 1 as usual. The fishery will close to salmon and steelhead angling during two periods (August 21-23 and August 28-29) prior to the planned Chinook retention closure on September 5. From August 1 – September 4 mark-selective regulations will be in effect. From September 5 through December 31, Chinook retention will be closed and the daily adult bag limit will increase to three hatchery Coho. Preseason harvest expectations (including release mortalities) total 37,450 Chinook (3.1% URB HR, 1.5% SRW HR; 3.2% LCR tule natural-origin ER) and 45,806 Coho (including 6,134 unmarked mortalities; 2.0% LCN Coho ER). The expected ESA impact rate for natural-origin A- and B-Index steelhead is 0.01% each. No impacts to Chum are expected.

The mainstem recreational fishery from the west Puget Island line upstream to Bonneville Dam will have varying Chinook retention regulations by area. Preseason harvest expectations (including release mortality) include 22,730 adult Chinook (5.0% SRW HR; 3.1% LCR natural-origin ER), and 2,603 Coho (including 201 unmarked mortalities; 0.1% LCN Coho ER). The expected ESA impact rates for natural-origin A- and B-Index steelhead are 0.05% each. Impacts

to Chum are expected to be minimal at 0.01%. Any decision to extend the fishery or modify bag limits will be made in-season and will consider fishery performance, in-season run size updates, and policy objectives.

- From the west Puget Island line upstream to the Lewis River/Warrior Rock line, Chinook retention is allowed August 1 through September 4 with a two adult (one Chinook) daily limit. The area will close to salmonid angling September 5-30. Hatchery Coho retention will be allowed October 1 through December 31 with a two adult daily limit.
- From the Lewis River/Warrior Rock line upstream to Bonneville Dam, Chinook retention is allowed August 1 through September 14 with a two adult (one Chinook) daily limit. The area will close to salmonid angling September 15-30. Hatchery Coho retention will be allowed October 1 through December 31 with a two adult daily limit.

The mainstem recreational fishery from Bonneville Dam to the Highway 395 Bridge is scheduled to be open August 1 through December 31. Chinook retention is planned August 1 through October 15. The season will be managed based on a total harvest expectation of 6,300 adult Chinook (0.9% SRW HR). The expected ESA impact rates for natural-origin A- and B-Index steelhead are 0.07% and 0.12%, respectively; these rates include impacts from tributary dip-ins. The dates, area restrictions, and catch expectations described above are based on preseason planning and input from the recreational fishing community. In-season events may change many of these expectations.

Goals/expectations for the commercial fishery include:

The early fall (August) fishery is expected to begin the week of August 6 and continue through the week of August 27, with fishing periods occurring from one to three times per week, likely on Monday and Wednesday nights with two openings per week and Sunday, Tuesday, and Thursday nights when three openings per week. Fishery structure is expected to include eight 9-hour (9 PM – 6 AM) periods in Zones 4-5 with a 9-inch minimum mesh size. The catch expectation is 30,220 adult Chinook (3.1% SRW HR; 1.9% LCR tule natural-origin ER) and up 1,650 Coho (0.3% LCN Coho ER). The expected ESA impact rates for natural-origin A- and B-Index steelhead are 0.2% each. No impacts to Chum are expected.

Potential Chinook-directed commercial periods in September would occur in the latter half of the month in Zones 4-5 after the fall Chinook and steelhead run size updates are available. Periods would likely be 10-hours (8 PM – 6 AM) with an 8-inch minimum mesh restriction. Late-fall commercial fishing periods targeting hatchery Coho using 3.75-inch tangle nets are planned to occur in Zones 1-3 beginning the week of September 17 and continuing through October 31 with five periods per week (4 AM – 10 PM). Based on preseason forecasts, approximately 50,800 Coho mortalities (1.82% LCN Coho ER) are available for late fall commercial fisheries. The combined late-fall season adult Chinook catch expectation is 7,230 fish (1.4% SRW HR, 0.5% LCR tule natural-origin ER). The expected ESA impact rates for natural-origin A- and B-Index steelhead are 0.03% and 0.20%, respectively. Impacts to Chum are expected to be minimal at 0.1%.

The dates, areas, gear restrictions, and catch expectations described above are based on preseason planning and input from the commercial fishing industry. In-season events may change many of these expectations. Initial mainstem commercial fishing periods and regulations are expected to be adopted at the July 18 Compact Hearing.

Select Area Fisheries

Based on 2023 run size predictions, a minimum of 46,100 Select Area Coho are expected to return for harvest in all Select Area fishing sites combined. This forecast includes 20,600 Coho to Youngs Bay, 13,800 to Tongue Point/South Channel, 9,400 to Blind Slough/Knappa Slough, and 2,300 to Deep River. SAB Chinook harvest is forecasted at 150 fish in all Select Areas combined. A total of 2,810 LRH fall Chinook are expected to be available for harvest in all sites. In total, harvest of Chinook in all sites combined is expected to be about 4,240 fish. The 2023 fall season structure for Select Area commercial fisheries is expected to be similar to the 2022 schedule. Fishing periods and regulations will be adopted at the Compact Hearing on July 18. Impacts to ESA-listed stocks in 2023 fall Select Area commercial fisheries are expected to be 0.12% HR for SRW Chinook, 0.40% ER for natural-origin LCR fall Chinook, 0.13% ER for LCN Coho, 0.05% HR and 0.08% HR for natural-origin A- and B-Index steelhead, and 1.1% HR for Chum.

Treaty Indian Fisheries

Treaty Indian commercial gillnet fisheries using set nets and drift nets have typically occurred from mid to late August through late September or early October. Sales of platform and hook-and-line caught fish typically begin August 1 and may extend into late October or possibly the end of the year. These general plans are likely in 2023. Fishery restrictions in 2023 will likely 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. No closed areas besides the standard fall-season SCNFH sanctuary and other typical river mouth and dam closed areas are expected to be in effect in 2023. The SCNFH closed area is normally reduced when it becomes clear that the hatchery will meet its broodstock collection objectives. Coho and steelhead harvest rates are expected to approximate recent-year averages. Sturgeon sales are generally not allowed during fall salmon gillnet fisheries. Sturgeon retention (within area-specific size slots) is typically allowed only for subsistence purposes. Sales are allowed for all other species harvested. The tribes use set and drift gillnets along with platform and hook-and-line gear. Fall gillnet fisheries typically consist of 2.5- to 4.5-day weekly periods but may be up to 5.5 days. The tribes usually choose to begin commercial gillnet fisheries on Mondays. 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 subject to open periods in these tributaries. Fisheries are normally full retention. The tribes plan on managing their fall season platform and hook-and-line fisheries for both commercial and subsistence use beginning August 1 and are expected to complete their commercial gillnet fishery planning in late July or early August. In most years, weekly commercial gillnet fisheries have begun about the third week in August.

For 2023, 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 preseason forecasts. Actual allowed harvest rates will depend on actual run sizes.

Seasons and regulations for platform and hook-and-line fisheries, including the area downstream of Bonneville Dam are expected to be adopted at the July 18 Compact Hearing. Seasons and regulations for the initial mainstem Treaty gillnet fishing periods are expected to be adopted at a mid-August Compact Hearing.

2023 Columbia River Fall Fishery Model Summary

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

Table A-7. Columbia River Fall Chinook Fishery Model Summary

Ocean Option: Chin2023 Columbia River Model Option: Model MR2023-Final Preseason 4-13-23				MR2023-Final Preseason 4-13-23												
Management Guidelines		Goal/Guideline	SRW	Total URB		Non-Treaty Catch Sharing					Brights - Mainstem					
Harvest Rate		45.00%	42.5%	43.5%		SRW - IMPACTS					Brights - Mainstem					
Non-Treaty		15.00%	12.0%	13.5%		Impact	Percent				Mortalities					Percent
Treaty		30.0%	30.6%	30.0%		Sport	7.41%	62%			Sport	36,800			69%	
% of Harvestable Surplus						Comm	4.57%	38%			Comm	16,300			31%	
Non-Treaty		50%	33%			Total	11.98%									
Treaty		50%	43%													
McNary Escapement		60,000	136,400			LRH - Impacts					Chinook - Mainstem					
LRH Ocean/Inriver Exp. Rate		38%	38.0%			Impact	Percent				Mortalities					Percent
Non-Treaty Wild B Index Steelhead		2%	0.7%			Sport	6.57%	70%			Sport	66,500			64%	
Treaty Total B Index Steelhead		13%	13%			Comm	2.83%	30%			Comm	37,400			36%	
Upriver Coho to Bonneville Dam		50%	60%			Total	9.41%									
Lower Columbia Chum		5%	1.1%													
					Total	LRH	LRW	BPH	URB	LRB	PUB	SAB	SRW	LRH	SRW	
Ocean Harvest					74,350	13,880	2,480	27,300	25,640	400	4,650				ER	HR
Columbia River Run					554,080	77,140	8,710	135,310	278,550	4,400	49,370	600	13,300	9.41%	11.90%	
Harvest Below Bonneville					2023 Fishery Description											
Zone 4-5 Wk 32. Aug 6-12	1		410	30	0	140	220	0	10	0	10	0.02%	0.08%			
Zone 4-5 Wk 33. Aug 13-19	2		1,100	80	0	410	560	0	30	0	30	0.07%	0.20%			
Zone 4-5 Wk 34. Aug 20-26	2		9,870	910	0	5,210	3,230	40	480	0	150	0.68%	1.16%			
Zone 4-5 Wk 35. Aug 27-Sep 2	3		18,840	1,450	0	11,420	4,500	140	1,330	0	210	1.13%	1.61%			
Zone 4-5 Wk 36. Sep 3-9	0		0	0	0	0	0	0	0	0	0	0.00%	0.00%			
Zone 4-5 Wk 37. Sep 10-16	0		0	0	0	0	0	0	0	0	0	0.00%	0.00%			
Zone 4-5 Wk 38. Sep 17-23	<1	Partial day placeholder	1,670	180	20	520	710	30	210	0	30	0.18%	0.26%			
Zone 4-5 Wk 39. Sep 24-30	1		1,780	250	20	380	830	60	240	0	40	0.25%	0.30%			
Zone 4-5 Wk 40-43 October	2		1,860	0	0	0	780	150	930	0	40	0.00%	0.28%			
Fall Tanglenet Wk 40-44			1,920	110	50	10	1,560	10	170	0	70	0.10%	0.56%			
Select Areas			4,240	2,810	0	830	340	10	100	150	20	0.40%	0.12%			
Buoy 10 to WPI Kept + Morts	2 fish/1 CHF	Aug1-Sep4 MSF (closed 5d); Sep5+ Coho only	37,450	14,150	260	8,560	8,520	70	3,240	240	200	3.21%	1.53%			
WPI to Lewis	2 fish/1 CHF	Aug1-Sep4 nMSF; Oct1+ Coho only	10,400	1,510	450	230	5,870	150	1,720	0	370	1.40%	2.11%			
Lewis to Bonn	2 fish/1 CHF	Aug1-Sep14 nMSF; Oct1+ Coho only	12,330	1,550	220	10	7,930	210	2,420	0	290	1.66%	2.85%			
Tributary Sport	MSF	Average season	1,090	870	220	0	0	0	0	0	0	0.30%	0.00%			
Lower River Total			102,950	23,890	1,240	27,720	35,050	870	10,890	390	1,470	9.41%	10.98%			
Bonneville Dam Passage			374,060			93,610	243,500		36,950		11,830					
Harvest Above Bonneville																
Z6 - Bonn to Hwy 395	2 fish/1 CHF	Aug1-Oct15 nMSF; Oct16+ Coho Only	6,300			800	2,570		2,930		120		0.92%			
Treaty Comm. and C&S		Average season	170,690			75,770	83,560		11,350		4,060		30.0%			
Hanford Reach Sport		Average season	8,780				8,780				0					
McNary Dam Passage			136,450				136,450									
Lower Granite Dam Passage											8,057					
Escapement				53,250	7,470	17,040		3,530	22,660	210						
Hatchery				32,060		14,560			8,510	150						
Natural				21,190	7,470	2,480	136,450	3,530	14,150	50						
Hatchery Surplus				17,150		7,560			(470)	(1,050)						
Natural Surplus					682	1,180	76,450									

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

Species – <i>ESU/DPS</i> 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 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/DPS*s 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 forecasts and actual returns, 2022-2023. ^{1,2}

Species/Stock			2022		2023
			Forecast	Return	Forecast
Fall Chinook	LRH - Lower River	Hatchery	73,600	87,542	77,100
	LRW - Lower River	N-O	10,900	9,374	8,700
	BPH - Bonneville Pool	Hatchery	92,200	258,271	135,300
	URB - Upriver Bright		229,700	254,880	278,500
	<i>Snake River</i>	N-O	11,000	18,945	13,300
	LRB - L. River Brights	N-O	8,700	3,039	4,400
	PUB - Pool Upr. Br.	Hatchery	69,800	64,622	49,400
	SAB - Select Area Br.	Hatchery	600	1,331	600
Total Fall Chinook			485,500	679,059	554,000
Coho	Early stock		431,400	354,301	354,000
	Late stock		252,300	185,766	241,300
	Total Coho		683,700	540,067	595,300
Upriver Summer Steelhead (to Bonneville Dam)	Upriver Skamania Index	Total	3,100	6,902	4,400
		N-O	1,600	2,979	2,100
	A-Index	Total	81,000	76,691	55,400
		N-O	28,100	23,189	17,300
	B-Index	Total	15,600	40,278	8,000
		N-O	1,900	6,737	1,300
	Total Upriver Steelhead		Total	99,700	123,871
	N-O	31,600	32,905	20,700	

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

² Natural origin (N-O)

Table 3. Stock accountability of adult fall Chinook returning to the Columbia River, 1980-2022.
1,2,3

Return Year	LRH	LRW	BPH	URB	BUB	LRB ³	PUB	SAB	Total Return
1980-84 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	642,500
2017	64,600	7,900	48,100	297,400	1,400	4,200	46,300	6,600	476,500
2018	53,000	8,300	28,900	149,000	0	14,200	36,000	4,000	293,400
2019	48,900	16,700	29,000	212,200	0	9,900	58,100	900	375,700
2020	77,900	35,400	52,300	299,000	0	7,100	102,700	400	574,800
2021	74,700	16,900	73,700	239,900	0	7,800	66,100	2,200	481,300
2022	87,500	9,400	258,300	254,900	0	3,000	64,600	1,300	679,000

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, 2014-2022. ¹

Stock	Year	Preseason Forecast	Actual Return	Percent of Forecast
Lower River Hatchery (LRH)	2015	96.8	128.7	133%
	2016	142.5	81.5	57%
	2017	98.8	64.6	65%
	2018	62.4	53.0	85%
	2019	55.1	48.9	89%
	2020	50.0	77.9	156%
	2021	73.8	74.7	101%
	2022	73.6	87.5	119%
Lower River Natural Origin (LRW)	2015	19.3	32.4	168%
	2016	22.4	12.3	55%
	2017	13.6	7.9	58%
	2018	7.6	8.3	109%
	2019	14.1	16.7	118%
	2020	19.2	35.4	184%
	2021	20.4	16.9	83%
	2022	10.9	9.4	86%
Bonneville Pool Hatchery (BPH)	2015	163.9	166.4	102%
	2016	100.7	41.3	41%
	2017	164.4	48.1	29%
	2018	50.1	28.9	58%
	2019	48.4	29.0	60%
	2020	45.5	52.3	115%
	2021	47.3	73.7	156%
	2022	92.2	258.3	280%
Upriver Bright (URB)	2015	518.3	795.9	154%
	2016	579.7	412.9	71%
	2017	275.2	297.4	108%
	2018	205.1	149.0	73%
	2019	159.3	212.2	133%
	2020	227.6	299.0	131%
	2021	361.5	239.9	66%
	2022	229.7	254.9	111%
Mid-Columbia Bright (MCB)	2015	114.7	170.6	149%
	2016	99.1	87.8	89%
	2017	48.1	51.9	108%
	2018	42.0	50.2	120%
	2019	69.7	68.1	98%
	2020	77.0	109.8	143%
	2021	62.6	73.9	118%
	2022	78.5	67.6	86%
Select Area Bright (SAB)	2015	12.2	11.4	93%
	2016	15.8	6.7	42%
	2017	13.7	6.6	48%
	2018	5.3	4.1	77%
	2019	3.1	0.9	29%
	2020	1.0	0.4	40%
	2021	0.5	2.2	440%
	2022	0.6	1.3	217%
Columbia River Total	2015	925.3	1,305.4	141%
	2016	960.2	642.5	67%
	2017	613.8	476.5	78%
	2018	372.5	293.5	79%
	2019	349.7	375.8	107%
	2020	420.3	574.7	137%
	2021	576.2	481.3	84%
	2022	576.2	481.3	84%

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

Table 5. Estimated Columbia River return of Snake River natural-origin fall Chinook adults, 1986-2022.

Year	Columbia River Return	Non-Treaty Zone 1-5 Harvest ¹	Bonneville Dam Count	Treaty Zone 6 Harvest	Non-Treaty Above BON Harvest ²	Lower Granite Run Size
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	7,055
2005	9,500	779	8,721	1,434	49	5,299
2006	12,202	928	11,274	2,136	34	4,713
2007	9,878	567	9,311	1,492	64	3,914
2008	8,738	622	8,115	1,615	30	3,937
2009	15,576	1,568	14,008	3,831	53	4,653
2010	12,855	971	11,884	2,141	34	7,302
2011	17,156	2,228	14,928	2,918	53	8,370
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	9,772
2017	11,750	1,403	10,997	3,308	86	6,966
2018	10,642	990	9,652	2,152	6	6,133
2019	15,231	974	14,256	2,925	148	6,558
2020	12,282	1,080	11,195	2,311	67	8,069
2021	10,902	1,025	9,877	1,213	112	9,322
2022	18,945	1,679	17,266	3,114	461	15,758

¹ Recent year harvest data for non-treaty recreational fisheries upstream of Bonneville Dam considered preliminary until catch record card data is finalized.

² Includes release mortalities

Table 6. Returns of upriver summer steelhead to Bonneville Dam (April-October), 1984-2022.

Year	Skamania Index			A-Index				B-Index				Total Passage		
	Hatchery	Natural Origin	Total	Clipped Hatchery	Unclipped Hatchery	Natural Origin	Total	Clipped Hatchery	Unclipped Hatchery	Natural Origin	Total	Hatchery	Natural Origin	Total
1984	--	2,490	20,780	--	--	52,447	195,751	--	--	13,768	98,011	--	68,705	314,542
1985	--	3,690	19,990	--	--	51,922	281,504	--	--	12,986	40,870	--	68,598	342,364
1986	--	5,520	24,830	--	--	56,570	287,508	--	--	9,984	64,016	--	72,074	376,354
1987	--	7,380	17,790	--	--	106,690	238,283	--	--	13,990	44,959	--	128,060	301,032
1988	--	4,180	22,360	--	--	64,331	173,151	--	--	17,742	81,643	--	86,253	277,154
1989	--	3,770	15,730	--	--	57,513	193,079	--	--	12,367	77,604	--	73,650	286,413
1990	--	3,690	18,710	--	--	27,102	115,628	--	--	8,811	47,174	--	39,603	181,512
1991	--	1,220	10,880	--	--	60,264	234,048	--	--	6,207	28,265	--	67,691	273,193
1992	--	2,940	14,910	--	--	44,294	241,524	--	--	12,715	57,438	--	59,949	313,872
1993	--	1,250	14,360	--	--	28,650	136,701	--	--	4,378	36,169	--	34,278	187,230
1994	--	1,380	12,330	--	--	21,212	120,971	--	--	5,152	27,463	--	27,744	160,764
1995	--	1,150	8,220	--	--	25,997	180,037	--	--	1,847	13,221	--	28,994	201,478
1996	--	1,310	10,830	--	--	25,721	174,464	--	--	3,912	18,693	--	30,943	203,987
1997	--	930	11,890	--	--	30,852	208,209	--	--	3,913	36,663	--	35,695	256,762
1998	--	1,610	9,440	--	--	34,836	134,687	--	--	3,415	40,241	--	39,861	184,368
1999	--	1,310	7,160	--	--	56,626	176,466	--	--	3,740	22,137	--	61,676	205,763
2000	--	5,728	16,619	--	--	63,628	216,723	--	--	8,368	40,909	--	77,724	274,251
2001	--	7,952	28,725	--	--	137,230	515,079	--	--	12,047	86,426	--	157,229	630,230
2002	--	9,671	24,991	--	--	87,276	323,124	--	--	32,333	129,882	--	129,280	477,997
2003	--	1,801	14,154	--	--	67,049	305,795	--	--	6,417	37,228	--	75,267	357,177
2004	--	3,289	20,148	--	--	60,421	250,615	--	--	9,202	37,398	--	72,912	308,161
2005	--	2,123	11,221	--	--	58,917	251,631	--	--	9,619	48,968	--	70,659	311,820
2006	--	2,181	9,882	--	--	63,735	245,168	--	--	8,466	74,128	--	74,382	329,178
2007	--	1,727	9,475	--	--	77,268	258,848	--	--	9,015	51,073	--	88,010	319,396
2008	--	4,489	15,832	--	--	81,648	245,823	--	--	18,529	93,429	--	104,666	355,084
2009	--	3,528	13,884	--	--	154,045	543,195	--	--	13,727	44,540	--	171,300	601,619
2010	--	10,357	29,270	--	--	120,531	304,002	--	--	22,364	77,146	--	153,252	410,418
2011	--	2,814	9,750	--	--	101,263	318,125	--	--	7,771	36,996	--	111,848	364,871
2012	--	3,023	10,958	--	--	55,464	192,134	--	--	6,813	27,723	--	65,300	230,815
2013	--	1,661	5,738	--	--	90,496	214,074	--	--	2,907	11,511	--	95,064	231,323
2014	--	4,783	13,526	--	--	109,279	260,130	--	--	13,341	47,057	--	127,403	320,713
2015	--	3,664	8,131	--	--	84,896	234,382	--	--	5,842	18,848	--	94,402	261,361
2016	7,416	4,822	12,238	92,225	7,519	29,146	128,890	33,839	5,608	3,469	42,916	146,607	37,437	184,044
2017	2,255	1,236	3,491	75,690	3,177	27,909	106,776	5,019	804	751	6,574	86,945	29,896	116,841
2018	3,888	2,595	6,483	45,430	2,183	21,725	69,338	19,056	3,224	2,382	24,662	73,781	26,702	100,483
2019	1,612	1,522	3,134	33,507	2,367	30,300	66,174	4,214	1,180	899	6,292	42,879	32,721	75,600
2020	2,047	2,054	4,101	42,542	4,718	28,132	75,392	23,001	3,920	5,278	32,199	76,228	35,464	111,692
2021	798	1,119	1,917	35,723	1,462	19,071	56,256	8,505	1,301	1,690	11,496	47,789	21,880	69,669
2022	3,923	2,979	6,902	50,996	2,506	23,189	76,691	31,037	2,504	6,737	40,278	90,966	32,905	123,871

¹ Prior to 2016, natural-origin abundances displayed include an unknown number of unclipped hatchery-origin fish.

Table 7. Returns of upriver summer steelhead to Lower Granite Dam, 1991-2022. ¹

Run Year ²	A-Index				B-Index				Total steelhead return			
	Clipped Hatchery	Unclipped Hatchery	Natural Origin	Total	Clipped Hatchery	Unclipped Hatchery	Natural Origin	Total	Clipped Hatchery	Unclipped Hatchery	Natural Origin	Total
1991-92	69,885	0	14,135	84,020	11,883	0	3,182	15,065	81,768	0	17,317	99,085
1992-93	83,420	0	13,617	97,037	25,566	0	5,777	31,343	108,986	0	19,394	128,380
1993-94	34,657	0	7,332	41,989	15,895	0	1,790	17,685	50,552	0	9,122	59,674
1994-95	31,956	0	5,873	37,829	7,178	0	2,231	9,409	39,134	0	8,104	47,238
1995-96	62,773	0	6,721	69,494	8,317	0	1,334	9,651	71,090	0	8,055	79,145
1996-97	67,075	0	5,980	73,055	12,211	0	1,645	13,856	79,286	0	7,625	86,911
1997-98	67,019	0	7,424	74,443	10,878	0	1,325	12,203	77,897	0	8,749	86,646
1998-99	43,832	0	7,074	50,906	17,455	0	2,301	19,756	61,287	0	9,375	70,662
1999-00	54,119	0	10,184	64,303	8,834	0	914	9,748	62,953	0	11,098	74,051
2000-01	79,589	10	17,689	97,288	17,128	0	2,886	20,014	96,717	10	20,575	117,302
2001-02	191,091	5,979	37,545	234,615	30,677	0	3,174	33,851	221,768	5,979	40,719	268,466
2002-03	110,535	11,734	28,308	150,577	51,358	6,618	13,623	71,599	161,893	18,352	41,931	222,176
2003-04	106,334	11,840	21,892	140,066	23,058	2,132	7,254	32,444	129,392	13,972	29,146	172,510
2004-05	94,225	9,166	18,297	121,688	23,179	2,005	4,774	29,958	117,404	11,171	23,071	151,646
2005-06	96,644	13,903	14,586	125,133	26,143	3,345	3,544	33,032	122,787	17,248	18,130	158,165
2006-07	85,210	15,234	7,877	108,321	33,332	5,880	1,633	40,845	118,542	21,114	9,510	149,166
2007-08	102,374	14,643	11,242	128,259	20,513	3,446	2,924	26,883	122,887	18,089	14,166	155,142
2008-09	94,205	13,079	18,216	125,500	40,713	6,998	5,659	53,370	134,918	20,077	23,875	178,870
2009-10	231,003	30,385	38,210	299,598	16,555	2,700	4,529	23,784	247,558	33,085	42,739	323,382
2010-11	110,750	17,721	34,549	163,020	31,574	4,118	9,584	45,276	142,324	21,839	44,133	208,296
2011-12	113,038	7,930	35,240	156,208	17,801	2,113	4,198	24,112	130,839	10,043	39,438	180,320
2012-13	63,611	4,767	19,806	88,184	13,695	3,970	3,337	21,002	77,306	8,737	23,143	109,186
2013-14	70,332	5,328	23,470	99,130	5,546	1,593	1,885	9,024	75,878	6,921	25,355	108,154
2014-15	89,341	5,755	38,861	133,957	21,067	3,639	6,928	31,634	110,408	9,394	45,789	165,591
2015-16	88,296	4,045	30,806	123,147	8,465	1,408	3,130	13,003	96,761	5,453	33,936	136,150
2016-17	52,825	3,556	12,575	68,956	25,724	4,145	3,001	32,870	78,549	7,701	15,576	101,826
2017-18	56,738	2,258	10,454	69,450	3,845	539	263	4,647	60,583	2,797	10,717	74,097
2018-19	26,786	1,412	7,055	35,253	13,118	2,218	1,229	16,565	39,904	3,630	8,284	51,818
2019-20	20,259	1,452	9,234	30,945	2,194	871	400	3,465	22,453	2,323	9,634	34,410
2020-21	25,370	1,501	11,868	38,740	13,529	3,678	3,179	20,386	38,899	5,179	15,048	59,126
2021-22	25,615	1,014	8,335	34,964	5,329	1,025	1,268	7,622	30,944	2,039	9,603	42,586
2022-23 ³	33,626	1,383	11,397	46,406	22,531	1,826	4,216	28,572	56,157	3,209	15,613	74,978

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

² Run year is July 1 to June 30 the following year.

³ Preliminary abundance estimates for July 1, 2022 to June 30, 2023. Final run year estimates will be available in December 2023.

Table 8. Adult Coho returns to the Columbia River, 1980-2022. ¹

Lower Columbia River										
Year	Harvest					Hatchery Returns	Natural Escapement	Tributary Dam Count ⁷	Bonneville Dam Count	Total Run ⁸
	Commercial ^{2,3,4}		Recreational ^{5,6}							
	Zones 1-5	SAFE	Estuary	Mainstem	Tributary					
1980-84 Ave	108.7	15.4	19.4	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	14.3	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	1,128.3
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	26.0	22.3	120.7	466.5
2011	13.5	48.8	7.6	1.7	16.4	108.3	26.7	8.7	146.5	378.1
2012	2.6	14.5	7.4	0.9	3.8	41.9	17.3	9.1	55.0	152.4
2013	9.8	38.6	7.6	1.0	9.7	81.9	23.0	21.6	59.6	252.8
2014	70.4	166.9	57.7	5.8	46.4	293.2	68.1	32.2	279.7	1,020.5
2015	4.5	26.6	36.9	1.0	6.8	43.5	8.3	4.6	37.4	169.6
2016	1.1	30.3	9.2	1.3	11.0	84.1	21.1	4.8	42.0	204.9
2017	0.9	36.9	18.2	3.1	7.3	61.1	19.8	12.3	76.0	235.6
2018	0.4	11.1	6.8	0.7	6.0	42.3	24.3	6.0	40.9	138.4
2019	2.7	18.6	22.8	1.1	3.9	50.9	23.9	12.3	73.9	210.1
2020	8.0	37.7	7.0	1.7	12.4	87.0	61.8	23.7	121.4	360.7
2021	15.4	96.7	37.0	6.0	19.9	160.8	51.2	35.0	243.6	665.6
2022	6.0	78.0	8.8	1.6	16.6	181.6	46.9	30.0	168.1	537.6

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 9. Early stock adult Coho returns to the Columbia River, 1980-2022. ¹

Year	Lower Columbia River										Total Run ⁸
	Harvest					Hatchery Returns	Natural Escapement	Tributary Dam Count ⁷	Bonneville Dam Count		
	Commercial ^{2,3,4}		Recreational ^{5,6}								
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	12.2	21.8	56.2	244.9	
2011	6.2	48.8	6.6	0.9	5.6	48.1	10.9	8.3	117.7	253.1	
2012	0.8	14.5	6.4	0.5	1.5	22.1	7.0	9.0	41.1	102.8	
2013	3.6	38.6	6.6	0.6	3.0	42.6	9.3	20.4	33.0	157.9	
2014	18.2	166.9	50.2	2.5	16.7	128.8	27.6	30.9	181.5	623.4	
2015	1.2	26.6	32.1	0.5	3.3	19.3	3.4	4.3	26.9	117.8	
2016	0.9	30.3	8.0	0.7	3.8	34.0	8.8	4.3	28.9	119.6	
2017	0.6	36.9	15.8	1.1	3.8	27.2	7.6	11.3	47.3	151.6	
2018	0.4	11.1	5.9	0.5	3.1	15.0	8.7	5.7	28.6	78.9	
2019	1.0	18.6	19.8	0.6	1.5	25.5	9.1	10.9	54.2	141.2	
2020	4.1	37.7	6.1	0.9	6.2	37.5	35.9	22.6	91.6	242.6	
2021	8.8	96.7	32.2	3.2	11.5	84.6	19.1	34.2	180.5	470.8	
2022	2.7	78.0	7.7	0.3	8.8	95.9	17.8	25.5	109.1	345.8	

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, 1980-2022. ¹

Year	Lower Columbia River										Total Run ⁸
	Harvest					Hatchery Returns	Natural Escapement	Tributary Dam Count ⁷	Bonneville Dam Count		
	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	13.7	0.6	64.5	221.6	
2011	7.3	0.0	1.0	0.8	10.8	60.1	15.8	0.4	28.8	124.9	
2012	1.8	0.0	1.0	0.4	2.3	19.9	10.3	0.1	13.9	49.5	
2013	6.1	0.0	1.0	0.3	6.7	39.3	13.6	1.2	26.6	94.9	
2014	52.2	0.0	7.5	3.3	29.7	164.5	40.4	1.3	98.2	397.2	
2015	3.2	0.0	4.8	0.5	3.5	24.2	4.8	0.3	10.5	51.8	
2016	0.3	0.0	1.2	0.7	7.2	50.1	12.3	0.5	13.1	85.3	
2017	0.4	0.0	2.4	2.0	3.5	33.9	12.2	1.0	28.7	84.0	
2018	0.0	0.0	0.9	0.1	2.9	27.4	15.6	0.3	12.3	59.4	
2019	1.7	0.0	3.0	0.5	2.4	25.4	14.8	1.4	19.7	68.9	
2020	3.9	0.0	0.9	0.8	6.2	49.5	25.9	1.1	29.8	118.1	
2021	6.6	0.0	4.8	2.8	8.4	76.2	32.1	0.8	63.1	194.8	
2022	3.2	0.0	1.2	1.3	7.8	85.7	29.1	4.5	59.0	191.8	

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 11. Lower Columbia River Coho natural spawner estimates in Oregon and Washington tributaries, 2011-2021. ^{1, 2}

Population	2011			2012			2013			2014			2015		
	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked									
Youngs Bay	476	161	34%	241	129	54%	NA	NA	--	NA	NA	--	NA	NA	--
Big Creek	333	160	48%	521	409	79%	NA	NA	--	NA	NA	--	NA	NA	--
Clatskanie	1,553	1,546	100%	696	619	89%	685	611	89%	3,397	3,246	96%	249	240	96%
Scappoose	298	298	100%	210	210	100%	979	979	100%	1,587	1,587	100%	487	487	100%
Clackamas	2,498	2,254	90%	1,755	1,580	90%	3,252	3,202	98%	12,444	10,670	86%	2,014	1,784	89%
Sandy	3,813	3,494	92%	1,198	1,165	97%	756	667	88%	6,111	5,942	97%	464	443	95%
Lower Gorge-Oregon	471	216	46%	220	96	44%	161	151	94%	739	362	49%	48	30	63%
Upper Gorge/Hood	743	232	31%	759	169	22%	1,599	561	35%	174	42	24%	11	4	36%
Grays/Chinook	1,287	53	4%	705	421	60%	1,837	677	37%	4,361	2,826	65%	439	145	33%
Elochoman/Skamokawa	1,273	551	43%	531	367	69%	1,111	650	59%	3,924	2,572	66%	381	204	54%
Mill/Abernathy/Germany	491	397	81%	376	368	98%	610	566	93%	2,208	1,941	88%	525	492	94%
L. Cowlitz (tribs. only)	3,327	3,040	91%	2,922	2,547	--	4,831	3,853	80%	19,603	18,178	93%	1,864	1,709	92%
Coweeman	2,460	2,356	96%	2,666	2,587	97%	3,982	3,501	88%	5,627	4,692	83%	1,027	803	78%
Toutle/Green	712	473	66%	1,187	841	71%	2,732	1,910	70%	6,766	4,489	66%	1,152	431	37%
SF Toutle	985	847	86%	1,771	1,582	89%	3,624	3,125	86%	9,630	7,781	81%	1,666	838	50%
Upper Cowlitz/Cispus	41,739	15,601	37%	10,872	3,306	30%	13,750	12	0%	61,581	13,844	22%	2,720	759	28%
Tilton	15,102	4,112	27%	12,770	2,746	22%	14,944	5,488	37%	28,864	18,145	63%	5,571	2,786	50%
Kalama ³	193	5	--	227	24	11%	378	45	12%	640	58	9%	118	12	10%
NF Lewis (Cedar Ck)	4,938	3,834	78%	1,627	1,375	85%	8,633	1,216	14%	10,801	2,078	19%	4,080	395	10%
EF Lewis	1,567	1,493	95%	2,318	2,179	94%	2,540	2,324	91%	2,298	1,868	81%	452	347	77%
Salmon Creek	1,272	1,236	97%	1,339	1,284	96%	1,695	1,668	98%	2,242	2,218	99%	745	731	98%
Washougal	591	546	92%	602	542	90%	793	543	68%	1,057	302	29%	370	114	31%
Lower Gorge-Washington ⁴	527	453	86%	547	454	83%	706	553	78%	837	564	67%	376	323	86%

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

² Washington tributary estimates for 2010-2015 updated using new methods.

³ In 2011, no carcasses were recovered to determine proportion unmarked.

⁴ Includes Hamilton, Hardy, and Duncan creeks.

Table 11 (continued)

Population	2016			2017			2018			2019			2020			2021		
	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked	Total	Unmarked	% unmarked
Youngs Bay	NA	NA	--	NA	NA	--	NA	NA	--	NA	NA	--	NA	NA	--	NA	NA	--
Big Creek	NA	NA	--	NA	NA	--	NA	NA	--	NA	NA	--	NA	NA	--	NA	NA	--
Clatskanie	491	464	95%	701	566	81%	78	25	32%	244	146	60%	NA	NA	--	NA	NA	--
Scappoose	1,242	1,200	97%	395	387	98%	178	178	100%	384	384	100%	NA	NA	--	NA	NA	--
Clackamas	1,787	1,628	91%	8,621	7,598	88%	3,489	3,159	91%	4,240	4,044	95%	NA	NA	--	NA	NA	--
Sandy	970	939	97%	2,384	2,384	100%	583	537	92%	1,052	1,052	100%	NA	NA	--	NA	NA	--
Lower Gorge-Oregon	425	395	93%	NA	NA	--	25	16	64%	192	184	96%	NA	NA	--	NA	NA	--
Upper Gorge/Hood	163	57	35%	NA	NA	--	149	107	72%	236	193	82%	NA	NA	--	NA	NA	--
Grays/Chinook	1,217	489	40%	881	175	20%	1,022	165	16%	1,799	570	32%	1,983	1,200	61%	2,686	1,210	45%
Elochoman/Skamokawa	987	589	60%	958	780	81%	1,483	944	64%	2,622	1,766	67%	2,385	2,112	89%	3,060	1,645	54%
Mill/Abernathy/Germany	1,084	944	87%	689	633	92%	861	734	85%	2,048	1,491	73%	1,704	1,571	92%	1,654	1,411	85%
L. Cowlitz (tribs. only)	4,697	4,290	91%	3,118	2,361	76%	2,997	2,370	79%	3,905	3,696	95%	5,133	4,857	95%	7,489	6,448	86%
Coweeman	3,067	2,654	87%	2,264	2,156	95%	3,187	3,036	95%	4,536	3,238	71%	5,684	4,910	86%	6,135	4,774	78%
Toutle/Green	3,399	878	26%	1,013	672	66%	963	653	68%	2,618	1,616	62%	2,429	1,971	81%	3,339	2,778	83%
SF Toutle	2,759	2,168	79%	908	832	92%	827	771	93%	2,734	2,495	91%	3,044	2,982	98%	3,576	3,190	89%
Upper Cowlitz/Cispus	21,256	1,831	9%	18,135	7,900	44%	11,526	337	3%	9,733	3,563	37%	20,697	8,867	43%	28,414	9,611	34%
Tilton	15,646	5,370	34%	16,526	8,075	49%	8,792	2,671	30%	5,674	---	---	11,859	2,368	20%	15,833	6,437	41%
Kalama	230	79	34%	159	53	33%	204	65	32%	483	160	33%	927	320	35%	877	183	21%
NF Lewis (Cedar Ck)	7,661	1,782	23%	7,707	2,890	37%	1,810	1,202	66%	4,362	3,695	85%	4,745	3,453	73%	12,850	4,696	37%
EF Lewis	937	414	44%	1,444	910	63%	1,743	1,532	88%	2,552	2,353	92%	2,138	1,953	91%	5,358	4,981	93%
Salmon Creek	1,604	1,546	96%	2,102	1,900	90%	2,625	2,364	90%	3,265	2,920	89%	3,493	3,016	86%	3,252	3,077	95%
Washougal	758	189	25%	874	214	24%	879	188	21%	1,544	674	44%	2,198	938	43%	1,575	1,323	84%
Lower Gorge-Washington	591	543	92%	498	406	82%	514	404	79%	1,428	1,038	73%	1,124	987	88%	1,595	1,519	95%

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

² Washington tributary estimates for 2010-2015 updated using new methods.

³ In 2011, no carcasses were recovered to determine proportion unmarked.

⁴ Includes Hamilton, Hardy, and Duncan creeks.

Table 12. Columbia River Chum abundance in select Washington tributaries and the mainstem Columbia River, 2005-2022.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 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	3,681	899	72	2,863	6,279	902
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	1,930	2,903	3,406	3,055	7,293	998
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	1,051	3,010	3,990	7,528	3,842	3,019
Grays R. broodstock take	132	119	135	88	107	288	294	220	250	246	128	128	118	250	222	195	192	194
I-205 area	923	869	576	644	1,154	2,148	4,912	2,586	1,466	1,472	4,757	5,245	1,647	2,518	1,339	2,324	3,883	5,220
Multnomah area	214	321	148	31	106	458	647	120	222	334	1,142	1,162	93	368	464	557	636	974
St Cloud area	97	180	3	1	29	126	343	1	84	85	344	242	103	121	89	90	460	8
Horsetail area	13	65	25	36	6	54	119	92	59	75	420	656	56	312	213	135	474	420
Ives area	288	466	132	295	171	214	162	230	175	409	1,306	1,914	347	1,639	2,940	1,212	2,376	3,632
Duncan Creek	7	42	9	2	26	48	85	4	27	24	153	208	7	129	76	78	488	255
Hardy Creek	74	109	12	3	46	175	157	75	56	108	350	354	14	193	64	104	166	17
Hamilton Creek	178	251	133	118	142	404	542	352	255	260	249	332	162	548	1,367	1,118	1,219	959
Hamilton Spring Channel	88	227	47	114	94	190	325	137	392	678	1,397	1,265	742	1,546	333	413	1,474	974
Grays 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	6,780	7,062	7,690	13,641	17,606	5,113
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	11,378	3,171	7,374	6,885	6,031	11,176	12,459
Sum	6,218	9,355	5,219	3,939	4,757	10,485	18,395	11,826	8,120	8,484	21,827	42,645	9,951	14,436	14,575	19,672	28,782	17,572

Table 13. Treaty Indian fall Zone 6 mainstem commercial gillnet seasons, 2022.

Gillnet Salmon and Setline Sturgeon Fisheries				
Days	Season	Dates	Special Regulations Gear	Area/Other
3.5	Fall Salmon	Aug 22, 6 AM - Aug 25, 6 PM	Set and Drift gill nets. 8" min. mesh size restriction.	All of Zone 6. Standard dam and river mouth sanctuaries are in effect, including the Spring Creek Hatchery sanctuary (1.5 miles downstream to 1 mile upstream of the hatchery ladder). Salmon, steelhead, shad, yellow perch, bass, walleye, catfish, and carp may be sold. Fish landed during open fishing periods may be sold after the period concludes. Sturgeon may not be sold.
4.5	Fall Salmon	Aug 29, 6 AM - Sep 2, 6 PM	Same.	Same.
5.5	Fall Salmon	Sep 5, 6 AM - Sep 10, 6 PM	Same.	Same.
5.5	Fall Salmon	Sep 12, 6 AM - Sep 17, 6 PM	Same.	Same.
4.5	Fall Salmon	Sep 19, 6 AM - Sep 23, 6 PM	Same.	Same, except the Spring Creek Hatchery sanctuary has been reduced to a 150-foot radius around the hatchery ladder.
3.5	Fall Salmon	Sep 26, 6 AM - Sep 29, 6 PM	Same.	Same.
3.5	Fall Salmon	Oct 3, 6 AM - Oct 6, 6 PM	Same.	Same.
	Fall Sturgeon			
	Bonneville Pool:	No season		
	The Dalles Pool:	No season		
	John Day Pool:	No season		

Table 14. Non-treaty fall commercial fishing seasons, 2022.

Mainstem Commercial Seasons				
Days	Season	Dates	Special Regulations	
			Gear	Area/Other
9 hrs	Early Fall: Gill Net	Aug 10, 9 PM - Aug 11, 6 AM	9" min. 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. Salmon (except Chum), white sturgeon, and shad may be sold. A maximum of four white sturgeon with a fork length of 44-50 inches may be possessed or sold by each participating vessel during each calendar week. The four white sturgeon possession and sales limit applies to mainstem fisheries only.
9 hrs		Aug 15, 9 PM - Aug 16, 6 AM	Same.	
9 hrs		Aug 17, 9 PM - Aug 18, 6 AM	Same.	
9 hrs		Aug 22, 9 PM - Aug 23, 6 AM	Same.	
9 hrs		Aug 24, 9 PM - Aug 25, 6 AM	Same.	
9 hrs		Aug 28, 9 PM - Aug 29, 6 AM	Same.	
9 hrs		Aug 30, 9 PM - Aug 31, 6 AM	Same.	
9 hrs		Sep 1, 9 PM - Sep 2, 6 AM	Same.	
10 hrs	Late Fall: Gill Net	Sep 18, 8 PM - Sep 19, 6 AM	Same.	Same, except a maximum of six white sturgeon with a fork length of 44-50 inches may be possessed or sold.
10 hrs		Sep 20, 8 PM - Sep 21, 6 AM	Same.	
10 hrs		Sep 22, 8 PM - Sep 23, 6 AM	Same.	
12 hrs		Sep 25, 7 PM - Sep 26, 7 AM	Same, except the multiple net rule is in effect.	

Table 14 (continued)

Mainstem Commercial Seasons					
Days	Season	Dates	Special Regulations		
			Gear	Area/Other	
18 hrs	Tangle Net	Sep 26, 4 AM - 10 PM	3 3/4" max. mesh size restriction. Unslackened single-wall multi-filament floater nets only. Monofilament nets are not allowed. Net length not to exceed 150 fathoms. There are no restrictions on the hang ratio. The use of slackers or stringers to slacken the net vertically is prohibited. Rip lines are allowed if they do not vertically slacken the net. Multiple net rule is in effect. Each boat must have two operable recovery boxes or one box with two chambers that meet the flow and size requirements standard for winter/spring tangle net fisheries.	Zones 1-3. Elokomina-A, Cowlitz River, Kalama-A, and Lewis-A sanctuaries are in effect. Adipose fin-clipped coho; Chinook, pink, and sockeye salmon, and shad may be sold. Soak times must not exceed 30 minutes. A red cork must be placed on the corkline every 25 fathoms. Nets that are fished between official sunset and official sunrise must have a lighted buoy on each end of the net that is not attached to the fishing vessel. A maximum of six white sturgeon with a fork length of 44-50 inches may be possessed or sold by each participating vessel during each calendar week (Sunday through Saturday).	
18 hrs		Sep 27, 4 AM - 10 PM			Same.
18 hrs		Sep 28, 4 AM - 10 PM			Same.
12 hrs	Gill Net	Sep 28, 7 PM - Sep 29, 7 AM	Same.	Same.	
18 hrs	Tangle Net	Sep 29, 4 AM - 10 PM	Same.	Same.	
14 hrs		Sep 30, 4 AM - 6 PM	Same.	Same.	
12 hrs	Gill Net	Oct 2, 7 PM - Oct 3, 7 AM	Same.	Same.	
18 hrs	Tangle Net	Oct 3, 4 AM - 10 PM	Same.	Same.	

Table 14 (continued)

Mainstem Commercial Seasons				
Days	Season	Dates	Special Regulations	
			Gear	Area/Other
18 hrs	Tangle Net	Oct 4, 4 AM - 10 PM	Same.	Same.
18 hrs		Oct 5, 4 AM - 10 PM	Same.	Same.
12 hrs	Gill Net	Oct 5, 7 PM - Oct 6, 7 AM	Same.	Same.
18 hrs	Tangle Net	Oct 6, 4 AM - 10 PM	Same.	Same.
14 hrs		Oct 7, 4 AM - 6 PM	Same.	Same.
18 hrs		Oct 10, 4 AM - 10 PM	Same.	Same.
18 hrs		Oct 11, 4 AM - 10 PM	Same.	Same.
18 hrs		Oct 12, 4 AM - 10 PM	Same.	Same.
18 hrs		Oct 13, 4 AM - 10 PM	Same.	Same.
14 hrs		Oct 14, 4 AM - 6 PM	Same.	Same.
18 hrs		Oct 17, 4 AM - 10 PM	Same.	Same.
18 hrs		Oct 18, 4 AM - 10 PM	Same.	Same.
18 hrs		Oct 19, 4 AM - 10 PM	Same.	Same.
18 hrs		Oct 20, 4 AM - 10 PM	Same.	Same.
14 hrs		Oct 21, 4 AM - 6 PM	Same.	Same.
18 hrs		Oct 24, 4 AM - 10 PM	Same.	Same.

Table 14 (continued)

Mainstem Commercial Seasons						
Days	Season	Dates	Special Regulations			
			Gear	Area/Other		
18 hrs		Oct 25, 4 AM - 10 PM	Same.	Same.		
18 hrs		Oct 26, 4 AM - 10 PM	Same.	Same.		
18 hrs		Oct 27, 4 AM - 10 PM	Same.	Same.		
14 hrs		Oct 28, 4 AM - 6 PM	Same.	Same.		
12 hrs	Youngs Bay - Fall	Aug 22, 7 PM - Aug 23, 7 AM	6" 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 from the first dock near the mouth 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 approximately 500 feet southerly (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.	The Youngs Bay Select Area is defined as waters of Youngs Bay and Youngs River southeasterly of the Highway 101 Bridge upstream to the regulatory marker(s) at the confluence of the Klaskanine and Youngs rivers, including the Walluski River downstream of the Highway 202 Bridge, and the Lewis and Clark River north (downstream) of the overhead power lines approximately 500 feet south (upstream) of Barrett Slough. During the fall season, Youngs River upstream of the regulatory marker at Battle Creek Slough is closed. If the marker at Battle Creek Slough is not in place, the boundary is defined by a line projecting northeasterly from a point (46°6'35.6"N latitude 123°47'42.0"W longitude) on the southern bank of Youngs River immediately downstream of the mouth of Battle Creek Slough to a point (46°6'41.6"N latitude 123°47'36.9"W longitude) located on the northern bank of Youngs River. All waters are under State of Oregon jurisdiction and are open to Oregon and Washington fishers who possess the appropriate licenses. Salmon (except Chum), white sturgeon and shad may be sold. A maximum of three white sturgeon with a fork length of 44-50 inches may be possessed or sold by each participating vessel during each calendar week (Sunday through Saturday).		
12 hrs		Aug 25, 7 PM - Aug 26, 7 AM			Same.	Same.
3 ½ 57		Aug 29, 7 PM - Sep 2, 7 AM Sep 5, 7 PM - Oct 31, noon			Same. Same. Same.	Same. Same. Same, except as of September 18, the possession and sale of white sturgeon is prohibited.

Table 14 (continued)

Select Area Commercial Seasons				
Days	Season	Dates	Special Regulation	
			Gear	Area/Other
12 hrs	Tongue Point / South Channel - Fall	Aug 29, 7 PM - Aug 30, 7 AM	<p>Tongue Point: 6" max. mesh size restriction. Nets may not exceed 250 fathoms in length and leadline may not exceed 2 lbs per fathom.</p> <p>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.</p> <p>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.</p>	<p>Tongue Point Select Area is defined as those waters of the Columbia River bounded by a line from a regulatory marker on the eastern shore of Tongue Point (midway between the red USCG light "2" at the tip of Tongue Point and the northernmost pier (#8) at the Tongue Point Job Corps facility) to the flashing green USCG light "3" on the rock jetty at the northwest tip of Mott Island, a line from a regulatory marker at the southeast end of Mott Island northeasterly to a regulatory marker on the northwest shore of Lois Island, and a line from a regulatory marker located on the Oregon shore approximately 300 yards northwest of the railroad bridge crossing the John Day River projecting easterly to a regulatory marker on the southwest shore of Lois Island. If the marker on the eastern shore of Tongue Point is not in place, the downstream boundary is defined by a line projecting from a point (46°12'31.1"N latitude 123°45'34.0"W longitude) on the eastern shore of Tongue Point to the flashing green USCG light "3" on the rock jetty at the northwest tip of Mott Island. If the marker on the Oregon shore is not in place, the upstream boundary is defined by a line projecting from a point (46°10'57.7"N latitude 123°44'35.3"W longitude) on the Oregon shore approximately 300 yards northwest of the railroad bridge crossing the John Day River projecting easterly to a regulatory marker on Lois Island. The South Channel is defined as those waters bounded by a line from a regulatory marker on the Oregon shore at John Day Point projecting northeasterly to a regulatory marker on Lois Island, and a line from a regulatory marker on Settler Point projecting northwesterly to the flashing red USCG light "10" then projecting westerly to the eastern tip of Burnside Island. Fishers in Tongue Point area may have onboard unstored gill nets legal for the South Channel fishing area. Permanent transportation rules are in effect. Salmon (except chum), white sturgeon and shad may be sold. A maximum of three white sturgeon with a fork length of 44-50 inches may be possessed or sold by each participating vessel during each calendar week (Sunday through Saturday).</p>

Table 14 (continued)

Select Area Commercial Seasons				
Days	Season	Dates	Special Regulation	
			Gear	Area/Other
12 hrs 18 hrs Nightly 18 hrs Nightly 18 hrs Nightly 18 hrs Nightly 18 hrs Nightly	Tongue Point / South Channel - Fall	Sep 1, 7 PM - Sep 2, 7 AM Sep 5 - Sep 9, 4 PM - 10 AM nightly Sep 12 - Sep 16, 4 PM - 10 AM nightly Sep 19 - Sep 23, 4 PM - 10 AM nightly Sep 26 - Sep 30, 4 PM - 10 AM nightly Oct 3 - Oct 7, 4 PM - 10 AM nightly	Same. Same. Same. Same. Same. Same.	Same. Same. Same. Same, except the possession and sale of white sturgeon is prohibited. Same. Same.
18 hrs Nightly 18 hrs Nightly 18 hrs Nightly	Tongue Point / South Channel - Fall	Oct 10 - Oct 14, 4 PM - 10 AM nightly Oct 17 - Oct 21, 4 PM - 10 AM nightly Oct 24 - Oct 28, 4 PM - 10 AM nightly	Same. Same. Same.	Same. Same. Same.
12 hrs	Blind Slough / Knappa Slough - Fall	Aug 29, 7 PM - Aug 30, 7 AM	6" 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 is defined as those waters of Blind Slough and Gnat Creek from a north-south line formed by regulatory markers at the mouth of Blind Slough to a regulatory marker in Gnat Creek located approximately 0.5 miles southeasterly (upstream) of the Barendse Road Bridge. Knappa Slough is defined as those waters of Knappa Slough, Calendar Slough, and Big Creek Slough bounded to the north (upstream) by a line projecting from a regulatory marker on the eastern shore of Karlson Island to the northernmost regulatory marker at the mouth of Blind Slough and bounded to the west (downstream) by a line projecting southerly from a regulatory marker on the southwestern tip of Karlson Island through regulatory markers on the western tips of Minaker Island to a marker on the Oregon shore. The waters of Knappa Slough within a 100-foot radius of the railroad bridge crossing Big Creek are closed. Salmon (except chum), white sturgeon and shad may be sold. A maximum of three white sturgeon with a fork length of 44-50 inches may be possessed or sold by each participating vessel during each calendar week (Sunday through Saturday).

Table 14 (continued)

Select Area Commercial Seasons				
Days	Season	Dates	Special Regulation	
			Gear	Area/Other
12 hrs	Blind Slough / Knappa Slough - Fall	Sep 1, 7 PM - Sep 2, 7 AM	Same.	Same.
16 hrs Nightly		Sep 5 - Sep 9, 6 PM - 10 AM nightly	Same.	Same.
16 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, except the possession and sale of white sturgeon is prohibited.
16 hrs Nightly		Sep 26 - Sep 30, 6 PM - 10 AM nightly	Same.	Same.
16 hrs Nightly		Oct 3 - Oct 7, 6 PM - 10 AM nightly	Same.	Same.
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.

Table 14 (continued)

Select Area Commercial Seasons				
Days	Season	Dates	Special Regulation	
			Gear	Area/Other
15 hrs Nightly	Deep River - Fall	Sep 12 - Sep 16, 6 PM - 9 AM nightly	6" 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. Nets are not allowed to be tied off to any stationary structures. Nets may not fully cross the navigational channel. It is unlawful to operate in any river, stream or channel any gillnet gear longer than three-fourths the width of the river, stream, or channel.	The Deep River fishing area includes all waters from West Deep River Road Bridge at the town of Deep River downstream to the mouth defined by a line from USCG navigation marker #16 southwest to a marker on the Washington shore. Salmon (except chum), white sturgeon and shad may be sold. A maximum of three white sturgeon with a fork length of 44-50 inches may be possessed or sold by each participating vessel during each calendar week (Sunday through Saturday)
15 hrs Nightly		Sep 19 - Sep 23, 6 PM - 9 AM nightly	Same.	Same, except the possession and sale of white sturgeon is prohibited.
15 hrs Nightly		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.
15 hrs Nightly		Oct 10 - Oct 14, 6 PM - 9 AM nightly	Same.	Same.
15 hrs		Oct 17, 6 PM - Oct 18, 9 AM	Same.	Same.
15 hrs		Oct 19, 6 PM - Oct 20, 9 AM	Same.	Same.
15 hrs		Oct 24, 6 PM - Oct 25, 9 AM	Same.	Same.
15 hrs		Oct 26, 6 PM - Oct 27, 9 AM	Same.	Same.
15 hrs		Oct 31, 6 PM - Nov 1, 9 AM	Same.	Same.

Table 14 (continued)

Select Area Commercial Seasons				
Days	Season	Dates	Special Regulation	
			Gear	Area/Other
15 hrs	Deep River - Fall (Cont.)	Nov 2, 6 PM - Nov 3, 9 AM	Same.	Same.
15 hrs		Nov 7, 5 PM - Nov 8, 8 AM	Same.	Same.
15 hrs		Nov 9, 5 PM - Nov 10, 8 AM	Same.	Same.
15 hrs		Nov 14, 5 PM - Nov 15, 8 AM	Same.	Same.
15 hrs		Nov 16, 5 PM - Nov 17, 8 AM	Same.	Same.
15 hrs		Nov 21, 5 PM - Nov 22, 8 AM	Same.	Same.
15 hrs		Nov 23, 5 PM - Nov 24, 8 AM	Same.	Same.

Table 15. Kept catch (adults and jacks) in fall season mainstem fisheries, 2022.

Treaty Fisheries^{1,2}						
Fishery ¹	Chinook	Coho	Chum	Pink	Summer Steelhead	White Sturgeon
Commercial Gillnet, Platform. and Hook & Line (8/26-10/5)	181,234	11,165	0	0	8,905	92
Permit Gillnet (8/19-22)	0	0	0	0	0	0
Platform, Hook & Line (8/1-25 and 10/6-12/31)	569	0	0	0	560	0
Fall Setline	0	0	0	0	0	0
<i>Treaty Total</i>	181,803	11,165	0	0	9,465	92
Non-Treaty Fisheries						
Fishery ¹	Chinook	Coho	Chum ³	Pink	Summer Steelhead	White Sturgeon
Early Fall Mainstem Commercial	24,219	929	--	--	--	184
Late Fall Mainstem Commercial	6,729	5,020	--	--	--	85
<i>Subtotal</i>	<i>30,948</i>	<i>5,949</i>	--	--	--	<i>269</i>
Beach Seine Commercial	0	0	--	--	--	--
Purse Seine Commercial	0	0	--	--	--	--
<i>Subtotal</i>	<i>0</i>	<i>0</i>	--	--	--	--
Select Areas Commercial	18,701	1,955	--	0	--	168
<i>Subtotal</i>	<i>6,166</i>	<i>78,504</i>	--	<i>0</i>	--	<i>168</i>
Buoy 10 Sport ⁴	28,355	8,847	--	--	--	--
Lower River Sport ⁴	9,863	1,632	--	--	3	885
Bonn. Dam to Hwy 395 Sport ⁴	9,781	4,765	--	--	3	--
Hanford Reach Sport ⁴	10,294	187	--	--	0	--
<i>Subtotal</i>	<i>58,293</i>	<i>15,431</i>	--	--	<i>6</i>	<i>885</i>
<i>Non-Treaty Total</i>	95,407	99,884	--	0	6	1,322
Grand Total	277,210	111,049	0	0	9,471	1,414

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, sales to wholesale dealers, and direct to public sales.

³ Chum possession and sales prohibited beginning in October 2013.

⁴ Data does not include release mortalities.

Table 16. Fishing periods, gear, and landings from mainstem Columbia River non-treaty commercial seasons, 2022.

Season	Fishing Period	Week	Hours	Zones	Mesh Size	WSTG Limit ¹	Del.	Chinook		Coho	Sockeye	Pink	Chum	White Sturgeon	
								ChS Adults	ChS Jacks						
Spring	May 23, 10 AM - 9 PM	22	11	4-5	4-1/4" max tangle-net	3	4	19	9		Prohibited	Prohibited	Prohibited	0	
	<i>Spring Season Totals (and average number of deliveries):</i>							4	19	9	--	--	--	0	
Summer	No season.	--	--	--	--	--	--	--	--	--	--	--	Prohibited	--	
	<i>Summer Season Totals (and average number of deliveries):</i>							0	0	0	0	0	0	--	0
August	Aug 10, 9 PM - Aug 11, 6 AM	33	9	4-5	9"-9 3/4"	4	13	161	0	0	0	0	Prohibited	7	
	Aug 15, 9 PM - Aug 16, 6 AM	34	9	4-5	9"-9 3/4"	4	28	735	14	0	0	0	Prohibited	29	
	Aug 17, 9 PM - Aug 18, 6 AM	34	9	4-5	9"-9 3/4"	4	38	593	9	0	0	0	Prohibited	9	
	Aug 22, 9 PM - Aug 23, 6 AM	35	9	4-5	9"-9 3/4"	4	50	2,557	4	0	0	0	Prohibited	41	
	Aug 24, 9 PM - Aug 25, 6 AM	35	9	4-5	9"-9 3/4"	4	58	4,109	38	0	0	0	Prohibited	29	
	Aug 28, 9 PM - Aug 29, 6 AM	36	9	4-5	9"-9 3/4"	4	62	5,730	224	0	0	0	Prohibited	26	
	Aug 30, 9 PM - Aug 31, 6 AM	36	9	4-5	9"-9 3/4"	4	58	7,301	498	0	0	0	Prohibited	21	
	Sep 1, 9 PM - Sep 2, 6 AM	36	9	4-5	9"-9 3/4"	4	54	3,033	142	0	0	0	Prohibited	22	
	<i>August Season Totals (and average number of deliveries):</i>							45	24,219	929	0	0	0	--	184
	Sep 18, 8 PM - Sep 19, 6 AM	39	10	4-5	8"-9 3/4"	6	47	2,481	511	0	0	0	0	Prohibited	29
	Sep 20, 8 PM - Sep 21, 6 AM	39	10	4-5	8"-9 3/4"	6	34	1,320	339	0	0	0	0	Prohibited	13
	Sep 22, 8 PM - Sep 23, 6 AM	39	10	4-5	8"-9 3/4"	6	25	1,017	192	0	0	0	0	Prohibited	23
	Sep 25, 7 PM - Sep 26, 7 AM	40	12	4-5	8"-9 3/4"	6	17	731	122	0	0	0	0	Prohibited	13
	Sep 26, 4 AM - 10 PM	40	18	1-3	3-3/4" max tangle-net	6	13	66	253	0	0	0	0	Prohibited	0
	Sep 27, 4 AM - 10 PM	40	18	1-3	3-3/4" max tangle-net	6	5	13	79	0	0	0	0	Prohibited	0
Sep 28, 4 AM - 10 PM	40	18	1-3	3-3/4" max tangle-net	6	4	10	54	0	0	0	0	Prohibited	0	
Sep 28, 7 PM - Sep 29, 7 AM	40	12	4-5	8"-9 3/4"	6	7	381	25	0	0	0	0	Prohibited	5	
Sep 29, 4 AM - 10 PM	40	18	1-3	3-3/4" max tangle-net	6	15	34	285	0	0	0	0	Prohibited	0	
Sep 30, 4 AM - 6 PM	40	14	1-3	3-3/4" max tangle-net	6	7	3	111	0	0	0	0	Prohibited	0	
Oct 2, 7 PM - Oct 3, 7 AM	41	12	4-5	8"-9 3/4"	6	6	374	29	0	0	0	0	Prohibited	1	
Oct 3, 4 AM - 10 PM	41	18	1-3	3-3/4" max tangle-net	6	10	26	158	0	0	0	0	Prohibited	0	
Oct 4, 4 AM - 10 PM	41	18	1-3	3-3/4" max tangle-net	6	6	5	149	0	0	0	0	Prohibited	0	
Oct 5, 4 AM - 10 PM	41	18	1-3	3-3/4" max tangle-net	6	12	32	337	0	0	0	0	Prohibited	0	
Oct 5, 7 PM - Oct 6, 7 AM	41	12	4-5	8"-9 3/4"	6	4	204	5	0	0	0	0	Prohibited	1	

Table 16 (continued)

Season	Fishing Period	Week	Hours	Zones	Mesh Size	WSTG Limit ¹	Del.	Chinook	Coho	Sockeye	Pink	Chum	White Sturgeon
Late-Fall	Oct 6, 4 AM - 10 PM	41	18	1-3	3-3/4" max tangle-net	6	13	9	684	0	0	Prohibited	0
	Oct 7, 4 AM - 6 PM	41	14	1-3	3-3/4" max tangle-net	6	9	9	214	0	0	Prohibited	0
	Oct 10, 4 AM - 10 PM	42	18	1-3	3-3/4" max tangle-net	6	0	0	0	0	0	Prohibited	0
	Oct 11, 4 AM - 10 PM	42	18	1-3	3-3/4" max tangle-net	6	3	4	66	0	0	Prohibited	0
	Oct 12, 4 AM - 10 PM	42	18	1-3	3-3/4" max tangle-net	6	1	0	1	0	0	Prohibited	0
	Oct 13, 4 AM - 10 PM	42	18	1-3	3-3/4" max tangle-net	6	4	2	206	0	0	Prohibited	0
	Oct 14, 4 AM - 6 PM	42	14	1-3	3-3/4" max tangle-net	6	6	4	416	0	0	Prohibited	0
	Oct 17, 4 AM - 10 PM	43	18	1-3	3-3/4" max tangle-net	6	0	0	0	0	0	Prohibited	0
	Oct 18, 4 AM - 10 PM	43	18	1-3	3-3/4" max tangle-net	6	4	0	166	0	0	Prohibited	0
	Oct 19, 4 AM - 10 PM	43	18	1-3	3-3/4" max tangle-net	6	1	0	6	0	0	Prohibited	0
	Oct 20, 4 AM - 10 PM	43	18	1-3	3-3/4" max tangle-net	6	1	0	10	0	0	Prohibited	0
	Oct 21, 4 AM - 6 PM	43	14	1-3	3-3/4" max tangle-net	6	5	2	76	0	0	Prohibited	0
	Oct 24, 4 AM - 10 PM	44	18	1-3	3-3/4" max tangle-net	6	0	0	0	0	0	Prohibited	0
	Oct 25, 4 AM - 10 PM	44	18	1-3	3-3/4" max tangle-net	6	6	1	292	0	0	Prohibited	0
	Oct 26, 4 AM - 10 PM	44	18	1-3	3-3/4" max tangle-net	6	3	0	148	0	0	Prohibited	0
	Oct 27, 4 AM - 10 PM	44	18	1-3	3-3/4" max tangle-net	6	3	1	79	0	0	Prohibited	0
	Oct 28, 4 AM - 6 PM	44	14	1-3	3-3/4" max tangle-net	6	1	0	7	0	0	Prohibited	0
	<i>Late-Fall Season Totals (and average number of deliveries):</i>							9	6,729	5,020	0	0	--
FALL TOTALS:							<u>Ave.Del.</u>	<u>Chinook</u>	<u>Coho</u>	<u>Sockeye</u>	<u>Pink</u>	<u>Chum</u>	<u>White Sturgeon</u>
							15	30,948	5,949	0	0	Prohibited	269
2022 Grand Totals:								<u>Chinook</u>	<u>Coho</u>	<u>Sockeye</u>	<u>Pink</u>	<u>Chum</u>	<u>White Sturgeon</u>
								30,976	5,949	0	0	Prohibited	269

¹ A white sturgeon possession and sales limit applied during mainstem fishing periods that occurred on May 23 and during August 10 through October 28.

Table 17. Lower Columbia River winter/spring/summer/fall commercial landings, 2022.

<i>Winter/Spring/Summer</i>											<i>(OR/WA Fish Tickets—December 29, 2022)</i>		
<u>Season</u>	<u>CHINOOK</u>		<i>Z 4-5 Spring Chinook</i>		<u>SOCKEYE</u>		<u>SHAD</u>		<u>WHITE STURGEON ¹</u>				
	<i>Mainstem</i>	<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 <i>(no season during 2022)</i>		—	—	—	—	—	—	—	—	—	—	—	—
Spring		28	239	19	9	—	—	3,201	5,666	0	0	—	—
Summer <i>(no season during 2022)</i>		—	—	—	—	—	—	—	—	—	—	—	—
Shad (Area 2S)		—	—	—	—	—	—	1,564	4,232	—	—	—	—
Mainstem Totals		28	239	19	9	0	0	4,765	9,898	0	0		
<u>Select Areas</u>	<u>CHINOOK</u>		<u>COHO</u>		<u>SOCKEYE</u>		<u>SHAD</u>		<u>WHITE STURGEON ¹</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>		
Youngs Bay Winter		637	7,613	0	0	0	0	0	0	24	703		
Youngs Bay Spring		8,417	86,653	0	0	0	0	0	0	46	1,344		
Youngs Bay Summer		5,427	60,225	1	6	21	67	7	14	35	1,070		
Tongue Point Winter		156	1,978	0	0	0	0	0	0	6	157		
Tongue Point Spring		562	5,831	0	0	0	0	0	0	57	1,611		
Tongue Point Summer		558	5,928	0	0	2	5	0	0	62	1,895		
Blind & Knappa Sloughs Winter		473	5,847	0	0	0	0	0	0	1	31		
Blind & Knappa Sloughs Spring		1,378	15,150	0	0	0	0	0	0	14	394		
Blind & Knappa Sloughs Summer		1,027	12,147	0	0	4	13	0	0	6	166		
Deep River Winter		37	518	0	0	0	0	0	0	6	177		
Deep River Spring		29	307	0	0	0	0	0	0	3	71		
Select Area Totals		18,701	202,197	1	6	27	85	7	14	260	7,619		
Lower Columbia River Commercial GRAND TOTALS	Chinook	18,729	202,436	1	6	27	85	4,772	9,912	260	7,619		
Winter/Spring/Summer 2022													

<i>Fall</i>													
<u>Season</u>	<u>CHINOOK</u>		<u>COHO</u>		<u>PINK</u>		<u>CHUM</u>		<u>WHITE STURGEON ¹</u>				
	<i>Mainstem</i>	<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 (Early-Fall) (Zone 4-5; 9 - 9 ^{3/4} inch)		24,219	367,024	929	6,448	0	0	No Retention		184	5,459		
August (Early-Fall) Subtotals		24,219	367,024	929	6,448	0	0			184	5,459		
Late-Fall (Zone 4 - 5; 8 - 9 ^{3/4} inch gillnet)		6,508	91,785	1,223	10,288	0	0	No Retention		85	2,521		
Late-Fall (Zone 1 - 3; 3 ^{3/4} inch tangle-net)		221	1,855	3,797	25,948	0	0	No Retention		0	0		
Late-Fall Subtotals		6,729	93,640	5,020	36,236	0	0			85	2,521		
Fall Mainstem Totals		30,948	460,664	5,949	42,684	0	0			269	7,980		
<u>Select Areas</u>	<u>CHINOOK</u>		<u>COHO</u>		<u>PINK</u>		<u>CHUM</u>		<u>WHITE STURGEON ¹</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>		
Youngs Bay		1,969	20,030	35,381	261,656	0	0	No Retention		43	1,343		
Tongue Point		2,435	26,104	25,866	186,936	0	0	No Retention		80	2,561		
Blind Slough & Knappa Slough		1,526	17,231	15,302	107,710	0	0	No Retention		32	968		
Deep River		236	2,568	1,955	14,228	0	0	No Retention		13	428		
Fall Select Area Totals		6,166	65,933	78,504	570,530	0	0			168	5,300		
Lower Columbia River Commercial GRAND TOTALS	Chinook	37,114	526,597	84,453	613,214	0	0	No Retention		437	13,280		
Fall 2022													

FINAL GRAND TOTALS											
2022		<u>CHINOOK</u>		<u>COHO</u>		<u>PINK</u>		<u>CHUM</u>		<u>WHITE STURGEON ¹</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>
		55,843	729,033	84,454	613,220	0	0	No Retention		697	20,899
for Lower Columbia R. Commercial Fisheries		<u>SOCKEYE</u>		<u>SHAD</u>		<u>SMELT (Mainstem)</u>		<u>GREEN STURGEON</u>			
		<u>Numbers</u>	<u>Pounds</u>	<u>Numbers</u>	<u>Pounds</u>	<u>Pounds</u>		<u>Numbers</u>	<u>Pounds</u>		
		27	85	4,772	9,912	27,398		No Retention			

¹ The sale of white sturgeon was allowed in mainstem commercial fisheries below Bonneville Dam on May 23 and during August 10 through October 28. White sturgeon were also allowed to be sold during Select Area commercial fisheries from February 24 through September 17.

Table 18. Stock composition of adult fall Chinook catch in mainstem Columbia River fisheries, 2022. ¹

Non-Treaty Fisheries	LRH	LRW	BPH	URB	MCB ²	Other ³	Total
Buoy 10 Recreational ⁴	7,651	0	8,404	12,401	3,122	1,202	32,780
Lower Columbia Recreational ⁴	296	182	2,054	5,780	1,644	653	10,609
Above Bonneville Dam Recreational ^{4,5}	0	0	1,216	16,188	1,670	1,305	20,379
August Commercial	1,968	154	14,294	5,842	1,230	64	23,552
September/October Commercial	1,457	77	914	2,445	1,611	0	6,504
Select Area Commercial	3,759	0	1,293	260	103	467	5,882
Subtotal	15,131	413	28,175	42,916	9,380	3,691	99,706
Treaty Fisheries							
Sales to Licensed Buyers	266	0	98,688	33,915	11,347	92	144,308
C&S, OTB and other non-ticketed catch	63	0	22,277	7,302	2,720	16	32,378
Subtotal	329	0	120,965	41,217	14,067	108	176,686
Grand Total	15,460	413	149,140	84,133	23,447	3,799	276,392

¹ Based on Big Sheet BS21P; catch totals may not match data presented elsewhere in this report.

² Includes lower river bright (LRB) stock.

³ Out of basin stocks/strays, including Select Area Bright (SAB) fall Chinook.

⁴ Includes release mortalities.

⁵ Bonneville Dam to McNary Dam and Hanford Reach.

Table 19a. Fall season A-Index summer steelhead harvest and incidental release mortalities in mainstem Columbia River non-treaty fisheries, 1999-2022.

Year	Commercial Below BON ²		Recreational Below BON ³			Recreational BON Pool			Recreational TDA-Hwy 395			Recreational Dip-Ins ⁴			Fall Season Total	
	Hatchery- Origin Release Mortalities (clipped and unclipped)	Natural- Origin Release Mortalities	Hatchery-Origin		Natural- Origin	Hatchery-Origin		Natural- Origin	Hatchery-Origin		Natural- Origin	Hatchery-Origin		Natural- Origin	Hatchery- Origin	Natural- Origin
			Kept	Rel. Mort.	Rel. Mort.	Kept	Rel. Mort.	Rel. Mort.	Kept	Rel. Mort.	Rel. Mort.	Kept	Rel. Mort.	Rel. Mort.	Total Mort.	Rel. Mort.
1999	125	35	3,577	--	123	465	--	14	3,741	--	111	3,167	--	95	11,076	378
2000	217	67	4,401	--	165	761	--	22	4,102	--	125	9,089	--	264	18,571	644
2001	394	87	4,419	--	192	1,385	--	33	8,979	--	254	17,319	--	413	32,496	979
2002	565	153	2,971	--	139	616	--	21	6,368	--	260	9,230	--	319	19,749	892
2003	1,384	165	3,943	--	182	905	--	35	3,577	--	149	12,772	--	471	22,580	1,001
2004	868	206	2,387	--	95	953	--	39	1,830	--	70	8,362	--	324	14,399	735
2005	549	112	2,462	--	102	686	--	21	4,084	--	137	9,698	--	300	17,479	673
2006	423	120	3,610	--	157	817	--	27	4,010	--	140	9,447	--	308	18,307	751
2007	182	54	4,293	--	158	971	--	29	6,671	--	201	11,586	--	350	23,703	792
2008	404	102	1,952	18	74	958	7	27	2,605	24	90	3,950	29	110	9,947	404
2009	781	195	7,068	62	346	1,778	9	48	6,592	61	169	20,180	128	489	36,659	1,246
2010	475	173	4,770	43	230	1,080	8	42	2,361	19	115	6,667	50	262	15,472	822
2011	1,016	287	11,364	167	576	2,859	29	99	4,106	48	140	7,666	82	251	27,336	1,353
2012	417	141	5,166	61	251	918	10	34	4,552	75	151	4,739	59	164	15,997	741
2013	388	175	6,034	51	593	1,107	7	65	2,401	41	100	7,048	67	357	17,144	1,291
2014	572	277	6,184	56	455	1,343	11	75	2,580	28	130	7,426	59	378	18,258	1,315
2015	431	146	4,168	26	228	929	4	36	4,685	34	166	10,920	53	419	21,250	995
2016	488	125	1,497	20	73	380	3	10	1,685	19	44	4,930	36	120	9,057	371
2017	264	70	198	43	52	70	3	6	171	97	75	329	158	106	1,332	307
2018	79	29	1,117	6	75	37	0	10	0	0	0	981	21	178	2,242	293
2019	48	23	0	23	20	4	2	5	40	1	8	150	72	128	340	184
2020	101	31	0	24	11	0	0	0	33	8	13	126	39	50	331	105
2021	150	52	10	34	19	0	0	1	20	2	2	28	23	29	268	103
2022	132	33	2	26	14	0	0	1	2	3	1	7	19	27	192	76
5-yr Ave	102	34	226	23	28	8	1	3	19	3	5	258	35	83	674	152
10-yr Ave	265	96	1,921	31	154	387	3	21	1,162	23	54	3,194	55	179	7,041	504

¹ From target and non-target fisheries occurring in August-October downstream of The Dalles Dam and in August-December upstream of The Dalles Dam. Stock composition derived from data collected during sampling at Bonneville Dam. Prior to 2008, natural-origin release mortalities displayed include an unknown number of unclipped hatchery-origin fish. Estimates for 2020-22 are preliminary, and all data are subject to change. BON = Bonneville Dam, TDA = The Dalles Dam

² Reflects incidental release mortalities (clipped and unclipped). Includes mortalities from pilot beach seine and purse seine fisheries that occurred in 2015 and 2016. Beginning in 2018, includes estimated mortalities in the Select Area commercial fisheries.

³ Beginning in 2017, includes mortalities from the Buoy 10 recreational fishery.

⁴ Includes dip-in mortalities in select tributaries upstream of Bonneville Dam where non-local steelhead may "dip in" to seek cool-water refuge. Kept catch based on Catch Record Cards when creel-based estimates are not available.

Table 19b. Fall season B-Index summer steelhead harvest and incidental release mortalities in mainstem Columbia River non-treaty fisheries, 1999-2022.¹

Year	Commercial Below BON ²		Recreational Below BON ³			Recreational BON Pool			Recreational TDA-Hwy 395			Recreational Dip-Ins ⁴			Fall Season Total	
	Hatchery- Release Mortalities (clipped and unclipped)	Natural- Origin Release Mortalities	Hatchery-Origin		Natural- Origin	Hatchery-Origin		Natural- Origin	Hatchery-Origin		Natural- Origin	Hatchery-Origin		Natural- Origin	Total Mort.	Rel. Mort.
			Kept	Rel. Mort.	Rel. Mort.	Kept	Rel. Mort.	Rel. Mort.	Kept	Rel. Mort.	Rel. Mort.	Kept	Rel. Mort.	Rel. Mort.		
1999	52	9	469	--	5	101	--	1	994	--	14	751	--	11	2,367	41
2000	56	14	649	--	31	140	--	4	1,986	--	23	1,979	--	51	4,809	123
2001	214	24	615	--	22	170	--	3	3,199	--	32	4,224	--	53	8,422	134
2002	331	92	550	--	54	191	--	9	5,307	--	155	4,801	--	175	11,181	485
2003	389	62	228	--	19	87	--	5	654	--	25	1,646	--	83	3,004	194
2004	267	69	92	--	6	65	--	3	489	--	16	965	--	38	1,878	132
2005	209	48	179	--	16	101	--	4	1,740	--	59	1,868	--	73	4,098	200
2006	241	26	638	--	15	181	--	3	2,605	--	50	3,802	--	70	7,467	164
2007	145	24	453	--	12	199	--	4	4,795	--	107	4,034	--	84	9,626	230
2008	301	53	639	6	24	292	2	8	2,657	30	36	2,625	21	51	6,572	171
2009	77	24	257	4	26	117	2	5	2,962	61	66	3,141	32	103	6,651	223
2010	246	74	1,264	5	62	359	1	13	2,417	13	68	3,362	14	106	7,682	323
2011	238	29	689	10	21	203	2	4	1,127	21	16	1,468	20	21	3,779	91
2012	63	19	452	10	29	127	3	5	2,477	64	36	1,066	27	27	4,287	116
2013	52	7	105	1	3	49	1	1	693	17	14	698	17	10	1,632	35
2014	151	20	191	6	10	158	4	3	1,184	31	17	1,908	47	32	3,682	83
2015	51	12	44	2	4	41	1	1	840	25	23	645	15	21	1,664	61
2016	63	10	365	15	9	108	2	1	1,629	36	11	1,677	26	18	3,921	49
2017	42	7	30	2	2	10	0	0	13	29	2	41	12	4	179	15
2018	22	3	69	6	3	3	0	0	0	0	0	133	22	18	254	24
2019	15	2	0	1	0	3	1	0	0	0	0	41	17	9	79	11
2020	136	18	0	8	2	0	0	0	22	10	4	91	30	18	297	42
2021	45	5	1	5	1	0	0	0	3	1	0	4	6	2	64	8
2022	106	15	1	10	3	0	1	0	0	4	0	5	18	12	145	30
5-yr Ave	65	8	14	6	2	1	1	0	5	3	1	55	18	12	168	23
10-yr Ave	68	10	81	6	4	37	1	1	438	15	7	524	21	14	1,192	36

¹ From target and non-target fisheries occurring in August-October downstream of The Dalles Dam and in August-December upstream of The Dalles Dam. Stock composition derived from data collected during sampling at Bonneville Dam. Prior to 2008, natural-origin release mortalities displayed include an unknown number of unclipped hatchery-origin fish. Estimates for 2020-22 are preliminary, and all data are subject to change. BON = Bonneville Dam, TDA = The Dalles Dam

² Reflects incidental release mortalities (clipped and unclipped). Includes mortalities from pilot beach seine and purse seine fisheries that occurred in 2015 and 2016. Beginning in 2018, includes estimated mortalities in the Select Area commercial fisheries.

³ Beginning in 2017, includes mortalities from the Buoy 10 recreational fishery.

⁴ Includes dip-in mortalities in select tributaries upstream of Bonneville Dam where non-local steelhead may "dip in" to seek cool-water refuge. Kept catch based on Catch Record Cards when creel-based estimates are not available.

Table 20. Time, area, and gear restrictions for early fall non-treaty commercial mainstem fisheries, 2009-2022.

Year/Fishery	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	"
2011	Aug 22-23, Aug 24-25	9pm – 6am nightly	"	"
	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	"	"	"
2012	Aug 25-26, Aug 28-29	"	"	"
	Aug 30-31	"	"	"
	Aug 5-6	9pm – 6am nightly	Zones 1-5	9” min
	Aug 12-13, Aug 14-15	"	Zones 4-5	"
2013	Aug 16-17, Aug 19-20	"	"	"
	Aug 21-22, Aug 23-24	"	"	"
	Aug 26-27, Aug 28-29	"	"	"
	Aug 11-12, Aug 13-14	9pm – 6am nightly	Zones 4-5	9” min
2014 Gillnet	Aug 15-16, Aug 18-19	"	"	"
	Aug 20-21, Aug 22-23	"	"	"
	Aug 25-26	"	"	"
	Aug 28-29	9pm – 2am	"	"
2014 Seine	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	"	"	"
2015 Gillnet	Sep 1-2	9pm – 2am	"	"
	Aug 19, 21, 26, 28	6am – 7:30pm	Zones 1-2	3.5” max
2015 Seine	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	"	"	"
2016 Gillnet	Aug 31	2am – 6am	Zones 4-5	9” min
	Aug 24-26, 31	6am – 8pm	Zones 2-3	3.5” max
2016 Seine	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	"	"	"
2017 Gillnet	Aug 22, 24, 29, 31	6am – 4pm	Zones 2-3 Beach	3.5” max
	"	"	Zones 1, 3 Purse	"
2018 Gillnet	Aug 22-23, Aug 24-25	9pm – 6am nightly	Zones 4-5	9” min
	Aug 27-28, Aug 29-30	"	"	"
	Aug 31-Sep 1	"	"	"
2018 Seine	Aug 21-22, Aug 23-24	9pm – 6am nightly	Zones 4-5	9” min
	Aug 26-27	"	"	"
	Aug 29-30	10pm – 5am nightly	"	"

Table 20 (continued)

Year/Fishery	Date(s)	Hours	Area	Mesh Size
2019 Gillnet	Aug 14-15, Aug 19-20	9pm – 6am nightly	Zones 4-5	9" min
	Aug 21-22, Aug 26-27	"	"	"
2020 Gillnet	Aug 10-11, Aug 12-13	9pm – 6am nightly	Zones 4-5	9" min
	Aug 17-18, Aug 19-20	"	"	"
	Aug 24-25, Aug 26-27	"	"	"
2021 Gillnet	Aug 9-10, Aug 11-12	9pm – 6am nightly	Zones 4-5	9" min
	Aug 16-17, Aug 18-19	"	"	"
	Aug 23-24, Aug 25-26	"	"	"
	Aug 30-31, Sep 1-2	"	"	"
2022 Gillnet	Aug 10-11, Aug 15-16	9pm – 6am nightly	Zones 4-5	9" min
	Aug 17-18, Aug 22-23	"	"	"
	Aug 24-25, Aug 28-29	"	"	"
	Aug 30-31, Sep 1-2	"	"	"

Table 21. Landed catch from early fall non-treaty commercial mainstem fisheries, 1970-2022.

Year	Season ¹	Fishing Days	Chinook	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-Sept 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	46,300	410	--	--	--
2017	Aug 22-Sept 1	5	14,000	220	--	500	--
2018	Aug 21-30	4	8,300	380	--	400	--
2019	Aug 14-27	4	6,500	210	--	500	--
2020	Aug 10-27	6	16,600	350	--	400	--
2021	Aug 9-Sept 2	8	21,200	2,770	--	300	--
2022	Aug 10-Sept 2	8	24,200	930	--	180	--

¹ Minimum mesh size: 1970-1974 7-1/4"; 1975-1979 8"; and 1980-2020 9" (except: 1980, 1983, & 1992 no mesh restr.; 8" during the following - 1982, 1987, 1988 (below Longview Br.), early-August portions of 2002 & 2003, and early/mid-August portions of 2004-2006).

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 during 2014-16.

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

⁵ Eight Pink salmon were landed during August 2011.

⁶ Estimated catch from mainstem Columbia River commercial seine fisheries not included

Table 22. Landed catch from late fall mainstem and Select Area non-treaty commercial fishing seasons, 1980-2022.

Year	Mainstem Season ¹	Mainstem Fishing Days	Chinook		Coho		Chum ^{3,8}	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	165,640	16,100	377,380	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	24,200	9,400	42,300	4 ⁸	--	400	--
2014 ⁷	Sep 14 – Oct 31	40	52,200	24,200	68,900	168,600	-- ⁸	--	-- ⁹	--
2015 ⁷	Sep 15 – Oct 20	10	47,800	18,200	3,700	27,400	-- ⁸	--	-- ⁹	--
2016 ⁷	Sep 18-23	2	11,600	12,400	300	34,700	-- ⁸	--	-- ⁹	--
2017	Sep 17-20	2	5,400	12,000	700	38,000	-- ⁸	--	500	--
2018	No season	0	0	6,600	0	12,100	-- ⁸	--	100	--
2019	Sep 30 – Oct 25	12	2,400	3,400	2,500	19,300	-- ⁸	--	200	--
2020	Sep 15 – Oct 30	23	17,000	3,000	7,400	43,500	-- ⁸	--	200	--
2021	Sep 19 – Oct 29	27	6,000	4,500	10,300	99,100	-- ⁸	--	500	--
2022	Sep 18 – Oct 28	32	6,700	6,200	5,000	78,500	-- ⁸	--	250	--

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 total fall season landings from Washington terminal (1980-1982), Youngs Bay (1980-present), Tongue Point/South Channel, Blind Slough/Knappa Slough, and Deep River (1996-present), and Steamboat Slough (2000-2005) Select Area fisheries.

³ Includes landings from Select Area fall fisheries beginning in 1997

⁴ Sale of steelhead in non-treaty commercial fisheries prohibited since 1975

⁵ Includes landings from Select Area fall fisheries.

⁶ Green Sturgeon retention prohibited since July 7, 2006.

⁷ Estimated catch from mainstem Columbia River commercial seine fisheries not included.

⁸ Chum possession and sales prohibited for non-treaty commercial fisheries beginning in October, 2013

⁹ White Sturgeon retention prohibited during 2014-16.

Table 23. Select Area fall commercial fisheries landings, 2009-2022.

Year	Site	Chinook	Coho	Pink	Chum ²	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	13	1	No Retention
	Tongue Point	2,527	6,504	19	1	No Retention
	Blind Slough ¹	5,768	1,388	4	2	No Retention
	Deep River	2,295	15,083	6	129	No Retention
		22,929	49,513	42	133	0
2012	Youngs Bay	16,197	5,986		3	No Retention
	Tongue Point	2,466	3,902		0	No Retention
	Blind Slough ¹	3,366	1,534		2	No Retention
	Deep River	1,691	3,932		20	No Retention
		23,720	15,354		25	0
2013	Youngs Bay	14,362	14,254	3	3	39
	Tongue Point	5,843	14,165	5	0	42
	Blind Slough ¹	2,362	3,882	2	1	14
	Deep River	1,595	10,002	5	0	8
		24,162	42,303	15	4	103
2014	Youngs Bay	11,850	65,936	1	Prohibited	No Retention
	Tongue Point	5,471	50,752	0	Prohibited	No Retention
	Blind Slough ¹	4,669	24,620	0	Prohibited	No Retention
	Deep River	2,166	27,262	1	Prohibited	No Retention
		24,156	168,570	2		0
2015	Youngs Bay	6,844	11,500	0	Prohibited	No Retention
	Tongue Point	3,623	9,721	1	Prohibited	No Retention
	Blind Slough ¹	3,407	1,700	1	Prohibited	No Retention
	Deep River	4,305	4,524	1	Prohibited	No Retention
		18,179	27,445	3		0
2016	Youngs Bay	6,398	15,784	0	Prohibited	No Retention
	Tongue Point	2,007	11,284	0	Prohibited	No Retention
	Blind Slough ¹	2,027	1,493	0	Prohibited	No Retention
	Deep River	2,011	6,162	3	Prohibited	No Retention
		12,443	34,723	3		0
2017	Youngs Bay	6,277	13,603	3	Prohibited	115
	Tongue Point	2,251	12,534	0	Prohibited	82
	Blind Slough ¹	1,636	2,460	0	Prohibited	9
	Deep River	1,870	9,382	3	Prohibited	31
		12,034	37,979	6		237

Table 23 (continued)

Year	Site	Chinook	Coho	Pink	Chum ²	White Sturgeon
2018	Youngs Bay	2,945	4,229	0	Prohibited	52
	Tongue Point	1,035	3,682	1	Prohibited	32
	Blind Slough ¹	1,401	1,477	0	Prohibited	23
	Deep River	1,223	2,723	1	Prohibited	10
		6,604	12,111	2		117
2019	Youngs Bay	853	3,589	0	Prohibited	88
	Tongue Point	879	7,229	1	Prohibited	106
	Blind Slough ¹	953	7,269	0	Prohibited	4
	Deep River	686	1,204	0	Prohibited	14
		3,371	19,291	1		212
2020	Youngs Bay	870	19,783	0	Prohibited	0
	Tongue Point	916	10,903	0	Prohibited	0
	Blind Slough ¹	1,150	10,424	0	Prohibited	0
	Deep River	81	2,390	1	Prohibited	0
		3,017	43,500	1		0
2021	Youngs Bay	2,012	42,651	6	Prohibited	61
	Tongue Point	1,468	31,056	1	Prohibited	221
	Blind Slough ¹	820	17,509	2	Prohibited	33
	Deep River	174	7,841	0	Prohibited	56
		4,474	99,057	9		371
2022	Youngs Bay	1,969	35,381	0	Prohibited	43
	Tongue Point	2,435	25,866	0	Prohibited	80
	Blind Slough ¹	1,526	15,302	0	Prohibited	32
	Deep River	236	1,955	0	Prohibited	13
		6,166	78,504	0		168

¹ Includes fishing periods in Knappa Slough.

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

Table 24. Fall-season recreational harvest of Chinook and Coho in Oregon Select Area sites and adjacent tributaries, 2008-2022. ^{1, 2}

Year	Chinook	Coho
2008	1,104	297
2009	1,267	418
2010	909	256
2011	812	208
2012	1,003	96
2013	932	181
2014	1,146	971
2015	563	641
2016	544	115
2017	568	162
2018	796	169
2019	65	148
2020	92	74
2021	255	588
2022	830	808

¹ Big Creek, Gnat Creek, Knappa/Blind sloughs, Klaskanine River (includes N. and S. Forks), Lewis & Clark River, Youngs River and Bay, and John Day River.

Table 25. Angler trips and kept catch in the Buoy 10 recreational fishery, 1982-2022. 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	0.50	4,178	0.59
1984 Buoy 10 Total	67,365	12,177	0.18	74,370	1.10	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	0.40	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	0.30
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	1.30
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	0.00	1,795	0.19	1,795	0.19
1995 Buoy 10 Total	25,186	607	0.02	5,026	0.20	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	0.60
1998 Buoy 10 Total	29,998	5,784	0.19	3,175	0.11	8,959	0.30
1998 Astoria Bridge Total	11,044	3,484	0.32	3,142	0.28	6,626	0.60
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	0.40
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
2017 Buoy 10 Total	93,547	28,398	0.30	18,834	0.20	47,232	0.50
2018 Buoy 10 Total	67,318	11,620	0.17	6,761	0.10	18,381	0.27
2019 Buoy 10 Total	76,987	11,274	0.15	22,775	0.30	34,049	0.44
2020 Buoy 10 Total	72,443	14,633	0.20	7,064	0.10	21,697	0.30
2021 Buoy 10 Total	105,865	20,789	0.20	37,031	0.35	57,820	0.55
2022 Buoy 10 Total	85,187	28,355	0.33	8,847	0.10	37,202	0.44

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

Table 26. Fall Salmon angler trips and kept catch on the lower Columbia River, August-October, 1980-2022.

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	1,852	1,168
2017 ^{1,2,3}	114,721	26,138	1,701	3,114	62	237	881
2018 ^{1,2}	69,629	9,802	697	650	32	1,104	861
2019 ^{1,2}	58,655	7,165	587	1,046	108	0	366
2020 ^{1,2}	90,413	19,677	2,132	1,537	232	0	385
2021 ^{1,2}	87,268	18,900	2,280	5,524	280	11	478
2022 ^{1,2}	52,993	9,863	2,157	1,632	125	3	452

¹ Partial Chinook closure year.

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, 2015, and 2017, a 20-day MSF in 2013 and a 21-day MSF in 2016.

Table 27. Mainstem fall Chinook recreational fisheries upstream of Bonneville Dam, 2003-2022.

Bonneville Dam to Hwy 395 Recreational Fishery		
Year	Kept Adult Chinook	Chinook Season
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	5,802	Aug 1 - Dec 31
2017	5,851	Aug 1 - Oct 21
2018	958	Aug 1 - Sept 12, salmon closed Sep 13-Dec 31
2019	3,644	Aug 1 - Sept 25, salmon closed Sep 26-Dec 31
2020	6,442	Aug 1 - Sep 8, Sep 11-13, Sep 19 - Dec 31
2021	6,141	Aug 1 - Dec 31
2022 ¹	9,781	Aug 1 - Oct 7
Hanford Reach Recreational Fishery		
Year	Kept Adult Chinook	Chinook Season
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	16,859	Aug 16 - Oct 31
2017	11,496	Aug 16 - Oct 31
2018	8,672	Aug 16 - Oct 16
2019	11,822	Aug 16 - Oct 31
2020	14,651	Aug 16 - Oct 31
2021	11,277	Aug 16 - Oct 31
2022 ¹	10,246	Aug 16 - Oct 31

¹ Preliminary

Table 28. Treaty fishery open area and Spring Creek Sanctuary restrictions during fall season commercial set and drift gillnet seasons, 1995-2022.

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. mesh 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 6th opening. Small sanctuary 5th opening and last three openings. 8" min mesh restriction for the first seven out of nine openings.
2017	Zone 6	Standard sanctuary all openings. 8" min mesh restriction for all openings.
2018	Zone 6	Standard sanctuary for first four openings. Small Sanctuary for last two. 8" min mesh restriction for all openings.
2019	Zone 6	Standard sanctuary for first five openings. Small Sanctuary for last one. 8" min mesh restriction for all openings.
2020	Zone 6	Standard sanctuary for first three openings. Small Sanctuary for last four openings. 8" min mesh restriction for all openings.
2021	Zone 6	Standard sanctuary for first three openings. Small Sanctuary for last five openings. 8" min mesh restriction for all openings.
2022	Zone 6	Standard sanctuary for first three openings. Small Sanctuary for last four openings. 8" min mesh restriction for all openings.

Table 29. Fall mainstem Columbia River treaty fishery landings, 1980-2022.

Year	Season ²	Fishing Days ³	Numbers Landed ¹			
			Chinook Adults	Coho	Steelhead ⁴	White Sturgeon ⁵
1980-84 Ave ⁶	Aug 6- Nov 5	15	41,760	1,640	19,720	260
1985-89 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	106,625	21,625	26,339	94
2009 ¹⁷	Aug 24- Oct 1	23	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
2017 ¹⁷	Aug 21-Oct 5	30.5	117,463	8,731	8,439	71
2018 ¹⁷	Aug 27-Oct 6	22.0	54,653	4,526	6,208	348
2019 ¹⁷	Aug 26-Oct 5	19.0	62,746	3,180	2,880	38
2020 ¹⁷	Aug 24-Oct 7	26.5	101,076	15,015	9,411	88
2021 ¹⁷	Aug 23-Oct 14	32.0	64,353	23,226	3,249	88
2022 ¹⁷	Aug 22-Oct 6	30.5	175,898	11,165	9,492	92

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. dipnet catches during open mainstem seasons, and extended Klickitat River commercial seasons beginning in 1988.

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.

³ Mainstem commercial 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.

⁷ Spring Creek sanctuary area open to fishing Aug 23-28 and Aug 29-Sep 3.

⁸ Includes Sep 29-Oct 4 dipnet 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.

Table 29 (continued)

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 dipnet 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 dipnet season.

¹² An additional 200 Chinook catch occurred above Priest Rapids Dam. Includes 1,900 coho captured in an extended Klickitat River dipnet 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 November 14-30 and Zone 63 (John Day Pool) during November 14-December 7.

¹⁶ Target sturgeon gillnet season adopted for Zone 61 (Bonneville Pool) during December 1-14. No sturgeon were landed.

¹⁷ Includes all fall season harvest – Aug 1-Dec 31.

Table 30. Fall treaty fisheries catch composition, 2022. ¹

Fishery			Numbers Landed				
			Chinook ²	Steelhead	Sturgeon	Coho ²	Walleye
Platform, Hook & Line	Weeks 31-34 (8/1-20)	Ticket	484	398	0	0	0
		Non-Ticket	85	162	0	0	1
	Late Fall (thru 12/31)	Ticket	251	96	0	341	0
		Non-Ticket	231	294	0	896	0
	PHL Total:		1,051	950	0	1,237	1
Commercial Gillnet	Week 35 (8/22-8/25)	Ticket	2,668	85	0	3	3
		Non-Ticket	471	130	26	8	2
		Total	3,139	215	26	11	5
	Week 36 (8/29-9/2)	Ticket	19,848	400	0	442	4
		Non-Ticket	3,281	135	32	78	1
		Total	23,129	535	32	520	5
	Week 37 (9/5-9/10)	Ticket	39,746	837	0	1,068	3
		Non-Ticket	13,361	432	4	188	1
		Total	53,107	1,269	4	1,256	4
	Week 38 (9/12-9/17)	Ticket	53,100	1,268	0	2,025	5
		Non-Ticket	9,371	224	23	357	1
		Total	62,471	1,492	23	2,382	6
	Week 39 (9/19-9/23)	Ticket	21,399	1,624	0	1,793	0
		Non-Ticket	4,980	287	4	316	5
		Total	26,379	1,911	4	2,109	5
	Week 40 (9/26-9/29)	Ticket	8,089	1,744	0	2,042	3
		Non-Ticket	1,427	308	3	360	1
		Total	9,516	2,052	3	2,402	4
	Week 41 (10/3-10/6)	Ticket	1,932	920	0	942	3
Non-Ticket		1,079	121	0	306	2	
Total		3,011	1,041	0	1,248	5	
		GN Total:	180,752	8,515	92	9,928	33
	Drano Steelhead			27			
Fall Setline	none			0			
Grand Total			181,803	9,492	92	11,165	34

¹ Ticketed catch estimates based on preliminary landings. Non-ticketed catch includes C&S (take home) and sales directly to the public. 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 31. Aerial set net counts for Zone 6 treaty Indian fall gillnet salmon fisheries during statistical weeks, 35-40, 1999-2022.

Year	Number of Set Nets		
	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
2017	458	396	515
2018	489	301	622
2019	425	340	503
2020	462	346	529
2021	332	239	480
2022	305	164	386

Table 32. Fall season treaty impact rates on natural-origin and total B-Index (since 2008) upriver summer steelhead, 1999-2022. ¹

Year	Natural Origin Impacts		Total B	B-Index Allowed	
	A-Index	B-Index		Wild	Total B
1999	5.4%	12.6%		15%	
2000	4.3%	14.3%		15%	
2001	4.0%	11.5%		15%	
2002	2.7%	3.4%		15%	
2003	2.5%	14.9%		15%	
2004	3.2%	11.1%		15%	
2005	3.8%	12.3%		15%	
2006	5.2%	16.0%		15%	
2007	3.6%	11.6%		15%	
2008	4.6%	13.3%	14.7%	NA	15%
2009	5.2%	14.4%	17.1%	NA	20%
2010	4.0%	13.3%	15.5%	NA	20%
2011	5.9%	32.7%	25.0%	NA	20%
2012	6.0%	12.7%	13.1%	NA	15%
2013	6.6%	15.6%	13.8%	NA	13%
2014	7.6%	16.4%	13.4%	NA	20%
2015	6.3%	14.4%	15.1%	NA	13%
2016	8.6%	15.6%	10.0%	NA	20%
2017	6.9%	8.3%	6.0%	NA	13%
2018	4.5%	5.7%	5.3%	NA	13%
2019	3.7%	6.4%	6.9%	NA	13%
2020	4.9%	13.2%	13.0%	NA	15%
2021	5.1%	11.2%	8.5%	NA	13%
2022	6.3%	14.6%	11.1%	NA	13%
5-yr Ave	4.9%	10.2%	9.0%		13%
10-yr Ave	6.1%	12.1%	10.3%		15%

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 sales to the general public and C&S catch beginning in 1994.

² Run sizes prior to 2016 are not corrected for unclipped hatchery origin fish and therefore unclipped harvest impacts over-estimate of the true wild impact rate.

Table 33. Fall season non-treaty harvest and impact rates on natural-origin A- and B-Index upriver summer steelhead, 1999-2022. ¹

Year	Harvest Mortalities		Harvest Impact Rate		Allowed Impact Rate	
	A-Index	B-Index	A-Index	B-Index	A-Index	B-Index
1999	378	41	0.67%	1.08%	2.0%	2.0%
2000	644	123	1.01%	1.47%	2.0%	2.0%
2001	979	134	0.71%	1.11%	2.0%	2.0%
2002	892	485	1.02%	1.50%	2.0%	2.0%
2003	1,001	194	1.49%	3.02%	2.0%	2.0%
2004	735	132	1.22%	1.44%	2.0%	2.0%
2005	673	200	1.14%	2.08%	2.0%	2.0%
2006	751	164	1.18%	1.94%	2.0%	2.0%
2007	792	230	1.02%	2.56%	2.0%	2.0%
2008	404	171	0.49%	0.92%	2.0%	2.0%
2009	1,246	223	0.81%	1.63%	2.0%	2.0%
2010	822	323	0.68%	1.45%	2.0%	2.0%
2011	1,353	91	1.34%	1.18%	2.0%	2.0%
2012	741	116	1.34%	1.71%	2.0%	2.0%
2013	1,291	35	1.43%	1.19%	2.0%	2.0%
2014	1,315	83	1.20%	0.62%	2.0%	2.0%
2015	995	61	1.17%	1.04%	2.0%	2.0%
2016	371	49	1.27%	1.42%	2.0%	2.0%
2017	307	15	1.10%	1.99%	2.0%	2.0%
2018	293	24	1.35%	1.02%	2.0%	2.0%
2019	184	11	0.61%	1.19%	2.0%	2.0%
2020	105	42	0.37%	0.80%	2.0%	2.0%
2021	103	8	0.54%	0.45%	2.0%	2.0%
2022	76	30	0.33%	0.44%	2.0%	2.0%
5-yr Ave	152	23	0.6%	0.8%	2.0%	2.0%
10-yr Ave	504	36	0.94%	1.02%	2.0%	2.0%

¹ Harvest mortalities are non-retention mortalities from commercial and recreational fisheries occurring in August-October downstream of The Dalles Dam and in August-December upstream of The Dalles Dam. Prior to 2008, natural-origin release mortalities displayed include an unknown number of unclipped hatchery-origin fish. Estimates for 2021 and 2022 are preliminary, and all data are subject to change.

Table 34. Lower Columbia Natural (LCN) Coho ocean and in-river exploitation rates, 2005-2022.

Year ¹	Exploitation Rates			
	Ocean	In-River ²	Actual	Allowed
2005	11.0%	6.5%	17.5%	21.4%
2006	6.8%	6.5%	13.3%	15.0%
2007	11.9%	6.7%	18.6%	20.0%
2008	3.6%	3.7%	7.3%	8.0%
2009	10.7%	10.5%	21.2%	20.0%
2010	7.6%	6.9%	14.5%	15.0%
2011	5.8%	7.7%	13.5%	15.0%
2012	9.9%	3.4%	13.3%	15.0%
2013	9.8%	3.3%	13.1%	15.0%
2014	12.0%	5.3%	17.2%	22.5%
2015	17.1%	7.2%	24.3%	23.0%
2016	8.0%	2.0%	9.0%	18.0%
2017	7.0%	4.0%	11.0%	18.0%
2018	9.4%	1.7%	11.1%	18.0%
2019	15.9%	3.6%	19.5%	23.0%
2020	4.9%	2.1%	7.0%	18.0%
2021	7.8%	2.8%	10.6%	30.0%
2022	10.2%	1.5%	11.7%	23.0%

¹ LCN Coho listed under the federal Endangered Species Act in August 2005.

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

Table 35. Lower Columbia River tule fall Chinook exploitation rates, 2006-2022. ¹

Year	Exploitation Rates				
	Ocean	Columbia ²	Total	Allowed	InRiverHR
2003		4.7%			7.7%
2004		7.4%			9.9%
2005		7.9%			12.7%
2006	34.9%	11.0%	45.9%	49%	17.0%
2007	40.7%	8.8%	49.5%	42%	14.9%
2008	27.4%	7.2%	34.6%	41%	10.0%
2009	23.4%	11.0%	34.3%	38%	14.3%
2010	28.8%	6.2%	34.9%	38%	8.7%
2011	30.7%	10.1%	40.8%	37%	14.5%
2012	32.8%	10.2%	43.1%	41%	15.2%
2013	23.6%	9.3%	32.9%	41%	
2014	33.0%	7.4%	40.4%	41%	
2015	27.5%	7.5%	34.9%	41%	
2016	25.6%	10.4%	36.0%	41%	
2017	28.4%	7.7%	36.1%	41%	
2018	25.7%	8.9%	34.5%	38%	
2019	21.0%	10.3%	31.3%	38%	
2020	14.4%	11.4%	25.7%	38%	
2021	24.2%	13.5%	37.7%	38%	
2022	22.8%	7.9%	30.6%	41%	

¹ Preliminary pending review

² Fall season non-treaty fisheries.

Table 36. ESA impact summary for fall season fisheries, 2022. ¹

Management Guidelines	Pre-Season		Post Season	
	ESA Allowed	Planned Total	ESA Allowed	Actual Total
Fall Chinook ²				
Snake River natural-origin	45.00%	45.00%	45.00%	27.74%
Non-Treaty	15.00%	15.00%	15.00%	11.30%
Treaty	30.00%	30.00%	30.00%	16.44%
LCN Tule ER (Ocean and Columbia R.)	38.0%	38.0%	41.0%	30.61%
Upriver Summer Steelhead ³				
Non-Treaty natural-origin A-Index Steelhead	2.00%	0.56%	2.00%	0.33%
Non-Treaty natural-origin B-Index Steelhead	2.00%	0.86%	2.00%	0.44%
Treaty Total B-Index Steelhead	13.00%	13.00%	13.00%	11.13%
LCR Coho ER (Ocean and Columbia R.)	23.00%	17.55%	23.00%	11.67%
Lower Columbia Chum	5.00%	1.17%	5.00%	0.73%

¹ Adults only. All data preliminary.

² Non-treaty data includes fisheries from Buoy 10 upstream to Hwy. 395, near Pasco, WA.

³ Non-treaty summer steelhead impacts include tributary catch from "dip-ins"

Table 37. Upriver bright and Snake River natural-origin fall Chinook in-river harvest rates, 2007-2022.

Upriver Bright Harvest Rates				
Year	Treaty	Non-Treaty	Total	Post-Season Allowed
2007	15.95%	7.44%	23.39%	31.29%
2008	19.91%	7.83%	27.74%	31.25%
2009 ¹	27.36%	10.16%	37.52%	31.25%
2010	18.02%	8.13%	26.15%	33.25%
2011	24.88%	13.94%	38.82%	45.00%
2012	20.53%	14.06%	34.59%	45.00%
2013	20.60%	11.03%	31.63%	45.00%
2014	22.31%	12.47%	34.78%	45.00%
2015	19.94%	11.46%	31.40%	45.00%
2016	23.26%	14.77%	38.03%	45.00%
2017	26.34%	16.10%	42.44%	45.00%
2018	20.22%	9.35%	29.57%	31.25%
2019 ²	19.21%	7.37%	26.58%	45.00%
2020	18.87%	9.34%	28.21%	45.00%
2021	11.13%	10.52%	21.65%	45.00%
2022	16.18%	12.92%	29.10%	45.00%

Snake River Natural Origin Harvest Rates				
Year	Treaty	Non-Treaty	Total	Post-Season Allowed
2007	15.95%	7.44%	23.39%	31.29%
2008	19.91%	7.83%	27.74%	31.25%
2009 ¹	27.36%	10.16%	37.52%	31.25%
2010	18.02%	8.13%	26.15%	33.25%
2011	24.88%	13.94%	38.82%	45.00%
2012	20.53%	14.06%	34.59%	45.00%
2013	20.70%	10.58%	31.28%	45.00%
2014	22.37%	12.23%	34.60%	45.00%
2015	20.00%	11.21%	31.21%	45.00%
2016	23.26%	14.62%	37.88%	45.00%
2017	26.34%	15.95%	42.29%	45.00%
2018	20.22%	9.35%	29.57%	31.25%
2019 ²	19.21%	7.37%	26.58%	45.00%
2020	18.87%	9.34%	28.21%	45.00%
2021	11.13%	10.44%	21.57%	45.00%
2022	16.44%	11.30%	27.74%	45.00%

¹ Due to the final SRW abundance in 2009, post-season allowed harvest rates were reduced from 27% and 11% for treaty and non-treaty fisheries, respectively.

² Due to the URB abundance exceeding 200,000 based on the final run-reconstruction in 2019, post-season allowed harvest rates increased from preseason rates of 23% and 8.25% for treaty and non-treaty fisheries, respectively.